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Psychological processes of change in adolescents in a residential treatment setting.

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PSYCHOLOGICAL PROCESSES OF CHANGE IN ADOLESCENTS IN A RESIDENTIAL TREATMENT SETTING.

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Abstract

Recent evidence indicates that the proportion of young people developing significant psychosocial problems is increasing (Rutter, 1995). This thesis focuses upon a small percentage of the growing number of adolescents who experience significant psychopathology; adolescents admitted to a regional inpatient psychiatric unit. Chapter 1 provides the theoretical background to the thesis; reviewing the literature on both the methodology and outcome of studies conducted with adolescents in inpatient adolescent psychiatric services. It suggests that future investigations take account of the practical impossibility of conducting high quality, standard double-blind control trials in such settings and outlines four empirical alternatives to such designs; evaluation of components of the therapy employed in residential settings; the use of problem-oriented case records; prediction of outcome across time; investigating the reasons for the effectiveness of established predictors of outcome. The next four chapters describe a series of studies utilising the last three of these suggested approaches in a cohort of adolescents admitted to a regional psychiatric unit. Chapter 2 is a cross-sectional study describing the sample upon which the remainder of the thesis is based. It focuses principally upon describing the psychopathology of the adolescents from three perspectives; that of the adolescent, their parents and the therapeutic team. It examines the inter-relationships between mood, behaviour and family functioning. Chapter 3 describes the results of an investigation into the relationships between self-esteem, autobiographical memory, attributional style, social problem-solving and the experience of depression and hopelessness. Chapter 4 examines the clinical effectiveness of the treatment at the unit as assessed by problem

severity as rated by adolescents and their parents and standardised measures of mood and self-esteem . Chapter 5 examines to what extent outcome can be predicted on the basis of initial problem severity, mood and cognitive style (autobiographical memory, attributional stye, problem-solving and self-esteem). Each chapter is written as a separate paper with abstract, literature review, method, results and discussion; however, reference to the overall findings is made throughout for ease of reading. The final chapter draws together themes from the whole thesis and discusses the psychological processes which mediate change during the adolescent treatment programme described here. It concludes that the cognitive and meta-cognitive processes which mediate change are best understood as related to internal working models derived from attachment experiences. A model for understanding individual variation in these processes is outlined and strategies for testing the proposed model are advanced.

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Chapter 1

Evaluating Adolescent Units: Some considerations for research and clinical practice.[1]

[1] This chapter was published as Swales & Kiehn (1995) and was written by the first author with comments by the second.

Abstract

Recent reviews of the effectiveness of residential treatment for adolescents have attempted to identify predictors of outcome in the residential setting. In general, variables which predict outcome relate to the pathology of the adolescent, factors relating to their family, for example their involvement in the treatment programme, and aspects of the treatment itself. However, it has not proved possible to identify a consistent set of predictors of outcome across residential settings or treatment programmes. The heterogeneity of the outcome data has been attributed to serious methodological flaws present in much of the recent research. Strategies used in conventional psychotherapy outcome trials to overcome methodological weaknesses, for example, blind assessment and random assignment to treatment conditions, have been suggested as remedies to improve the quality of the outcome data (Pfeiffer, 1989). This paper discusses why such strategies may be difficult to implement in residential settings. Alternative, theoretically motivated, designs are then considered; examining the effectiveness of components of therapy; use of problem-oriented case records; prediction of outcome across time; examining the reasons for the effectiveness of established predictors. These designs may assist in overcoming some of the problems in conducting good quality research in residential settings.

Research into the effectiveness of adolescent psychiatric treatment is of long standing (Zimmerman, 1990; Zimmerman and Sanders, 1988) and a substantial number of both original studies (Ainsworth, 1984; Gabel & Schindledecker, 1992; Garber & Polsky, 1970; Gossett, *et al,* 1977; 1983; Kivovitz *et al*, 1974; Lewis *et al*, 1980; Neilsen *et al*, 1985; Pyne *et al*, 1985; Turner *et al*, 1985) and reviews (Curry, 1991; Fineberg *et al,* 1980; Gossett, 1983; Machalow, 1982; Pfeiffer, 1989; Pfeiffer & Strzelecki, 1990; Zimmerman, 1990) examining its effectiveness have been produced. There is some agreement across these studies on the classes of variables which affect outcome; for example, factors relating to the individual, to his or her family and to the treatment itself (section 1.2). However, these research findings have been extensively criticised on the grounds of methodological flaws.

Pfeiffer (1989) and Pfeiffer & Strzelecki (1990) combine a rigorous review of the research findings with a thorough review of the methodology of the studies with suggestions for improvement in the latter. These methodological criticisms form a useful framework from which to evaluate subsequent research and to examine the future direction of outcome research. Recent research has addressed some of the methodological problems but not all. This review aims to explore the reasons for this failure to successfully address the methodological criticisms in the context of the difficulties of conducting outcome research within an adolescent in-patient setting. Despite these difficulties, however, high quality research findings remain essential if effective treatments are to be developed. It is with this in

mind that four empirical possibilities are suggested and explored to overcome the methodological problems identified in previous research.

1.1. Residential settings: Description and aims.

In-patient services for adolescents are currently provided either within purpose built adolescent units or within hospital wards which may also cater for children as well as adolescents.[2] In most units there is a flexibility of approach incorporating individual, family and group work according to the needs of the adolescent and their family. The method of delivery of these basic elements will vary according to the theoretical orientation of the unit. Some units function as modified therapeutic communities (Jones, 1968; Clark, 1977). These units tend to assume that the problems and difficulties which led to the adolescent's referral will be acted out in his or her relationships with staff and peers within the unit; it is the attention to the difficulties within these relationships and their resolution which enables therapeutic progress to be made. Other units are influenced mainly by psychodynamic approaches and take an interpretative approach to the understanding of the adolescent's difficulties. Others may be more influenced by a Family Therapy orientation and run multiple family groups as well as providing family therapy for each adolescent and their family. Other units may be more behavioural in approach, for example, using a token economy to effect behaviour change.

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[2]There are 39 adolescent units in the UK providing in-patient services to ameliorate emotional and behavioural difficulties. There are two hospital wards offering a similar service. In total these facilities provide 590 residential treatment beds for adolescents (APSA, 1990).

In ward based services the same elements of individual psychotherapy, group and family work may also be present. However, a belief-system or theoretical approach to the difficulties of the adolescents, shared by all staff members, may be less evident. For example, adolescents admitted to a ward may be less likely to receive a structured approach to their interaction difficulties with other ward residents. However, it is the view of Hersov and Bentovim (1985) that even in ward-based environments the structure and organization of the ward may provide a therapeutic milieu. It is possible, therefore, that in some cases, the difference between ward based and unit based services for adolescents may reduce to a difference in emphasis.

The precise age ranges of each unit vary but are usually within the 11-18 age range. A significant proportion of those admitted are considered to suffer from either emotional or conduct disorders. Approximately 70% suffer from either of these disorders or a mixed presentation (Steinberg, 1982). The admissions policies vary with some units excluding psychotic adolescents or young people who harm themselves. Abuse, physical, sexual and emotional, is common in the histories of those admitted (Jaffa & Dezsery, 1989) and self-injury occurs in 30 to 40% (Ainsworth, 1984). In general, seriously violent young people, who may have committed an offence, are excluded from these residential settings and may be housed in a secure setting or within the Criminal Justice System.

Criteria for admission to in-patient facilities have been specified (Hersov & Bentovim, 1985). However, there are likely to be variations across units in admission policy. These are likely to be most significant when considering

national differences in health care delivery. For example, Patrick, Padgett, Burns, Schlesinger & Cohen (1993) demonstrated that decreased availability of health care benefits has a negative effect on the number and duration of admissions to residential adolescent facilities in the U.S.A. These variations in admission policy make it difficult to compare research findings on the efficacy of residential treatment from one unit to another. This problem is particularly acute when comparing findings from the U.S.A. and the U.K..

1.2. Predictors of outcome in residential settings.

In the evaluation of outcome of treatments there are two types of question which may be asked. The first is the **prescriptive question.** This question aims to identify which, of a range of treatments, is most effective for a particular problem and, therefore, which should be regarded as the treatment of choice. For example, in the treatment of depression, clinical trials of drugs vs psychotherapy have been used to attempt to address the question of which is the most effective treatment for depression (Williams, 1992, chapter 4)[3]. However, where it is not possible to ask the prescriptive question a **predictive question** is usually asked in its place. This asks: for whom is a particular treatment most effective? In the case of adolescents with severe difficulties placed in residential settings it is usually not possible to ask the prescriptive question as suitable control groups or treatments are

[3]One variant of the prescriptive question of particular interest to purchasers of health services, is whether the clients using the service would have improved without any intervention. This question may often be addressed in the case of adolescents thought to require in-patient services, by establishing the duration of problems prior to referral and whether any other therapeutic interventions have been attempted. In our experience most adolescents referred have long-standing difficulties for which out-patient measures have not been effective.

not available. The reasons for this are discussed more fully in section 1.4. Consequently, the focus on outcome research in recent years has been on the predictive question, examining which of those adolescents admitted to residential treatment have the best outcomes[4].

Pfeiffer & Strzelecki (1990) in a comprehensive review of 34 studies used a meta-analysis procedure to derive a **weighted predictive value** for a range of predictor variables discussed in the research literature. From this procedure the relationship between variables and outcome was examined. Variables with a positive correlation with outcome were IQ, family functioning, continuing aftercare and specific treatment variables, for example, therapeutic alliance (Clarkin, Hurt & Crilly, 1987) or a specific treatment package (Kazdin, Esveldt-Dawson, French & Unis, 1987). Organicity, and certain diagnoses and symptom patterns were negatively correlated with outcome. Those with organic or psychotic disorders or whose symptoms were considered to be bizarre or anti-social had a poor outcome.

In essence, Pfeiffer & Strzelecki (1990) capture the spirit of the research in this field in identifying three major clusters of variables which relate to outcome. Firstly, factors within the individual, mainly diagnosis and in particular whether the disorder is considered to be a "process" or "reactive" to circumstance. Secondly, factors relating to the identified patient's family,

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[4]Aside from these two research questions there is also a strategic question. It is possible that adolescents with more severe problems and poorer prognoses may benefit less from residential treatment than those with less severe problems. Which is the most effective use of resources, making slight progress with adolescents with severe problems or substantial progress with adolescents experiencing time-limited problems is an important question but one that is beyond the scope of this review.

for example their involvement in and commitment to the therapeutic process (Davids, Ryan & Salvatore, 1968). Finally, variables relating to the treatment itself, for example, the presence of a specialized adolescent programme, the completion of the therapeutic contract and the continuation of therapy post-discharge. Factors across all three domains have been repeatedly identified, even in early studies, as relevant in predicting residential treatment outcome (Ainsworth, 1984; Gabel & Schindledecker, 1992; Garber & Polsky, 1970; Gossett, Baillies-Lewis, Lewis & Austin-Phillips, 1977; Gossett, Barnhart, Lewis & Phillips, 1983; Kivovitz, Forgotson, Goldstein & Gottlieb, 1974; Lewis, Otnow-Lewis, Shanok, Klatskin & Osborne, 1980; Neilsen, Harrington, Sack & Latham, 1985; Pyne, Morrison & Ainsworth, 1985; Turner, Dossetor & Bates, 1985). It is probable that there are significant interactions across the domains. For example, completion of the therapeutic contract is likely to be related to the commitment of the family to the therapeutic process.

Despite the general agreement across the literature upon those factors associated with a positive outcome there is also a recognition that the research from which the information is derived has several limitations. Based on a methodological analysis of 32 studies, Pfeiffer (1989) identified a number of serious methodological flaws in the available data. Essentially, these are in two categories, design faults and problems with measurement. The design faults identified were an absence of a control group; lack of blind assessment of the adolescents at admission, at discharge or follow-up; a non-standardised approach to data collection; non-specification of the follow-up period; absence of statistical techniques of sufficient power; and a

confounding of outcome with maturation. The main problems with measurement included impoverished information on how diagnostic decisions were made; reliance on the subjective information available in case records; sparse outcome data; use of non-standardised, unpublished questionnaires; limited information about pre-treatment variables such as number of previous treatment episodes; inadequate description of the treatment variables and the identification of active ingredients.

Following a description of the problems, Pfeiffer made eight recommendations to improve the methodology of future outcome research. These recommendations comprised both theoretical and design considerations (see Table 1.1 overleaf).

Pfeiffer's criticisms of the methodology of outcome research and his recommendations offer a useful framework for considering work published subsequent to his reviews. Both of the reviews by Pfeiffer upon which these conclusions were based considered papers published between 1975 and 1987. Since then six studies have been published. These studies will now be reviewed in the light of Pfeiffer's recommendations.

Theoretical Recommendations

1. Defining success or adjustment as multi-dimensional and multi-directional.
2. Identifying the critical dimensions of inpatient treatment and selecting outcome measures appropriately.
3. Emphasizing community adaptation and the post-discharge environment using indicators of social role performance, and functioning within the family, peer group and wider community.
4. Expanding the array of predictor and outcome variables.

Design Recommendations.

1. Delineating the experimental design with the possible use of quasi-experimental designs.
2. Selecting appropriate outcome measures which are reliable and valid.
3. Specifying the follow-up period.
4. Employing powerful statistical techniques in particular multi-variate models.

Table 1.1: Pfeiffer's (1989) Recommendations for the Improvement of Outcome Research.

1.3. Recent Research.

Of the six recent studies, four of which are from North America, three are similar in design to previous work and consist of retrospective case note searches. These will be briefly reviewed. The remaining three, of which one is North American, have met the methodological challenge of research in a residential setting. These studies are prospective designs and will be considered in more detail.

1.3.1. Retrospective Case Note Studies.

Ghuman, Jayaprakash, Saidel & Whitmarsh, (1989) conducted a retrospective review of 113 adolescents admitted to a short-term unit in the USA. Ego strength and involvement in therapy predicted "good" outcome as defined by the researchers on a review of the case notes. Nearly all of the difficulties outlined by Pfeiffer (1989), and described earlier in section 2, are inherent in this study. In particular, the study lacks a control group and as such any therapeutic effects are compounded with maturation. There was no blind assessment of the adolescent's condition either at admission or discharge and there was no information presented upon how diagnostic or outcome category decisions were made.

Allen & Pfeiffer (1991) examined the records of 186 adolescents from 11 different treatment centres with similar ideals and practices. Prediction of out-of-home placement, which was the outcome measure, from pre-admission criteria proved not to be straightforward. Factors associated with

discharge to a non-parental residence were as follows: unmarried parents at time of admission; legal responsibility and primary financial responsibility not with parents at time of admission; slightly younger adolescents; history of abuse; lower IQ.

This study suffered from all the problems of a case note search and in addition, although the outcome criterion was clear, it failed to meet the standards laid out in Pfeiffer's own recommendations (Table 1: Theoretical Recommendations 1 and 3). Return home is determined as much by social factors as by the mental health of the adolescent and therefore may bear little relation to the success or otherwise of the adolescent in therapy.

Gabel & Schindeldecker (1992) examined the outcome of two groups of adolescents admitted to the same psychiatric hospital. In this study, recommended placement by the hospital staff was also the outcome measure. Severe aggressive or destructive behaviour was associated with out-of-home placement in both groups. This was also a case note study, however, the Data Coding Form (DCF; Gabel, Swanson & Schindledecker, 1990a, b; Gabel & Schindledecker, 1990) an instrument of established reliability, was used to extract the information from the case files. The four predictor variables, suicidal ideation, severe aggressive or destructive behaviour, suspected child abuse or maltreatment and parental substance abuse, were all operationally defined and had been used in previous studies with children.

In summary, these three studies identify predictors of outcome which are similar to those found in previous studies. However, they also demonstrate the lack of methodological rigour in studies of this type and their findings are open to criticism as a result. As described in section 1.2, the number of studies conducted in this manner is extensive and it is questionable whether any further benefit can be derived from conducting research in this way. A more productive approach would be to examine these predictors and their relationships to one another in a more systematic way.

1.3.2. Prospective Studies.

The three studies reviewed in this section have accepted to a degree the methodological challenges of research investigation in this field. The first study follows a more traditional approach, investigating the predictive power of a wide range of variables across time and relates them to overall symptomatology. The other two take a different approach, one examining the dynamics of change in a psychological construct, the other using identified problems as indicators of outcome.

Kowitt, Sandell-Sachs, Greenberg-Lowe, Schuller, Rubel & Ellis (1989), in an adolescent treatment centre in Pennsylvania USA, assessed 58 adolescent in-patients at admission and evaluated their outcome at discharge and at 18 months post-discharge, in relation to 6 predictor variables; level of precipitating stress; primary process thinking on the Rorschach; "cognitive inefficiency" measured by the degree of scatter on the WISC-R (scatter was defined as present when the sub-test scores deviated by three or more points

from the individual's mean score or when there was a discrepancy of 11 or more points between the verbal and performance scores); severity of psychopathology; maladaptive behaviour on the unit; process vs reactive illness. The outcome measure was the Global Assessment Scale (GAS; Endicott, Spitzer, Fleiss & Cohen, 1976). The issue of reliability for assessment of all predictors was addressed and the scope of the predictors was in keeping with the breadth recommended by Pfeiffer. A brief description of the treatment was provided. In summary, this study complied with Pfeiffer's Theoretical Recommendations 2 and 4 and Design Recommendations 1, 2 and 3 (Table 1.1).

The major predictor of outcome at discharge and follow-up was cognitive inefficiency, in that individuals with severe problems with cognitive efficiency had a poorer outcome. Severity of psychopathology, was also a significant predictor of outcome at discharge and at follow-up. More severe psychopathology at admission was associated with a poorer outcome.

This study represents an improvement on previous studies as it examines the relationship between hypothesised prognostic indicators and functioning across three time points which are clearly defined. The variables investigated were employed because of a putative theoretical relationship with outcome thus complying with Pfeiffer's Theoretical Recommendation 2.

In a UK study, Roberts, Zarchochemny & Cohen (1992) focused more specifically on changes in locus of control during the stay of adolescents at

an in-patient facility. Their rationale for using this measure was, firstly, the links between locus of control and personality characteristics and behaviour in children and adults. Secondly, the measure related to the theoretical orientation of the unit, in that therapy focussed on the adolescents' responsibility for and control over their behaviour and its consequences. This satisfies Pfeiffer's second Theoretical Recommendation (Table 1.1).

Fifty-six adolescents completed Connell's Multidimensional Measure of Children's Perception of Control (MMCPC; Connell, 1985), an instrument of established reliability and validity. The study investigated different types of control (internal, powerful others, unknown) by domain of behaviour (general, physical, social, cognitive) and outcome (success or failure). The questionaire was completed just before admission and on the day of discharge. There were changes across domain and outcome for all three sources of control, with significant changes away from "powerful others" and "unknown" sources of control. A trend towards internality was only evident in significant changes in perceptions in the "general" domain and for a "success" outcome.

This study represents an advance in the outcome research of residential facilities. It examines the changes in a well-researched psychological construct which has demonstrated connections with mental health and which had theoretical links with the therapeutic aims of the unit. However, locus of control is a complex measure which is related to a theory about attributional style.[5] The study does not address the complexities of the

[5]This theory emphasises, not only the importance of the internal / external dimension in attributing causes to events, but also whether causes for given events are believed to apply

theory nor does it incorporate all the methodological improvements suggested by Pfeiffer. There was no follow-up period and no attempt to evaluate the relationship between locus of control and the presenting problems of the adolescents.

Wells and Faragher (1993) in another UK study adopted a more problem-centred approach in assessing outcome, in keeping with current trends in health care, evidenced by the renaming of problems as Performance Indicators (PI). The adolescent, their family and the referrer were asked to generate a problem list and to rate the severity of the problems on the list. The problems were rated before admission, and at 1 month, 1, 2 years post-discharge. Three diagnostic categories (conduct disorder, emotional disorder and mixed conduct and emotional disorder) were used but no information was provided on how these were established. The therapy focussed on problem-solving and would therefore be hypothesised to affect the listed problems (Theoretical Recommendation 2).

Results indicated that at two year follow-up between 69% and 79% of cases improved and that the overall behaviour observed at one month was maintained at one and two year follow-up. There were similar patterns of improvement across target behaviours across diagnostic groups. Not surprisingly, individuals failing to complete treatment had a poorer outcome. This study complies with all of Pfeiffer's design recommendations with the

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to events across all domains or only within a given domain (global / specific) or whether the attributed cause is considered to be an ever-present feature of the environment or something that changes over time (stable / unstable). The effect of attributional style on mental state is hypothesised to depend upon whether attributions are being made about positive or negative events (Abramson, Seligman and Teasdale, 1978).

exception of number 2 (selecting outcome measures which are reliable and valid). Presumably the list of problems has face validity as it is generated by the major parties concerned, however, the measure is not of established reliability.

1.3.3. Conclusions.

The recent studies contribute to what is now a large body of literature addressing the question of outcome and predictors of outcome within residential settings for adolescents. Much of this work suffers from serious methodological problems, however, and it is pertinent to enquire what is known reliably from this work. Adolescents with emotional and behaviour problems do show some gains during treatment in residential settings and some of these gains are maintained over a follow-up period. It is also apparent that some adolescents benefit more during this type of treatment than others. The factors which affect how much benefit a given adolescent will derive from this form of treatment fall broadly into three categories; issues relating to the adolescent, to their family and to the treatment itself. Reliable indicators of good outcome within the adolescent themselves are a less severe psychopathology, disorders with a reactive onset, with neuroses having the best outcome and psychoses the poorest. (It is of note that in most of the research in this area more refined and rigorous diagnostic frameworks have not been utilised.) Individuals who exhibit severe aggressive or destructive behaviour also perform less well. Involvement of the family in the therapeutic process seems to predict outcome and may be a measure of the families commitment to their adolescent member. A

programme designed specifically for adolescents predicts good outcome as does completing the set goals of therapy and continuing therapy post-discharge. Other predictors have been identified but these have not always been consistently measured in every study (Ainsworth, 1984; Gabel & Schindledecker, 1992; Garber & Polsky, 1970; Gossett *et al,* 1977; 1983; Kivovitz *et al*, 1974; Lewis *et al*, 1980; Neilsen *et al*, 1985; Pyne *et al*, 1985; Turner *et al*, 1985).

The outcome research produced since Pfeiffer's methodology review has two strands. The first is a continuation of previous methodological techniques, the retrospective case note study, which has serious methodological problems and whose results are, therefore, difficult to interpret. There have been, however, three other studies which overcome the methodological difficulties which Pfeiffer refers to as design problems and have attempted to make links between the treatment environment and outcome (Theoretical Recommendation 2). In this respect they reflect part of a larger trend in the direction of outcome research in residential settings identified by Zimmerman (1990). However, Pfeiffer's Theoretical Recommendations, in the main, are not addressed by these studies, with the possible exception of a closer examination of the therapeutic environment and its relationship to outcome measures. The reason for this is the array of methodological constraints involved in research in residential settings which will now be considered further.

1.4. Methodological Constraints.

Research into the effectiveness of psychological treatments faces many methodological difficulties. These have been conceptualised as threats to statistical conclusion validity, internal validity, external validity and construct validity (Cook & Campbell, 1979). These difficulties as applied to outcome research in psychotherapy have been extensively discussed by Shapiro (1989). However, it is worth reviewing briefly the particular methodological problems of conducting a rigorous research design within a residential setting.[6]

The first major difficulty is in selecting an appropriate control group. The research question under consideration will determine the nature of the required control group. For example, if the question is whether residential treatment in itself is therapeutic, the appropriate comparison would be between admissions to an in-patient facility and individuals entering out-patient treatment. This comparison is problematic as often admission to an in-patient unit is a result of a family crisis leading to the breakdown of community placement. Under such circumstances random allocation to residential treatment presents serious ethical dilemmas. If the question is the efficacy of a particular treatment milieu then a comparison between two residential facilities would be the appropriate design. This presents practical difficulties as treatment facilities are often in different geographical areas making random allocation impossible. One further possibility is for a

[6]In the past one of the difficulties has centred upon the belief system of the in-patient facility itself. In some units with a more psychodynamic orientation, the type of research design discussed here is not felt to capture the richnesss of the therapeutic experience or indeed the relevant dimensions of change, as often in published research the emphasis is on symptomatic remission rather than insight.

residential unit to evaluate the effectiveness of its own particular clinical setting by endeavouring to find an appropriate matched control group. None of the available controls seem to be satisfactory. They are either settings in which the individuals lack the problems of or have different social circumstances from the target population, for example residential schools or Local Authority accommmodation, or where the environment is not equivalent to a treatment regime, for example in a day school or Local Authority residential accomodation. Even if a suitable control group could be found the random allocation of subjects to conditions would be violated. The difficulty in finding an appropriate control group and the impossibility of random assignment to treatments present a threat to the internal validity of the study, that is the validity with which statements can be made about whether there is a causal relationship between symptom change and residential treatment.

Secondly, to preserve construct validity, control of non-specific effects, such as the belief of the investigators in the effectiveness of the therapeutic intervention, is required. This is usually achieved by blind assessment of the participants on all identified variables throughout the course of the study. Ideally, double blind assessment should be aimed for in which neither the adolescent and their family nor the assessor are aware of which adolescent is receiving what is hypothesised to be the "active" treatment. Blind assessment of the adolescent by an observer should be an attainable objective; however, double blind assessment is not practicable in psychotherapy outcome trials.

Accurate specification of the treatment condition and monitoring of its delivery according to the protocols is required to protect statistical conclusion validity. This presents a number of difficulties in a residential setting. Firstly, the number and diversity of relationships between large numbers of staff and residents, all of which may have a therapeutic effect presents problems of definition and measurement. Secondly, residential treatment has many components, group therapy, individual work, community meetings, the milieu. All of these elements would need to be specified and described accurately, therapeutic ingredients identified and ways of measuring adherence to the treatment protocols identified. The complexity of the milieu experience would make it difficult to identify two dissimilar treatments for comparison of different active ingredients. Even if this were possible the similarities between the treatments may far outweigh their differences thus requiring very large subject numbers to make the design powerful enough to detect an effect.

In addition to these design problems there are also significant practical difficulties in the implementation of research in this setting. The adolescents themselves often present with impulsive and extreme behaviours which present a challenge to management and create an element of unpredictability in the atmosphere of the unit. Consequently, there is a significant amount of time and energy involved in maintaining the therapeutic regime. Inevitably, research, which requires a highly structured and predictable environment, is often a casualty in the process of coping with unpredictability.

As discussed in Section 1.1, Pfeiffer (1989) identified the methodological shortcomings in residential settings and suggested two types of solution. Firstly, a design solution which comprised the use of reliable and valid measures, clear specification of the design and use of statistical techniques appropriate to the complexity of the available data. This approach is essential to good outcome research and has, to a degree, been addressed in some recent studies. Secondly, a theoretical solution was suggested which is only partially acceptable. This solution involved using a broader range of measures of predictors and outcome. However, such an approach will not generate a meaningful understanding of the parameters of change within a residential setting as the variables are too numerous and inter-related in, as yet, unidentified ways.

Pfeiffer seems to suggest through his theoretical solutions, that more effort should be invested in attempting to accomplish a methodologically rigorous double-blind control trial with a greater use of a broader range of measures. From the constraints identified above, this is an impossible endeavour and to pursue this as a goal involves too many compromises and results in poor quality data. One possible way forward is through the exploration of methodological alternatives which will satisfy the criteria for effective and useful outcome research. Essentially, the alternative relies on a **theoretical approach** which makes specific and testable predictions about the dynamics of change in adolescents in a residential setting. This approach accepts that in some fields experimental designs drawn from the evaluation of out-patient treatments may be too difficult to implement but yet still has a

requirement for methodological rigour. Examples of this approach will be provided in the next section.

1.5. Empirical Alternatives.

The alternative to double-blind controlled trials are theoretically motivated quasi-experimental designs. Four potential strategies will now be outlined.

1.5.1. Designs to examine the components of therapy.

This approach requires that a specific treatment approach is outlined which makes specific predictions about outcome. These predictions can be tested in a series of single cases. Analogue studies may provide the opportunity to examine some of the theoretical issues raised. A similar solution to the problems of outcome research in residential settings is outlined by Wilson, Prentice-Dunn & Wurtele (1983).

For example, Dialectical Behaviour Therapy (DBT) has been postulated as an effective approach for the treatment of individuals suffering from borderline personality disorder (Linehan, 1993). DBT consists of individual psychotherapy aimed at reducing clearly specified target behaviours, for example, parasuicidal acts, and a group based skills training programme which aims to widen the client's repertoire of behaviours for coping with emotional and interpersonal problems. Linehan (1993) postulates that individuals with a diagnosis of borderline personality disorder have difficulties in affect regulation resulting from deficits in distress tolerance.

Consequently, these individuals engage in maladaptive behaviours, such as self-mutilation, which have an affect-regulating function. DBT suggests a number of interventions as alternatives to self-mutilation to regulate affect. These could be investigated in a residential setting, particularly given the high rates of self-mutilatory behaviour in this treatment group (Ainsworth, 1984; Garber & Polsky, 1970).

One technique suggested by Linehan to assist in the control of self-mutilatory behaviour is to ask the client, when they feel the need to self-mutilate, to hold an ice-cube in their hand until it melts. An investigation into the effectiveness of this strategy to control self-mutilation would involve making specific and testable predictions about the circumstances in which such a technique would be useful. For example, following a behavioural analysis of the circumstances under which self-harm occurs, a prediction would be made about the impact of the intervention on the target behaviour. In this case the prediction might be that holding ice-cubes would only be effective in reducing self-harming behaviours, such as cutting, which have similar physiological effects as holding ice-cubes[7]. The experimental design would require that cutting and other forms of self-harm be measured, initially during a baseline period and then during the implementation of the intervention. If a change was observed in the frequency and / or intensity of the cutting behaviour whilst the frequency and / or the intensity of the other forms of self-harm remained unchanged this would suggest that a relationship may exist between the intervention

[7]In one case, treated by the first author, a young woman described cutting herself as producing initially a sense of numbness which was followed by pain. This is not an unusual description of the effects of cutting and a similar sequence of sensations occurs when ice-cubes are held for long periods.

and the alteration in the cutting behaviour. If all forms of self-harm were equally affected then there are two possibilities. Firstly, the intervention may be affecting all types of self-harming behaviour and, therefore, the effect of the ice-cubes as an intervention is unlikely to be mediated by the physiological sensations it produces. It may be, for example, that solely by instructing the client not to self-harm when under stress and by providing an alternative response, is sufficient to change the pattern of behaviour. Secondly, some other factor in the environment, other than the intervention, is affecting all the measured behaviours. These designs make the unproven assumption that only the intervention has changed during the course of the experiment. Consequently, if all the behaviours measured change, during the course of the intervention, it is not possible to be certain of the reasons for this. However, if differential effects are observed across the behaviours measured, it is reasonable to assume that this is related in some way to the intervention.

The most powerful designs of this type are withdrawal designs (Barlow & Hersen, 1984). In these designs, following an initial baseline phase, the treatment intervention is introduced for a period and then withdrawn and the impact on the target behaviour or behaviours is observed. If the intervention has a significant impact on the target behaviour which is then not observed following removal of the intervention i.e. the target behaviour returns to baseline, this is a more powerful demonstration of the effectiveness of the intervention. However, the immediate reversal of treatment effects mitigates against spontaneous generalisation of effects across time and situation. Where this is a factor, the clinical importance of ensuring maintenance of

treament effects becomes paramount. This technique of examining specific behaviour in a single case by utilising multiple base lines has been used successfully in the field of Learning Difficulties to elucidate the functions of challenging behaviours (Jones & Eayrs, 1993).

1.5.2. Use of problem-oriented case records.

This technique was employed by Wells and Faragher (1993). The advantages of this approach include its face validity and ease of collection. However, its reliability, validity and the relationships between the different views of raters and other measures of outcome are areas for further exploration. This work could be usefully expanded by a consideration of *therapeutic impacts* as described in the Assimilation Model (Stiles, Elliott, Llewelyn, Firth-Cozens, Margison, Shapiro & Hardy, 1990).

The assimilation model focuses on those moments in therapy when problem definition shifts or when the individual seems to have mastered a difficulty or resolved a trauma. According to the Assimilation Model, clients in successful psychotherapy follow a regular sequence in processing their painful or problematic experiences as these experiences are gradually assimilated into schemata developed in the therapeutic interaction. The model predicts that successful therapeutic work yields a predictable sequence of attitudes towards a problematic experience. The painful experiences are initially warded off, followed by toleration of these experiences but thinking of them remains painful. Gradually the events are experienced as less painful, becoming problematic and puzzling before they

are finally understood and mastered. Some sessions of psychotherapy are seen to produce sudden and dramatic increases in assimilation. These assimilations give rise to strong affective reactions which may be either positive or negative and to distinctive therapeutic impacts which differ depending upon the segment of the assimilation continuum involved. This theoretical model has developed to encompass taxonomies of the types of impacts experienced by clients and ways of measuring these impacts (Stiles, 1988; Stiles *et al*, 1990). Types of impact and their frequency have been shown to differ across modes of therapy and in some cases to have clinically significant effects (Stiles, 1988). As yet direct relationships between sessional impacts and outcome have yet to be established, although, the current evidence does not allow this possibility to be ruled out (Llewelyn, Elliott & Shapiro, 1988).

This theoretical model and its empirical implementation have potential in the investigation of complex therapeutic packages of treatment. The measurement of therapeutic impact may enable the various components of a complex regime, such as a therapeutic community, to be evaluated for their relative impact and possibly for their contribution to outcome. At present, these measures have only been applied to adults undergoing out-patient psychotherapy and may need some adaptation for use with adolescents in an in-patient setting and for the evaluation of therapeutic impacts in a group setting. However, this model could provide useful additional information in studies focusing on the resolution of identified problems. There are other models of progress in individual psychotherapy which could also be

explored for their relevance to residential treatments (Howard, Orlinsky & Leuger, 1994).

1.5.3. Prediction of outcome across time.

An important aspect of all treatment is its effectiveness in the long-term. With regard to residential treatment, of particular interest is whether variables which predict change during treatment also predict change in the long-term, given the problems of generalising treatment gains from one setting to another. This approach would be most interesting with established psychological constructs such as locus of control or attributional style, and self-esteem. Exploratory studies of a quasi-experimental nature may give an indication of the relationships between psychological variables across time. The study by Kowitt *et al* (1989) made a significant contribution to this area noting different relationships between predictors and outcome across time; for example, both "cognitive inefficiency" (as defined by a significant discrepancy between performance and verbal aspects of the WISC) and severity of psychopathology predicted outcome at discharge and follow-up; whereas precipitating stress was only significantly correlated with outcome at follow-up.

1.5.4. Examining the reasons for the effectiveness of established predictors of outcome.

Some of the recent research has made an attempt to examine established psychological indicators. For example, the study by Roberts *et al* (1992),

reviewed in section 1.3.2, established that locus of control changed during admission to a residential unit. Other investigators have demonstrated a negative correlation between symptoms and locus of control (Friedmann, 1985). One possible research strategy is to attempt to understand the relationship between symptomatology and locus of control. Such an approach may also suggest opportunities for therapeutic intervention. One possibility is that attributional style may mediate the relationship between dysfunctional attitudes and mood.

This type of approach has been used to good effect in studies of Cognitive Behaviour Therapy and Dysfunctional Attitudes. Both cognitive therapy and anti-depressants improve mood and lower dysfunctional attitudes in individuals suffering from depression. However, short-term cognitive therapy has a lower relapse rate than short-term anti-depressant drug treatment (see Williams (1992) for review). It has been hypothesised that the effectiveness of cognitive-behaviour therapy in preventing relapse may be because the techniques employed reduce the likelihood of the activation of dysfunctional attitudes when in depressed mood (Williams, 1992). It is possible, given that some of the techniques of cognitive therapy involve examining and changing attributions about both positive and negative events, that the findings of change in locus of control in adolescents may relate to changes in dysfunctional attitudes. The experimental investigations employed to understand why cognitive behaviour therapy is effective in relapse prevention could be utilised to examine the relationship between locus of control and symptom improvement in adolescents.

1.6. Summary.

Until recently, outcome research into the effectiveness of adolescent residential treatment focussed primarily on the predictors of outcome in large group studies. This body of research has highlighted potential areas for investigation but as a result of serious methodological problems the findings must be interpreted cautiously. A review by Pfeiffer (1989) described in detail the problems with the available data and suggested theoretical and design modifications to improve the quality of future work. The design solutions Pfeiffer suggested have been incorporated in three studies since the review was published. The theoretical suggestions made by Pfeiffer have not been incorporated into current research and it is unlikely that they will be given the constraints upon research of this kind. The research endeavour would be served more fruitfully by a more theoretical approach, drawing from an established knowledge base within psychology, into the processes of change for adolescents in residential services.

Chapter 2

A cross-sectional study of a regional residential adolescent service.

Abstract

Studies of the efficacy of residential treatment of disturbed adolescents require a detailed description of the setting, the characteristics of the client group and the crucial variables that are hypothesised to mediate improvement. This chapter describes the adolescent unit and the psychopathology of the adolescents admitted, from the perspective of the adolescent, their family and the clinical team utilising a range of measures. Variables hypothesised to mediate change will be considered in chapter 3. Adolescents and parents had widely different perspectives on clinical problems and males and females differed with respect to both the type and severity of presenting problems. On the three key parameters of behaviour, mood and family functioning, the most significant relationship was between mood and behaviour problems.

2.1. Introduction.

This thesis aims to explore the psychological processes of change in a residential setting. Subsequent chapters describe the outcome of the adolescents described here (chapter 4), factors which predicted outcome and the role of cognitive factors in relation to mood disturbance and therapeutic outcome (chapters 3 and 5). This chapter describes the sample upon which the remaining analyses are based and as such it provides the context for those analyses; however, it also provides a snap-shot of the type of problems present in an adolescent in-patient sample.

In recent years there have been a number of such studies, some of which, like this one, have provided the basis for outcome studies whilst others have sought to justify the need for such services. Chapter 1 gives a general overview of these studies. This chapter will discuss in more detail those studies which are pertinent to the setting examined here. On the basis of this the measures of interest for this study will be derived. Of particular interest will be the evaluation of the problems of the adolescent from different perspectives.

Ainsworth (1984) described the first 100 admissions to an adolescent unit which "adopted an eclectic approach to treatment methods". The adolescents in this sample were between the ages of 13 and 17, with 14-15 year olds predominating; females being more common in the older age groups. Adolescents were fairly evenly distributed between four diagnostic categories; neurotic, psychotic, conduct disordered and mixed conduct and

emotional disorder, with a few adolescents having organic problems. In addition, self-harm was present in 46% of the sample of which over half were female. Within this group overdose was the most common form of self-harm (30 of the sample), 21 had cut or scratched themselves and 9 abused alcohol or solvents. The average length of stay of the group was 18 1/2 weeks with a relatively high rate of premature discharge (41%). The outcome portion of the study was based on clinician's outcomes, with the neurotic group performing best, followed by the psychotic group. The conduct disordered and mixed groups did not do so well. Outcome (divided into four categories, unchanged, slight improvement, some improvement and much improvement) was rated by the consultant in charge who made an overall assessment of progress rather than using independently validated rating scales. This is important since there is evidence that clinicians, parents and adolescents themselves have differing views on the nature and severity of their problems. This will be discussed in more detail later.

Turner, Dossetor & Bates (1986) reported on the adolescent unit associated with the Maudsley hospital. Here the therapeutic milieu seems to be emphasised with a particular emphasis placed on group processes. A wide range of therapeutic approaches is "integrated within a bio-psycho-social model...Steinberg (1983)". This study also examined the case notes of the last 100 adolescents admitted to the unit. There was an equal gender distribution, the age range was 11 to 17 with a mean of 14.58. In contrast to the Ainsworth (1984) study there was no difference in age distribution across the sexes. There were, however, gender differences in diagnoses. Males predominated in the schizophrenic and manic-depression group and

there were more females in the neurotic category. Admission (length of stay ranged from 1 day to 42 months), was longer for those suffering from schizophrenia or manic depression. There was a bias towards males in the conduct / personality disorders group and towards females in the mixed conduct and emotion disorders group. Outcome was assessed in terms of placement at discharge with placement home considered as a good outcome. On this criterion 69% of all patients were discharged home. Use of this particular outcome criterion is problematic as placement home does not have a direct relationship with symptomatic resolution and may be dependent upon other pre-existing factors some of which may be related to the pathology, for example family function, or may be independent, for example availability of alternative social services provision.

Jaffa and Dezsery (1989) reported on the reasons for admission to Hill End Adolescent unit, a unit for under 16 year olds. The unit is a short stay, rapid response unit with no waiting list. The criterion for admission is that the person with legal parental authority states that they cannot cope with the adolescent and that they specify the behaviour that they cannot cope with. The focus of the work is to achieve the minimum change needed to be able to discharge the adolescent back home to the person who retains parental authority for them. The study was a retrospective case note study.

The gender distribution was again fairly equal in this sample (53% male; 47% female). A higher percentage of admissions were in the 13-15 age range. With regard to referral problem, usually more than one intolerable problem per case was specified, with a mean of 2.5, and in 21 cases four or

more problems were specified. The five most frequently reported problems were; physical violence; verbal abuse, disobedience, lying; staying out late, running away; substance abuse; and self-harm, either threatened or attempted.

All of these studies are limited and the methodology is problematic as in all cases retrospective case note searches were employed (Swales and Kiehn, 1995: chapter 1). Wrate, Rotherey, McCabe, Aspin and Bryce (1994) describe three main problems with this type of study. First, all of the published accounts are single-unit descriptions, each unit having its own idiosyncratic treatment philosophy. Secondly, there is a reliance on idiosyncratic or outmoded diagnostic classifications or dissimilar adolescents are combined because of low case prevalence. Thirdly, there are no attempts to relate outcome to specific aspects of treatment. The work of Wrate *et al* (1994) aims to overcome these problems by combining results from a number of units. This study was prospective, and examined consecutive admissions to four adolescent units over a three year period.

Fifty-seven percent of the sample were female and the peak age of admission was for adolescents in their 15th / 16th year (62% of the total; 320 adolescents). Seven ICD-9 diagnoses accounted for 90% of admissions; conduct disorder, 21%; neurotic disorder, adjustment disorder, emotional disorder of childhood and adolescence, all 14% respectively; anorexia nervosa, 11%; schizophrenia, 9%; and affective disorder, 7%. There was a bimodal presentation in terms of symptom duration, with 28% experiencing disturbance for less than 6 months and 46% experiencing problems for over

2 years. The five most common presenting problems were as follows; psychosis, 14%; parasuicide, 13%; eating problems, 13%, school refusal, 11%; and depressive symptoms 11%. Psychological adversity was relatively common within the sample and multiple reasons for admission were common (at least three in 68% of admissions). Length of stay varied with anorexics staying longest. Precipitous discharge was most commonly associated with conduct disorder.

The findings from this study were based on a clinical audit tool developed for the study and of unknown reliability. Therefore the results need to be interpreted with caution. The demographic distribution of adolescents in this study, in terms of gender, diagnostic distribution and associated psychological adversity, are similar to previous single unit descriptions.

The outcome findings from this study were reported by Rothery, Wrate, McCabe, Aspin & Bryce (1995). A range of treatment goals were available to be specified by the multi-disciplinary team. Four groups of possible treatment goals were available; the remission of symptoms; improvement in significant relationships; facilitating the achievement of age-appropriate maturational tasks; and improvements in intrapsychic functioning. Outcome at discharge was specified in terms of each treatment goal on a 6-point scale and was also rated by the multi-disciplinary team. There was no reliability information available on the measure used.

A "broadly favourable treatment outcome at discharge was recorded for most patients irrespective of diagnosis" (Rothery *et al*, 1995). Outcome across

diagnostic groups is reported only in terms of percentages which makes interpretation difficult. It appears that outcome across diagnostic groups varies according to treatment goal; for example, marked improvement in vegetative symptoms was apparent in all groups, whereas in behavioural symptoms, higher percentages of those with diagnoses of affective disorders, anorexia nervosa or neurotic disorders than those with schizophrenia showed marked improvement. On the basis of these results it is difficult to draw general conclusions about the outcome of different diagnostic groups, or to judge whether the findings add to what is known on the basis of single unit descriptions. However, this study emphasises the importance of taking a broad view of outcome.

The present study has something in common with all of the above studies; it is a single unit description in terms of gender, age, ICD-10 diagnosis, length of stay etc. However, it seeks to enrich this picture, not only in terms of an understanding of the psychopathology of the adolescents, but also in terms of different perspectives on the same problems. It is a prospective study which utilises standardised rating scales to measure the nature and extent of presenting problems from the perspective of both adolescents and parents.

In common with the adolescents described in previous studies (Ainsworth, 1984; Turner *et al*, 1986; Jaffa and Dezsery, 1989; Wrate *et al,* 1994) the adolescents described here present with multiple problems. However unlike previous studies, this study seeks to describe these from multiple perspectives encompassing the views of the adolescents, their families and the therapeutic team, with that of the adolescent predominating.

A number of authors have reported on the discrepancy between the reports of children and their parents on the nature of clinical problems (Achenbach, McConaughy & Howell, 1987). Rutter, Tizard & Whitmore (1970) reported on the assessment of psychiatric disorder in a community sample of ten and eleven year old children. In a sample of 118 children identified by psychiatrists as suffering from an emotional or behavioural difficulty, less than half of the parents of these children stated definitely that they thought their child had a disorder of behaviour or emotions which was beyond that experienced by most children of a similar age. Parents were no more likely to state that their child was experiencing problems when the psychiatric rating was of a severe problem than when the problem was rated slight. Parental and teacher ratings also did not correlate highly. Subsequent studies of out-patient and community samples indicate that children report more depressive symptoms than their parents report of them (Angold, Weissman, John *et al*, 1987), whilst conduct disorder symptoms appear to be more commonly reported by parents than by their children (Edelbrook, Costello, Dulcan, 1986). In general there is only low to moderate levels of parent-child agreement in these studies. Verhulst & van der Ende (1992) reported that adolescents disclosed more problems than their parents did about them. These discrepancies were larger for externalising problems than for internalising, for females than males and increased with age. There is an indication however that this may not be the case in in-patient samples. Kazdin, Esveldt-Dawson, Unis & Rancurello (1983) indicated that parents reported more problems than did their children about themselves. As the perspectives of both adolescents and parents are of relevance in the

assessment and treatment of psychopathology the views of both are considered in this study.

As a consequence of the complexity of the problems presented, the study examines the inter-relationships between three key concepts; *behaviour*, *mood* and *family functioning*. These three concepts are often linked in the formulation of clinical problems and the theoretical way in which they are linked will vary according to individual practitioners. Family therapists would hypothesise that family functioning would be the primary determinant of both mood and behaviour in the adolescent since dysfunction is conceived of as a systems problem. Others, who perhaps focus more primarily on psychopathology, may consider that the disruption in functioning in the domains of mood and behaviour are key in disrupting family functioning. This latter view is perhaps not particularly predominant in adolescent teams who tend to be more family focused. Addressing these problems is complex as single measures of mood, behaviour and family functioning are not available. Attempts were made therefore to overcome this through the compilation of compound indices of problems and family function. The issue of causality is technically and philosophically difficult to solve, but the present study seeks to explore the relationships between these three concepts within this sample of adolescents.

This study also examines in some detail the nature of mood disturbance in adolescence. Repeated investigations demonstrate that females are more likely to report depressive symptoms than males (Allgood-Merton, Lewinsohn & Hops, 1990; Peterson, Sarigiani & Kennedy, 1991; Nolen-

Hoeksema, 1994). This study seeks to replicate these findings in a sample of adolescents referred for tertiary care, but also expands the investigation by examining a wider range of mood variables than have been previously combined in a single study. There is evidence that in non-clinical samples depression is experienced as a mixture of sadness and anger and that depressed affect is intimately associated with global self-worth (Renouf & Harter, 1993). This study addresses some of these issues in a clinical sample by using a comprehensive battery of standardised mood measures. A further investigation of the cognitive style which underpins this mood disturbance is reported later (chapter 3).

2.1.1. Description of the adolescent unit.

The adolescent unit involved in this study serves the adolescent population of North Wales. The unit offers a day-patient and residential service to adolescents of secondary school age (11 to 18 years). The unit is a tertiary level service and is an integral part of the local Child & Family Service. Referral is primarily from out-patient child and family teams and social services, although other professionals also refer (GPs, educational psychologists, teachers).

The treatment offered at the unit is based along therapeutic community lines in that the milieu is viewed as an opportunity to tackle problems as they arise in a living and learning situation. The theoretical basis of the milieu is based on the ideas of Donald Winnicott (Winnicott, 1971) and its application within the unit is described elsewhere (Kiehn & Swales, 1995). In addition to the

milieu each adolescent has an individualised package of care which employs different forms of treatment to address identified problems specified between the adolescent and their named nurse. A wide range of therapies are on offer; individual counselling, small group psychotherapy, family therapy (based on the McMaster model of family functioning; Epstein, Bishop & Levin, 1978), anxiety management, social skills and for adolescents with a history of chronic self-harm, dialectical behaviour therapy (Linehan, 1993 a and b; Kiehn & Swales, 1995). In addition to this, all adolescents attend the on-site unit school where they follow individual educational packages linked to the work they are pursuing in their mainstream schools. Attention within the school is also focused on remediating any other problems present in the school setting.

On admission all adolescents contract to stay for two weeks in the first instance. This period is termed the *familiarisation period.* During this period the aim is to engage the adolescent in a collaborative working relationship and to allow both the adolescent and the team to make an assessment of the likelihood that the treatment offered by the staff at the unit will be beneficial. At the end of this time there is a review meeting to discuss whether both parties feel that a further stay for assessment and treatment would be beneficial. If so, then adolescents are admitted for a further month during which additional assessments are carried out. During this time the goals of therapy will be defined (these goals form the basis for the team outcome measures reported in chapter 5), allocation to therapeutic groups is made and treatment begins.

At the end of the assessment block the team meet to review all information collected on the adolescent and his or her family and produce a formulation of the problem and an outline treatment plan. A review is then held to feedback these findings to the adolescent and his or her family and a decision is taken as to whether a further stay is required for treatment. If so, treatment is delivered in 6 week blocks which are reviewed at the end and further blocks negotiated as necessary.

The aims of the admission are to resolve identified problems; to resolve mood disturbance; to improve family relationships; and to improve self-esteem. Progress in some of these areas will be the focus of chapter 4, however, it was in the context of these hypotheses that the measures for the study were chosen.

2.2. Method.

2.2.1. Participants.

All admissions to the adolescent unit between April 1994 and August 1995 were eligible to take part in the study. During this period 55 adolescents were admitted to the service. Of this group the data on 46 of these adolescents are reported. Of the nine for whom data is not available; three, all male, had severe conduct problems and were uncontainable in the unit as they were unable to respect the rules regarding dangerous behaviour and remained in the unit for less than a week; three, all female, did not wish to stay after the familiarisation period and one further female proved difficult to engage in treatment. There were also two males who did not complete the assessment forms, both had very limited ability, one was a school refuser and one had severe conduct and drug-related problems. The 46 adolescents included in these analyses are those who remained in the unit to complete their assessment period of 6 weeks; this sample includes 32 adolescents who received treatment as residents, 10 who received treatment as day patients and 4 who received a substantial portion of treatment in both modes. All four of these adolescents had conduct disorder and proved too difficult to manage on a residential basis so were transferred to day-patient status.

2.2.3. Measures.

Problem Lists: Prior to admission, adolescents and their parents were asked to complete a form stating the five most significant problems that the adolescent was experiencing and to give an indication on a 5 point anchored

Likert scale of the severity of the problem. These forms are located in appendix 1.

Youth Self-Report Scale (YSR: Achenbach & Edelbrock, 1987[1]). This is a 112 item questionnaire which asks the adolescent to rate the frequency of a range of behaviours over the last six months. It produces scores on a number of dimensions which differ by gender; for males the dimensions are depressed, unpopular, somatic complaints, self-destructive/identity problems, thought disorder, delinquent, and aggressive; for females the dimensions are somatic complaints, depressed, unpopular, thought disorder, aggressive, and delinquent. For both males and females a scale of internalising and externalising problems is derived which identifies respectively those problems which are perceived to be experienced only by the adolescent e.g. feels guilty, and those which have some outward manifestation within the environment e.g. disobeys parents. Some items load on both scales e.g. trouble concentrating.

This scale has good psychometric properties. The one week test re-test reliabilities are 0.83 (internalising problems) and 0.87 (externalising problems). It also has good content and criterion validity.

Child Behaviour Checklist (CBCL: Achenbach & Edelbrock, 1983). This is a parallel form of the YSR questionnaire completed by parents which again

[1] This version was modified in 1991, however, this was the version in use at the time of the study within the unit and had been used in other studies. It was therefore decided to retain this version rather than utilise the newer version.

has slightly different sub-scales depending on the gender of the adolescent. For females, anxious-obsessive, somatic complaints, schizoid, depressed withdrawn, immature hyperactive, delinquent, aggressive, and cruel; for males, somatic complaints, schizoid, uncommunicative, immature, obsessive-compulsive, hostile withdrawal, delinquent, aggressive and hyperactive. Internalising and externalising scores are also derived.

This scale also has good psychometric properties. One week test-re-test reliabilities are 0.82 (internalising) and 0.91 (externalising). It also has good content and criterion related validity.

Family Assessment Device. (Epstein, Baldwin & Bishop, 1983). This is a 60 item questionnaire rated by both the adolescent and a parent separately. Each question is in the form of a statement which is endorsed as strongly agree, agree, disagree or strongly disagree. The questions focus on seven dimensions of family functioning; problem-solving, communication, roles, affective involvement, affective responsiveness, behaviour controls and general functioning. The scales are derived from the McMaster model of family functioning (Epstein, Bishop & Levin, 1978). Reliabilities (Cronbach's alpha) for the sub-scales range from 0.72 (roles) to 0.92 (general functioning).

Beck Depression Inventory. (Beck, Rush, Shaw & Emery, 1979). This is a 21 item questionnaire that assesses depressed mood in the last week. It has high internal consistency, Cronbach's alpha=.80; high test-retest reliability in non-clinical samples (it may be expected that the BDI scores may decrease

during treatment in clinical samples and test-retest reliability in such samples may not be appropriate); has good content, discriminant, construct and concurrent validity (Beck & Steer, 1987). It has been used successfully with adolescents (Carter & Dacey, 1996). In some studies the BDI has demonstrated a moderate correlation with age.

Beck Hopelessness Scale. (Beck, Weissman, Lester & Trexler, 1974). This is a 20 item questionnaire which seeks to explore current feelings of hopelessness. The BHS has high internal consistency (Kuder-Richardson reliability 0.82 for single episode major depression, 0.92 for suicide attempters); test-retest reliability between 0.66 and 0.69; and it has good content, concurrent, discriminant, construct and predictive validity (Beck & Steer, 1988). The instrument is valid for use from age 13. We took the risk of using the instrument for all adolescents as very few (5; 10.9%) were under the age of 13 and no other measure suitable across the age range was available.

Beck Anxiety Inventory. (Beck, Epstein, Brown & Steer, 1988). This is a 20 item questionnaire which asks about feelings of anxiety over the past week. The BAI has high internal consistency (Cronbach's alpha=0.92); high test-retest reliability (r=0.75); and good content, concurrent, construct and discriminant validity (Beck & Steer, 1990). It has not previously been used with adolescents, although in one study some adolescents were included in the study sample (Beck, Epstein *et al*, 1988); its simplicity led to no difficulties in comprehension for any of the adolescents. However, as no other validated measure of anxiety in adolescents was included in the study,

some caution needs to be exercised in interpreting the results of this instrument.

Spielberger State-Trait Anger Inventory. (Spielberger, Jacobs, Russell & Crane, 1983). This is a 44 item questionnaire which yields scores of state and trait anger and also methods of dealing with anger (internally directed or externally directed anger) and mechanisms of anger control. The measure is reliable and valid (Spielberger, 1991).

Harter Self-Perception Profile. (Harter, 1988). This is a 45 item questionnaire which assesses relative importance and competence across a number of domains of functioning; scholastic ability, social acceptance, athletic ability, physical appearance, romantic appeal, job competence, behaviour control and close friendship as well as global self-esteem. The questionnaire also yields a self-esteem score based on the balance between relative importance and perceived competence. The sub-scales have acceptable internal consistency reliability.

2.2.4. Procedure.

During the familiarisation period both the adolescent and his / her parents were asked to complete initial assessment information; namely the Achenbach behaviour scales (Child Behaviour Checklist and Youth Self-Report Scales) and the assessment of family functioning (Family Assessment Device, Epstein, Baldwin and Bishop, 1982).

During the further month assessment a thorough assessment of mood and self-esteem was conducted. The mood assessment was left until this time to reduce the impact of admission. Admission to any mental health facility is a major life event and as such may temporarily increase mood disturbance. Therefore, the mood assessment was not completed until adolescents had settled in to the unit to ensure a more conservative test of outcome. During this period adolescents completed the Beck Depression Inventory, the Beck Hopelessness Scale, the Beck Anxiety Inventory, the Spielberger State-Trait Anger Inventory, and the Harter Self-Perception Profile.

Results.

Data exploration and reduction.

Inter-correlations between behaviour measures. On the Youth Self-Report Scale (YSR), the internalising and externalising scales were moderately correlated ($r(44)=.31$, $p=.037$); whereas the CBCL internalising and externalising scales were highly correlated ($r(32)=.53$, $p=.001$)[2].

Comparing across scales, adolescents ratings on YSR internalising problems did not correlate significantly with parental CBCL ratings ($r(32)=.15$, $p=.39$) whereas there was moderate agreement on the existence of externalising behaviour problems ($r(32)=.57$, $p<.001$).

Inter-correlations between mood measures. The correlations between mood measures are displayed in Table 2.1 (overleaf).

[2] To reduce the possibility of Type 1 errors, for zero order correlations a more stringent level of significance of $p<.01$ was applied. Correlations where significance was $p<.05$, were judged to be moderate correlations; significance levels of $p<.01$ or $p<.001$ were judged to indicate high correlations. All correlations are Pearson Product Moment Correlations.

Table 2.1: Inter-correlations between mood measures.

	BDI	BAI	BHS	State anger
BAI	.65***			
BHS	.57***	.59***		
State anger	.60***	.66***	.54***	
Trait anger	.34*	.42**	.36*	.30*

Note: * p<.05
** p<.01
*** p<.001

Negative affectivity. As the inter-correlations between mood variables were high, consideration was given to combining all mood scores into a combined scale of negative affectivity, consisting of adding together scores (all converted to T scores) on the BDI, BAI, BHS, State and Trait Anger. Cronbach's alpha for this putative scale was computed and was high (alpha coefficient=.82) which is comparable to the internal consistency scores for the individual Beck scales. Negative affectivity was therefore used in those of the subsequent analyses where no specific mood was of interest, to reduce the possibility of Type 1 errors.

Family functioning. On questionnaires completed by the adolescent and his or her family, scores on all dimensions inter-correlated highly with one another (adolescents scales 57% of correlations r(42) >.5, p <.001; family 86% of correlations r(30)>.5, p values <.003) but scores by adolescents did not correlate significantly with scores by their parents.

As the inter-correlations were so high the possibility of combining the variables to form two scales, one for adolescent ratings of family functioning and one for family ratings of family functioning, was considered. Cronbach alpha coefficients were computed for these two putative scales; for the adolescent scale (AFAD) alpha=.89; for the family scale (FFAD) alpha=.91.

These combined scales were therefore utilised in subsequent analyses. Scores on the AFAD and FFAD did not correlate significantly with one another

2.3.2. Descriptive statistics.

Age. The overall sample mean was 14.43 years. Males were significantly younger than females (males=13.95, females=14.88; t(44)=-2.16, p=.036). Age was modestly correlated with negative affectivity (r(44)=.39, p=.008) and internalising problems (r(44)=.42, p=.004), but not with any of the other study variables. These are the two variables upon which males and females differed significantly from each other and it is therefore likely that these modest correlations are a consequence of the fact that the females were older than the males.

Gender. Females reported more internalising problems than males ($t(44)=-2.21$, $p=.032$). Parents reported more externalising problems for males than females ($t(28.4)=2.49$; $p=.019$)[3].

No significant differences were observed between males and females on either their own ratings of externalising problems ($t(44)=-1.04$; $p=.304$) or parental ratings of internalising problems ($t(32)=.77$; $p=.411$). No significant differences were observed on any of the activity and social measures of either the Child Behaviour Checklist or the Youth Self Report Scale.

Significant differences were observed between males and females on some of the admission measures of mood (see Table 2.2 overleaf).

[3] The internalising and externalising sub-scales are calculated slightly differently for males and females. However, it is traditional to report on these scales as measuring the same aspect of functioning in both males and females (Evans, Noam, Wertlieb, Paget & Wolf, 1994). The validity of this assumption was checked by looking at the inter-correlations between these two scales with other variables by gender. Only two differences were observed, both with respect to the internalising scale. For females the correlation with anxiety was higher ($r=.62$) than that for males ($r=.35$); for males the correlation with hopelessness was higher ($r=.67$) than for females ($r=.38$).

Table 2.2 Severity of mood disturbance (mean scores) between males and females.

Mood measure	Males (n=22)	Females (n=24)
BDI	14.86	27.21**
BAI	12.68	22.25**
BHS	8.27	12.21*
State Anger	53.42	56.21
Trait Anger	48.47	54.00
Anger Expression		
Internal	46.26	54.79**
External	53.00	58.83
Control	46.05	45.04

* p<.05
** p<.01

As a consequence females experienced significantly more negative affect than males (t(44)=-3.37, p=.002).

Females had lower levels of self-esteem on the Harter measure of global self-esteem (t(42)=2.88, p=.006).

ICD-10 diagnosis. The ICD codes of the adolescents admitted to the study are shown in Table 2.3 (page 56). As is evident from inspecting the table, the frequencies in each category are very low which made statistical analysis by individual ICD classification difficult. Consequently, these codes were collapsed into four categories; primary mood disorder, conduct disorders,

mixed disorders of conduct and emotion and a miscellaneous category. The numbers in each cell remained low. Caution should be exercised therefore in interpreting the following results.

Table 2.3: ICD diagnoses for adolescents in the study.

ICD code number	Description	Frequency
Primary mood disorders		
F32.1	Moderate depressive episode	4
F32.11	Moderate depressive episode with somatic symptoms	3
F32.2	Severe depressive episode	1
F40.1	Social phobia	2
F93.0	Separation anxiety disorder	1
F42.0	Obsessive compulsive disorder	2
F43.1	Post-traumatic stress disorder	1
Conduct disorder.		
F91.0	Conduct disorder confined to family context	4
F91.1	Unsocialised conduct disorder	9
F91.2	Socialised conduct disorder	2
F91.3	Oppositional defiant disorder	2
Mixed disorder of conduct and emotions.		
F92.0	Depressive conduct disorder	3
312.3	Mixed disorder of conduct and emotions	2
Miscellaneous.		
F50.0	Anorexia nervosa	3
F59.0	Behavioural syndrome associated with physical factors	1
F60.6	Anxious personality disorder	1
F20.3	Schizophrenia	1
F98.5	No clear emotional or behavioural disorder	1
	Code missing	2

There were no significant differences in history of parasuicidal behaviour in the different ICD classifications ($\chi^2(3)=5.04$, $p=.168$); nor were there any significant differences in use of drugs ($\chi^2(3)=4.25, p=.235$) or the gender distribution by ICD-10 diagnosis ($\chi^2(3)=5.41$, $p=.144$).

There were no significant differences in negative affectivity ($F(3,19)=.74$, $p=.542$), internalising problems ($F(3,19)=1.58$, $p=.227$), externalising problems ($F(3,19)=.43$, $p=.738$), or adolescent ratings of family functioning ($F(3, 19)=.88$, $p=.409$) by ICD-10 diagnosis.

Problem severity. Overall problem severity was rated by six ratings, internalising and externalising problems on both the Youth Self-Report Scale and the Child Behaviour Checklist and also adolescents' and parents' severity ratings of their main problems. These are illustrated in Table 2.4 (overleaf). There were significant differences in judged problem severity depending upon who was rating the problems. On both internalising and externalising scales parents rated the problems of the adolescents as being greater.

Table 2.4 Difference in judged severity of presenting problems.

Measure	Adolescent n=46	Parent n=34
Internalising score	65.28	71.14*
Externalising score	59.80	69.12***
Problem list	13.96	17.42*

* p<.05
** p<.01
*** p<.001

History of Parasuicidal Behaviour. Characteristics of those with a history of parasuicidal behaviour compared to those without such a history are shown in Table 2.5 (overleaf). No significant differences were observed in rates of parasuicidal behaviour in males and females, however, numbers were small. Individuals with a history of parasuicidal behaviour experienced significantly greater negative affectivity ($t(29)=-3.62$, $p=.001$), internalising problems ($t(29)=-2.55$, $p=.016$) and lower global self-esteem ($t(28)=3.16$ $p=.004$) than those without such a history.

Table 2.5: Differences in problem presentation in those with and without a history of parasuicidal behaviour.

Measure	History of Parasuicide	No history of parasuicide
Internalising (adolescent)	70.69	61.00*
Externalising (adolescent)	63.46	58.83
Internalising (parent)	74.00	70.62
Externalising (parent)	68.18	70.92
Negative affectivity	56.62	47.51**
Global self-esteem	1.52	2.42**

* $p<.05$
** $p<.01$
*** $p<.001$

In summary, those with a history of parasuicidal behaviour tended to experience greater negative affectivity and lower self-esteem. It may be that experiencing higher levels of negative affectivity predisposes to parasuicidal behaviour partly because this form of behaviour may in some cases perform an affect regulating function (Linehan, 1993 a).

2.3.3. Correlational data: behaviour problems, negative affectivity and family functioning.

Following initial exploration of the data as described above, the main focus of the study, the relationships between behaviour, mood and family function were explored.

Behaviour problems and negative affectivity.

Adolescents who reported higher levels of internal problems on the YSR reported greater mood disturbance on other individual measures of mood disturbance. Adolescents who reported more externalising problems had higher trait anger and expressed this outwardly. As a consequence, negative affectivity was related to both internalising and externalising problems. The zero-order correlations describing these relationships are depicted in Table 2.6 (overleaf).

Table 2.6: Relationship between mood and behaviour problems

Measure	YSR Behaviour Scales	
	Internalising	Externalising
BDI	0.71***	0.31*
BAI	0.58***	0.34*
BHS	0.54***	0.37*
State anger	0.45**	0.29
Trait anger	0.39*	0.64***
Anger expression		
Internal	0.59***	0.29
External	0.16	0.59***
Control	-0.16	-0.34*
Negative affectivity	0.68***	0.48**

* p<.05
** p<.01
*** p<.001

Parental ratings of internal and externalising problems on the CBCL did not correlate significantly with any of the mood measures individually or with negative affectivity.

These relationships are as expected, with positive correlations between self-rated depression, anxiety, hopelessness and inwardly directed anger and internalising problems and between trait and outward expression of anger and externalising problems. It is possible that the internalising problems scale may simply be another measure of negative affectivity. If so, it will not

contribute to the prediction of outcome after negative affectivity has been partialled out. The extent to which it does so will be examined in chapter 5. In the case of externalising problems it is reasonable to suppose that many of the delinquent and aggressive acts referred to on this scale may derive from high levels of anger and a tendency to outwardly direct these feelings.

Behaviour problems and family functioning.

Behaviour problems as rated by both parents on the CBCL and adolescents on the YSR did not correlate significantly ($p<.01$) with the combined measures of family functioning.

Negative affectivity and family functioning.

Negative affectivity was moderately correlated with adolescent's ratings of family dysfunction ($r(42)=.34$, $p=.025$) but not with parental ratings ($r(30)=-0.09$, $p=.622$).

There was no significant relationship between negative affectivity and family functioning at the stringent level of significance ($p<.01$). The primary relationship seems to be between self-rated behaviour problems and self-rated negative affectivity.

Relationships between negative affectivity, behaviour problems and family functioning.

As indicated earlier, these three variables of mood, behaviour and family functioning are likely to be inter-related. The initial zero-order correlations seem to indicate that the relationship between mood and behaviour is the strongest. However, this relationship may be mediated by family function.

Internalising and externalising problems as rated by adolescents remained significantly related to negative affect when family dysfunction (as rated by adolescents) was controlled for (internalising, $r(41)=.65$, $p<.001$, zero-order correlation $r(44)=.68$; externalising, $r(41)=.42$, $p=.005$, zero-order correlation, $r(44)=.48$).

2.3.4. Self-esteem.

Self-esteem is often described as an important variable in adolescent development and psychopathology. However, its relationship to other relevant variables often remains unexplored. In this study its relationship to the three key variables, behaviour problems, negative affectivity and family functioning was explored.

Self-esteem and behaviour problems.

Low self-esteem, as measured by the global self-esteem score, was related to higher levels of reported internalising problems by adolescents ($r(42)=-0.62$,

$p<.001$) but not to externalising problems ($r(42)=-0.23$, n.s.). Self-esteem was not related to parental reports of internalising ($r(30)=.06$, n.s.) and was only modestly correlated with externalising problems ($r(30)=.36$, $p=.044$) as rated by parents.

Self-esteem and family functioning.

Self-esteem as measured by the Harter global self-esteem score was not related to family functioning as rated either by adolescents ($r(40)=-.30$, n.s.) or by parents ($r(28)=.05$, n.s.).

Self-esteem and negative affectivity.

As expected, low self-esteem was related to higher levels of depression. It was also the case that low self-esteem was related to higher levels of negative affect generally. However, the partial correlations controlling for depression, indicate that these relationships were a consequence of the strong correlation between self-esteem and depression and the high inter-correlation between mood measures (Table 2.7, overleaf).

Table 2.7: Pearson zero-order and partial correlations between mood measures and global self-esteem.

Mood variable	Correlations with global self-worth	
	zero-order	partial controlling for depression
BDI	-0.75(44)***	
BHS	-0.46(44)**	-.36*
BAI	-0.43(44)**	.06
State anger	-0.46(42)**	<.01
Trait anger	-0.20(42)	.05

2.4. Discussion.

These data summarise the types of problems adolescents presenting to a residential treatment unit experience from a number of perspectives; that of the adolescent, his or her parents and that of the team. There are four aspects of these data which will be considered. Firstly, the importance of gender for the nature of presenting problems and the reasons for the differences between males and females. Secondly, the discrepancy in perception between adolescents and parents on both the nature and the severity of the problems they experience. Thirdly, the relationship between mood and self-esteem and finally the inter-relationships between mood, behaviour and family function.

2.4.1. Gender.

Within this sample there were 22 males and 24 females. In common with other studies of this type there were approximately equal numbers of males and females admitted to the unit. This contrasts with the observation that there are greater levels of psychopathology in girls in the adolescent age range. One possibility is that there is a gender-based referral bias to this adolescent unit. However, other studies of adolescent units report similar effects (Turner *et al,* 1986; Jaffa & Dezsery, 1989; Wrate *et al*, 1994). One possible explanation for this is that admission to an adolescent unit is an event which only occurs to a select sample of the most troubled adolescents and so admission of equal numbers may indicate a sampling effect i.e. that the distribution of distress in boys is less widespread and is concentrated at

the more severe end of the spectrum or there may be other reasons which contribute to the *impression* that females experience more distress than males. Some of these reasons will be considered further.

In this study, according to the adolescents account, females experience more internalising problems than males and the experience of externalising problems are equivalent. This finding is also observed on the other measures of mood, with females reporting higher scores on depression, anxiety, hopelessness and internalised expression of anger. None of these variables were significantly related to age which potentially could have been a confound in this study as the males were on average a year younger than the females.

There is evidence that females experience greater levels of mood disturbance than males during the adolescent period (Nolen-Hoeksema, 1994) It is important to know whether these findings represent greater psychopathology or are a consequence of reporting biases, the so-called artefactual hypothesis (Allgood-Merton *et al*, 1990). Females, even during adolescence, are more relationship focused and use interpersonal relationships to ventilate feelings and to discuss their emotional concerns (Seiffge-Krenke, 1993). As a consequence, they may be more accustomed to disclosing their feelings to others, unlike males, who are observed to prefer distraction or problem-solving as ways of coping with distressing affect. A greater willingness to disclose problems may result in females appearing to be more distressed than males purely because they are more willing to report distress. They may also be more accustomed to activating social support by disclosing concerns.

However, an extensive number of studies specifically addressing this hypothesis have failed to find a gender bias in reporting (Allgood-Merton *et al*, 1990). It therefore seems reasonable to conclude that generally genuine differences in the experience of depressed mood states exist between males and females. Why might this be the case?

A number of factors have been investigated which are relevant to the development of gender differences in mood disturbance. Firstly, females in early adolescence experience a number of stressful life experiences simultaneously, namely puberty, consequent changes in self-esteem and inter-personal networks and transition to secondary school. As an increased frequency of simultaneous stressful events is known to increase risk to psychopathology (Compas, 1987) it has been suggested that this is the reason that females suffer more during this period than males. The later onset of puberty for males means that at the time of transition to secondary education there are fewer simultaneous stressors. Peterson, Sarigiani & Kennedy (1991) tested this hypothesis directly in a cohort-sequential longitudinal study and found evidence to support the view that females were at greater risk of depression in late adolescence as a consequence of experiencing more challenges in early adolescence.

Secondly, self-esteem has been demonstrated to be an important variable in the development of mood disturbance. Females generally, as in this study, experience lower levels of self-esteem and as such are more vulnerable to depressed mood. Lower levels of self-esteem are partly related to greater number of synchronous changes as previously described (Simmons,

Burgeson, Carlton-Ford & Blyth, 1987) and also because pubertal changes are evaluated differently by males and females. During puberty females gain body fat whereas males gain lean body mass. Females dislike their gain in weight whereas males tend to positively value the increase in muscle mass (Nolen-Hoeksema, 1994). In addition, self-esteem seems to be more closely related to body image in females than in males (Lerner & Karabenick, 1974). Accounting for body image and self-esteem has been shown to remove any gender bias in depressive symptoms (Allgood-Merton *et al*, 1990). Eiser, Havermas & Eiser (1995) also described removal of gender differences in reporting of physical and psychological symptoms by controlling for self-esteem.

Thirdly, it has been suggested that there are developmental pressures for females to adopt more passive problem-solving styles. Studies within the non-clinical adolescent population (Seiffge-Krenke, 1993) indicate that the coping style pattern of female adolescents is more similar to that of adolescents seeking help from psychiatric services irrespective of gender, namely a greater use of emotion-focused coping strategies rather than problem-focused strategies. This work would suggest that females would be vulnerable to psychopathology in adolescence not only as a consequence of their increased exposure to stressful life events but also because they are less well equipped to deal with these events by using active problem solving. Instead they may be more inclined to focus on their emotional response and, whilst in some circumstances this is undoubtedly adaptive, for example when the external stressor is objectively uncontrollable, in cases where more active coping is required this is less functional. As a consequence they may

be more vulnerable to suffer emotional distress. Evidence indicates that females across the life-span, including adolescents, tend to adopt a ruminative style of coping which is more likely to result in the onset and maintenance of mood disturbance (Girgus, Nolen-Hoeksema & Seligman,1991; Compas, Malcarne & Fondacaro, 1988)

In summary, the findings of this study support previous findings relating to greater psychopathology in females. The available evidence indicates that this is not an artefact but is more likely to be attributable to increased numbers of stressors, which are more likely to occur simultaneously in the context of less adaptive problem-solving skills and low self-esteem.

2.4.2. Differential problem perception.

Perceptions of the problems differed depending on the informant. According to parents, males presented with more problems than females and these problems tended to be externalising, rather than internalising, in nature.

One possible explanation for this difference is that the males genuinely do present with more behaviour problems than the females and that they do not report this themselves because they lack insight into their current problems. However, it is also possible that in fact they are no more disturbed than the females but that parents perceive them as being more difficult to manage, finding their behaviour more challenging. It is also possible that because males tend to be less focused on dealing with their emotions they may address this through challenging behaviour which in their experience is an

expression of *emotional state* but for their parents *appears to be* a challenge to authority. This hypothesis could be explored further by comparing parental, adolescent and staff reports of internalising and externalising problems on the same measure. It would be anticipated that if parents were predisposed to perceive emotional distress as a challenge to authority then the ratings of adolescents and staff would have higher agreement with one another than with parental ratings. However, if it is the fact that males lack insight into their externalising behaviour problems the agreement between parents and staff would be expected to be greater than that between either parents or staff and adolescent ratings.

This issue leads on to the second noticeable theme within the data; the discrepancy between adolescents and their parents about the nature of problems. Generally speaking there was a lack of agreement between adolescents and parents on the type of problem presented, that is, whether they were 'internal' or 'external' problems; the severity of the problem, parents generally perceiving problems to be more severe than adolescents; and on family function.

This first observation that adolescents and parents tend not to agree on the type of problem has been noted before. Low concordance between children and significant others regarding the presence and severity of symptomatology has been observed (Rutter *et al*, 1970; Angold *et al*, 1987; Verhulst & van der Ende, 1992). This observation may be a consequence of the adolescent's increasing desire to gain independence from their parents and to spend increasing lengths of time within friendship groups and away

from their parents. Parents therefore have less opportunity to closely observe their adolescent's mood state. Adolescents are also probably less likely to confide in their parents as they gradually seek greater autonomy. It may also be that even if adolescents do betray certain signs of distress these may be dismissed as indicative of signs of a "phase". Parents may find it hard to imagine the stresses and strains of the challenges of adolescence, having survived them themselves they may tend to trivialise them and not to take them seriously. The common myth that adolescence is a time of 'storm and stress' has not helped to decrease this type of problem.

These observations may appear to contradict the other finding within this sample that parents tended to experience the problems with their adolescent as being significantly more serious than the adolescents themselves. However, this is most likely to be a consequence of the fact that this is a selected sample of adolescents whose parents have presented them for treatment and therefore, by definition, are probably more anxious than parents within the general population. In addition to this the adolescents themselves may seek to normalise their experiences as they fear the stigma of their admission and are fearful of its significance. It may therefore be a consequence of both of these pressures that parents perceptions of difficulties in this study are greater than those of their adolescents. This finding of parents reporting greater severity of problems than adolescents has been observed before in an in-patient sample (Kazdin et al, 1983).

2.4.3. Mood.

The data reported here are the first in a study of this type to examine more closely the mood state of adolescents admitted to a residential treatment facility. A number of well known relationships were confirmed in this study. Firstly, the relationship between depression and self-esteem, with those with low self-esteem experiencing greater depressed mood; secondly, that females had higher levels of mood disturbance and lower levels of self-esteem than males, even within a population selected for emotional and behavioural problems; thirdly, those with a history of parasuicidal behaviour experienced greater mood disturbance and lower self-esteem than those who had no history of self-harm.

It is also of note that there was a high inter-correlation between all mood measures. This raises the question of whether adolescents are in fact poor discriminators of mood and that studies in which only single mood measures are taken should be interpreted with caution. Indeed, evidence from adults suggests that eliciting one mood may actually result in the activation of a number of mood states; in particular the negative emotions of hostility, anxiety and depression appear to covary (Polivy, 1981). Perhaps as is suggested here a measure of *negative affectivity* is a more appropriate measure and apt description of their emotional state? Research on ambivalence and the identification of contradictory moods following an emotionally charged event indicates that the experience and recognition of ambivalence progresses through a number of recognisable stages (Harter, 1977; Harter & Buddin, 1987). Infants and young children show clear

behavioural evidence of ambivalence, however, children aged three to six are not able to conceive that the same situation may provoke two apparently contradictory emotions. Between the ages of six and eight children become able to appreciate that the same situation may elicit two emotions, but successively rather than simultaneously. It is only at the age of ten or eleven that the articulation of situations indicating true ambivalence becomes possible. This slow development of ambivalence is not related to difficulties in recollecting examples from memory or in inventing appropriate scenarios (Harris, 1992).

So, if adolescents in this study are not poor discriminators of mood, perhaps they do just experience significant negative affect in a number of domains? Work by Renouf & Harter (1993) in non-clinical populations suggests that complex emotions derive from multiple problems in the past. In this study it was demonstrated that for these adolescents depression was experienced as a mixture of sadness and anger and that this was related to the fact that many of the problems precipitating the depressed mood were caused by others towards whom anger would have been an appropriate response. In clinical samples where adolescents have experienced significant negative life events, this may particularly be the case. The importance of cognitive variables, such as attributional style and autobiographical memory, in this process will be considered in more detail in chapter 3. Moreover, adolescents who have been persistently invalidated may develop significant difficulties in the recognition and regulation of affect, an important factor in the development of borderline personality disorder according to some theorists (Linehan, 1993 a). In such adolescents a high degree of association between

depression, anger and hopelessness may be expected; depression resulting from feelings of low self-worth and the cumulative effects of numerous life events; anger towards those who have perpetrated these events; hopelessness regarding the future, as firstly, it is so often the case that the agents of the distress are still significant figures in the lives of the adolescents and secondly, this group of adolescents have been particularly ill-prepared to meet the adolescent challenge.

2.4.4. Behaviour problems, mood and family functioning.

Finally, this study considered two hypotheses on the relationship between mood, behaviour and family functioning; firstly, that family dysfunction results in mood and behavioural disturbance; secondly, that disturbed mood and behaviour, arising from other sources, leads to family dysfunction as attempts are made to accommodate to the behaviour. This study explored the inter-relationships between these variables at one point in time.

The inter-relationships between behaviour and mood were as expected in this study with internalising problems correlating significantly with depression, anxiety and hopelessness and externalising problems correlating with trait anger. Consequently, negative affectivity correlated with both internalising and externalising problems. Overall, there were no significant relationships between the broad band behaviour measures (internalising and externalising) and family functioning. This result therefore may suggest that these two variables are not related; this is certainly one possibility. However, it may be that searching for the relationships between mood, behaviour and family

function as three single concepts was over general and that more specific hypotheses regarding the inter-relationships between different aspects of family function and different types of problem need to be advanced. So, for example, poor behaviour controls within families may relate to aggressive and delinquent sub-scales of the YSR, whereas lack of affective involvement or affective responsiveness may relate to depression and identity problems. This approach may also prove fruitful in examining further the relationships between mood and family functioning, which if considered at a broad band level, were not significant at a stringent level of significance.

In summary, the primary relationship seems to be between mood and self-reported behaviour and that in the current analysis these internal relationships, within different aspects of the adolescent's psychopathology, are more robust than their relationships with factors outside the adolescent. However, the failure to find such specific relationships may be a consequence of lack of specific hypotheses and looking in a too general fashion at the inter-relationships. It may also be the case that an observational measure of family function may yield a more robust test of the relationships. Families presenting with a disturbed adolescent are already likely to be concerned that they may be blamed or held responsible for their adolescents' problems. To defend against this they may under-report family problems rather than face confirmation of this fear. By the same token one might expect adolescents to amplify their family problems for fear that they will be blamed for the difficulties, so demonstrating a strong association between their own psychopathology and that of the family. This, however, was not the case.

2.5. Summary

This study describes the presentation of 46 adolescents admitted to a residential unit for assessment and treatment of emotional and behavioural problems. In general, the female adolescents, who were on average older, described more severe mood disturbance and lower self-esteem than the male adolescents. All adolescents could be said to experience significant negative affect across a number of domains of mood.

Mood disturbance was related to high levels of behaviour disturbance and this relationship seemed to be of greater significance than the relationships between mood and family functioning and between behaviour problems and family functioning.

Chapter 3

Specificity, dysfunctional explanatory styles, social problem-solving and mood disturbance in adolescents in a residential setting.

Abstract

The relationship between mood disturbance and cognitive variables has been extensively studied in adults in an endeavour to understand the origins of severe and prolonged mood disturbance. This work has stemmed from both experimental traditions and from therapeutic interventions. Detailed models have been derived to explain these data (e.g. Teasdale & Barnard, 1993).

This study seeks to extend some of this work into an adolescent population. Adolescents from a residential in-patient facility completed measures of attributional style, autobiographical memory, social problem-solving and mood disturbance, in particular depression and hopelessness. Depressed mood was related to all aspects of dysfunctional explanatory style and to specificity of recall of autobiographical memories. Hopelessness was related to depression and attributional style. Autobiographical memory and attributional style were not correlated with one another. In contrast to studies with adults, there was no evidence to suggest that participants with a history of parasuicidal behaviour were any less able to be specific in their retrieval of autobiographical memories. The relationship between mood and specificity varied depending upon attributional style. In adolescents with dysfunctional explanatory style specificity of responses to negative cues was related to an increase in depression and lower hopelessness. In contrast, in adolescents with more adaptive attributional styles, specificity of responses to negative cues was related to increased hopelessness and increased depression.

3.1. Introduction

The relevance of thought processes to clinical depression has been extensively explored. Three strands of research have contributed significantly to our understanding of depressive processes; firstly, the work of Seligman, initially investigating the impact of aversive experiences on animals and then expanding this work into understanding depression in adults and children; secondly, the investigations of experimental cognitive psychology into the function of memory processes in depression and other mood states; thirdly, the work of Platt, Spivack and others investigating the deficits of depressed patients in social problem-solving. All three of these strands will be reviewed briefly, firstly with respect to mood disturbance in adults (sections 3.1.1. to 3.1.3.) and secondly in adolescence (section 3.1.4.).

3.1.1. Learned helplessness and attributional style in adults.

Seligman (1975) described the impact on animals of uncontrolled aversive experiences. In contrast to animals who had some degree of control over the aversive experiences (delivery of electric shock), animals experiencing uncontrollability demonstrated motivational and cognitive deficits termed *learned helplessness* which came to be considered as an analogue for human depression. Within this model the central theme of human depression was considered to be the experience of uncontrollable aversive experiences which, mediated by neurochemical mechanisms, led to the motivational and cognitive deficits observed in human depression. A number of studies supported the adoption of this model as an analogue of human depression (Hiroto &

Seligman, 1975). However, the theory was problematic, in particular it could not account for the boundary conditions of human depression, for example, the generality and pervasiveness of depressed mood, nor could it explain the experience of low self-esteem as a consequence of uncontrollable life experiences.

As a consequence the theory was revised (Abramson, Seligman & Teasdale, 1978). The learned helplessness reformulation postulated four conditions for the development of depression. Firstly, that highly aversive events are expected; secondly, the individual expects to be unable to alter the likelihood of these events; thirdly, the individual possesses a maladaptive *attributional or explanatory style;* fourthly, the greater the certainty of the expected aversive event and the expected uncontrollability, the greater the strength of the motivational and cognitive deficits; and the greater the importance of the event to the individual the greater the affective and self-esteem disruption. Abramson, Metalsky & Alloy (1989) proposed a revised account of the reformulation - the hopelessness theory. This revision is related to the first postulate of the reformulation. Hopelessness is hypothesised to result from the expectancy that highly desired outcomes will not occur and highly aversive outcomes will occur and that changing the situation for the better is not possible. In the revision to the theory, hopelessness is viewed as a proximal cause for depression, a final common path for a range of distal factors, one of which is attributional style. Despite the revision, as Williams (1992) comments, most attention has been directed towards the third postulate of the theory, that depressed individuals possess maladaptive attributional styles and that these styles mediate the experience of uncontrollability. It is

hypothesised that individuals who attribute negative events to internal, stable and global causes are more likely to become depressed than those who attribute them to external, unstable and unspecific causes. The original formulation of the revised theory makes a strong claim for the causal priority of attributions.

There is extensive evidence linking attributional style to the experience of depression (Peterson & Seligman, 1984). In cross-sectional studies there is evidence of some degree of specificity of internal, stable and global attributional styles to depression (Raps, Peterson, Reinhard, Abramson & Seligman, 1982); although, some researchers have not found this to be the case (Hargreaves, 1985). The evidence regarding the causal priority of attributions is mixed. Early studies seemed to support the causal priority statement (Metalsky, Abramson, Seligman, Semmel & Peterson, 1982), however, these results were reanalysed by Williams (1992) and indicated that the thesis could not be supported from the data. Other subsequent studies (Metalsky, Halberstadt & Abramson, 1987; Lewinsohn, 1981) found no evidence for the strong causal priority of cognitive style.

In a comprehensive review of the evidence linking attributions to depression, Brewin concluded that there was support for three possible relationships (Brewin, 1985). Firstly, in some studies attributions are found to revert to a non-depressive pattern following the remission of depression; this evidence supports the view that certain forms of attribution are symptoms of depression. Secondly, attributions seem to play a role in the maintenance of depression, such that individuals with depressive attributions experience

greater chronicity of depression; the recovery model. Finally, there is support for a coping model of the relationship between depression and attributions. In this model there is evidence to support the view that internal, specific and stable attributions for success and the opposite for failure may result in an individual being resilient to depression at all times, irrespective of whether they have experienced an uncontrollable event. Brewin (1985) also concluded that the role of attributions in the direct onset of depression or as vulnerability factors was not yet confirmed.

Models of the depressive process derived from clinical, as opposed to experimental traditions (Beck, Rush, Shaw & Emery, 1979), which have also made strong claims for causal priority, have had difficulty supporting these claims. There is some evidence that in non-clinical participants depressive cognitions have a causal ability to affect mood (Goodwin & Williams, 1982). However, there have been persistent difficulties in demonstrating that dysfunctional cognitions play an independent causal role in the development of depression.

The difficulties in establishing the causal priority of cognitions in experimental studies led to an extensive debate within the literature between two competing conceptualisations of depressive thought; cognitive theory which in its strong form claims that it is cognitive distortions which are crucial in the onset of depression; and the primacy of affect claim (Zajonc, 1984), which maintains that changes in affect are primary in the development of depression and that cognitions develop as a response to or are an integral part of depression. This debate has resulted in a fruitful discussion of the evidence in favour of both

approaches with no clear resolution. The evidence seems to support the view that there are many routes to depression, and in some studies which have directly tested both models (Parry and Brewin, 1988), the evidence has supported a mixed aetiology model i.e. that in some cases dysfunctional cognitions arise as part of depression, whereas in others they act as independent vulnerability factors. It is also likely that the maintenance of depressed mood relates to a number of factors, for example, chronic stressors, attributional style for positive events (Needles & Abramson, 1990; Edelman, Ahrens & Haaga, 1994) and attributions about the consequences of the depression such as depression about depression (Teasdale, 1988).

3.1.2. Autobiographical memory.

Other research examines cognitive processes indirectly rather than relying on self-report procedures which may be more subject to bias. The role of memory, in particular autobiographical memory, in the onset and maintenance of mood disturbance has been the focus for much of this work. Autobiographical memory describes those memories that individuals retrieve which have personal salience for them, which are not part of generic scripts, autobiographical facts or semantic memory, but which form their own personal autobiography.

It has been noted repeatedly that in individuals with some forms of mood disturbance retrieval of specific autobiographical memories are particularly difficult (Williams, 1996). There are a number of reliable findings from this work; recall of overgeneral memories, which can be elicited using a number

of cueing techniques, is observed in individuals with a diagnosis of primary major depression and those who have recently parasuicided, but is not found in those who are anxious. Overgenerality appears to be a trait-like phenomenon as it remains a feature of memory retrieval after depression has remitted (Williams & Dritschel, 1988). In those who have recently parasuicided, over-generality is associated with poor problem-solving (Evans, Williams, O'Loughlin & Howells, 1992) and in those with major depression, it is associated with poorer long-term outcome (Brittlebank, Scott, Williams & Ferrier, 1993).

The origins of over-generality seem to reside in childhood. Memory recall based on *general event representations* (GER: Nelson, 1991) is part of normative child development. Young children, aged 3 to 4, even in response to specific prompts, tend to retrieve general descriptions, rather than specific events. At this age this is thought to assist in using general schemes for action. It is hypothesised that children who experience aversive events in childhood may fail to move on from these GERs to encode more specific memories, or even if these are encoded, to experience difficulties in their retrieval. Williams (1996) has suggested that use of GER's may be a strategy for controlling aversive affect, which may arise in response to specific memories, particularly in individuals who have experienced aversive childhood experiences. Indeed there is evidence of particular problems in the recall of specific memories in those with a past history of sexual abuse (Kuyken & Brewin, 1995). It therefore seems that problems in retrieving autobiographical memories may be an important link in the chain of causality between aversive life experiences in childhood and later mood disturbance.

3.1.3. Social problem-solving.

What are the consequences of such deficits in encoding and retrieval? If someone is unable to retrieve specific events from their autobiographical memory then it has been suggested that their ability to problem-solve in the present may be affected. Various studies in this tradition, reviewed by Marx, Williams & Claridge (1994), have confirmed that there is a link between ineffective problem-solving and depression (Heppner, Baumgardner & Jackson, 1985; Nezu, 1985, 1986a). Others have found that the deficits are more indicative of a negative self-schema (Blankenstein, Fleit & Johnston, 1992) and as such do not reflect a pure deficit in problem-solving in social situations. Studies which focus on situationally specific problem-solving have also found mixed results. Generally speaking, analogue studies of depressed students have found that they have deficits in producing relevant solutions to social problems (Gotlib & Asarnow, 1979; Zemore & Dell, 1983; Marx & Schulze, 1991). Other studies have not found problem-solving deficits to be specific to depressed mood (Blankenstein *et al*, 1992).

Marx, Williams & Claridge (1992) conducted the first study of social problem solving in a clinically depressed group comparing them to a clinically anxious control group. There was evidence that depressed participants had deficits in problem-solving in both hypothetical and personal problem-solving. The observation that the depressed participants also had difficulty in generating solutions in the idealised third person scenarios was considered to disprove the negative self-schema hypothesis that depressed individuals may possess

the necessary problem-solving skills, but have difficulties in applying these skills to themselves. However, a deficit in generating relevant means was also apparent in the clinical control group and consequently was considered indicative of a general psychopathology deficit. In contrast, the depressed group also had lower effectiveness scores suggesting that poorer effectiveness of solutions was specific to depression. These difficulties seemed to arise in the early stages of the problem-solving process in generating potential solutions. This was in contrast to the difficulties that anxious subjects faced which seemed to primarily concern implementation of their solutions.

Problem-solving is also known to be problematic in individuals who have recently parasuicided (Evans, Williams, O'Loughlin & Howells, 1994; Schotte & Clum, 1987). In this instance poor problem-solving skill appears to be related to hopelessness rather than depression. A number of studies indicate that hopelessness mediates the relationship between depression and suicidal intent (Williams & Pollack, 1993); hopelessness is also observed to predict future parasuicidal behaviour (Schotte & Clum, 1987; Petrie, Chamberlain & Clarke, 1988) and completed suicide up to ten years later (Brown & Steer, 1989; Fawcett, Scheftner, Fogg, Clark & Young, 1990).

In summary, cognitive measures, such as attributional style, autobiographical memory and problem-solving have strong connections to mood disturbance in adults. Generally, adults who are depressed tend to attribute negative events to internal, stable and global causes and positive events to external, unstable and specific causes. They are more generic in their responses to cue words

on autobiographical memory tests, and in parasuicidal patients this is linked to poorer problem-solving abilities.

3.1.4. Cognitive factors in mood disturbance in adolescence.

The understanding of mood disturbance in adolescence is not yet as advanced as that in adults. To what extent are models of depressive thought derived from the study of adults applicable to adolescents?

Attributional or explanatory style is one area that has been extensively studied in children and adolescents. Seligman, Peterson, Kaslow *et al* (1984) reported on attributional style in 8 to 13 year olds. Those who attributed negative events to internal, stable and global causes were more likely to report depressive symptoms. Depressive attributional style also predicted depressive symptoms 6 months later suggesting that a dysfunctional explanatory style may be a risk factor for depression. Other studies report similar findings (Smucker, 1982; Kaslow, Rehm & Siegal, 1984; Nolen-Hoeksema, Girgus & Seligman, 1986, 1992). In addition to the confirmation that attributional style predicts depressive symptomatology, there is also evidence that depression predicts later attributional style and that attributional style not only deteriorates during depression but fails to recover after the depression has remitted. The same debate about the causal priority of attributions exists within the literature on adolescent mood disturbance.

Attributional style has also been studied in clinical samples of adolescents as well as non-clinical school samples. Curry & Craighead (1990 a) reported on

a small sample of 18 adolescent in-patients who completed the Children's Depression Inventory (CDI) and the KASTAN, the equivalent of the attributional style questionnaire for children and adolescents. They reported a significant correlation between self-reported depressed mood and attributional style. Depressed mood was positively correlated with attributions for positive events and negatively correlated with attributions for negative events. These correlations were in the same direction and slightly larger than those reported with non-clinical samples. Curry & Craighead (1990b) did not replicate this finding in a larger sample of 63 adolescents comparing those with clinical depression, conduct disorder or both. The adolescents with major depression differed from the others by having significantly lower attributional style scores for positive events. The more severe the self-reported depression, the lower the composite positive scores. The negative composite was not significantly related to either clinical or self-reported depression in this study. Curry & Craighead suggested that attributional style for positive events may be particularly salient for clinically depressed in-patient adolescents and be related to the increased frequency of anhedonia in this group compared to children who experience depression. The absence of a correlation with the negative composite contrasted with the data from non-clinical samples and from their previous report of a small heterogenous sample of in-patients.

McCauley, Mitchell, Burke & Moss (1988) reported on a sample of 108 seven to seventeen year olds; 47 of whom were currently depressed, 30 who had been depressed and 31 who had diagnoses other than depression. The depressed sample endorsed significantly lower self-esteem, were more hopeless, had more external loci of control and a more depressive explanatory

style than the depression-resolved and other diagnostic groups. In this sample, in the depressed group, the response on the composite positive was relevant, with the depressed group tending to attribute success to external, specific and unstable factors. The groups did not differ in their response to failure. This is the contrary pattern to that in adults where response to failure seems to be the most relevant dimension with regard to mood disturbance, and response to positive events seems to be most relevant in maintenance (Needles & Abramson, 1990; Edelman *et al*, 1994).

Autobiographical memory has been studied in adolescence, examining the relationship between prompt type (object, action, affect), response time and event age (Fitzgerald, 1980, 1981). However, the relationship between specificity and mood disturbance in adolescence is underexplored. Only one study has investigated these issues. Flammer & Rheindorf (1991) found no relationship between control-belief (related to attributional style) and autobiographical memory in a sample of late adolescents (aged 17-21). Control-belief was measured one year prior to the autobiographical memory test and its stability measures were low. It is therefore difficult to interpret the finding of no relationship between control-belief and specificity; this could indicate an absence of a relationship or it may reflect the unreliability of either the control-belief measure or the autobiographical memory test.

Depressed and hopeless feelings were both negatively correlated with specificity for negative cues i.e. individuals who were feeling depressed or hopeless were more general in their memory responses. However, this was only true in the "average control-belief" group. In the "low control-belief

group" more depressed participants were more specific and there was no relationship between specificity and hopelessness. Flammer & Rheindorf (1991) explain this by suggesting that the depression in the low control-belief group was the consequence of significant negative experiences which were the foci for their memory test results, whereas in the average control-belief group depression was not related to such experiences.

To support this interpretation they cite data which indicate that adolescents have a tendency to use single negative experiences to support control-beliefs of their own. Flammer, Kaiser, Grob & Luthi (1990) and Flammer & Kaiser (1991) described studies in which participants were asked to give spontaneous arguments for a given control belief of their own. Adults showed a tendency to use more specific autobiographical memory episodes in cases of stated control than` in cases of non-control. The reverse was true for adolescents. When adolescents stated that they felt unable to master a given task they argued more often from single negative experiences.

This raises the important issue of the nature between mood and memory in adolescents. In adults, no correlation is generally found between depression and specificity (Kuyken & Brewin, 1995; Williams & Dritschel, 1988). However, in one study of adolescents, Orbach, Lamb, Sternberg & Williams (1996) found evidence of a relationship between depression and specificity, with more depressed adolescents being less specific. The participants in this study were 50 adolescents who had either experienced some form of domestic violence (physical abuse or witnessed marital violence) or who had not. Assessment of autobiographical memory was from transcripts of interviews

with the adolescents answering questions from the Family Disagreements Questionnaire. Coding followed Williams (1986) categories. A positive correlation was observed between generic-categorical memories and depression. However, the authors also noted a reluctance to talk about traumatic experiences in the adolescents as indicated by the greater number of omissions after questions touching on such matters. Orbach *et al* identify this as a significant methodological problem citing Singer & Moffitt's (1992) observation that highly self-focused questions are more likely to elicit more general responses, and recommend the use of more neutral cues in subsequent research.

The present study provided an opportunity to examine whether emotionally disturbed adolescents were more specific, as Flammer & Rheindorf would suggest, or more generic, as indicated by the results of Orbach *et al.*

In contrast to autobiographical memory, problem-solving has been more extensively studied in adolescents. Platt, Spivack, Altman & Altman (1974), compared adolescent in-patients and controls on seven aspects of problem-solving. Controls obtained higher scores on optional thinking, a measure designed to capture ability to conceptualise alternative solutions to problems, social means-ends thinking and role taking. Within the patient group, significantly more of the solutions on the Means-Ends Problem-Solving Tests were considered to be ineffective or irrelevant means; they also generated fewer alternative solutions in keeping with their lower scores on the optional thinking task. These poorer performances were considered to be linked to the presence of psychiatric disturbance in this group of adolescents.

Rotheram-Borus, Trautman, Dopkins & Shrout (1990) reported on both attributional style and problem-solving in a sample of 77 female adolescents who had parasuicided, comparing them with two groups of non-parasuiciding females, one group who had psychiatric diagnoses and one who had not. The participants completed the KASTAN, the MEPS and the Pleasant Events Inventory. The parasuicide group differed from the others even when IQ and depression were controlled for. They demonstrated fewer alternatives for solving interpersonal problems and were more likely to report a wishful thinking style of coping in stressful situations. Across groups, depression was associated with significantly more dysfunctional attributional styles. Interpersonal problem solving and attributional style best distinguished the parasuicide group. However, adolescent parasuiciders tended to report significantly fewer dysfunctional attributions in positive situations than did psychiatrically disturbed non-attempters. Positive events tended to be perceived by individuals in the parasuicide group as being internal, stable and global. These results are not consistent with models of suicidal behaviour in adults, suggesting that applying models of depression to all suicidal adolescents is inappropriate. These findings emphasise the importance of studying the cognitive correlates of depression and suicidal adolescents specifically, rather than relying on applying adult models to a younger population.

The present study investigates the inter-relationships between depression, hopelessness, over-generality, attributional style and social problem-solving in an endeavour to further expand and model depressive thought in

adolescents. It has potentially important implications for psychotherapy of mood disturbed adolescents. If adolescents have difficulty in accessing specific memories they may find it difficult to utilise psychotherapy which focuses upon the recollection and reprocessing of such memories. Equally, if adolescents experience the same difficulties as adults in generating problem solutions as a consequence of lack of specificity, this would indicate a similar mechanism operating in the maintenance of problem solving difficulties as in adults with the consequence of prolonged mood disturbance. Attributional style variables may also be relevant in this context; if adolescents are stable, internal and global about their experiences they may not be motivated to engage in psychotherapy which emphasises that control over experiences is possible. A better understanding of adolescent mood disturbance will enable the development of therapeutic techniques and approaches which may ameliorate these problems. For example, Linehan's work (1993a, b) focuses explicitly on diagnosing interpersonal problems (problem-solving skills), by examining control in situations (attributional style) and applying new skills to solve them; it is a matter of great interest whether such approaches may also impact on methods of memory encoding and retrieval.

This study examines the following; firstly, it describes the relationships between three variables, autobiographical memory, problem-solving and attributional style in a sample of adolescents admitted for in-patient treatment. In an attempt to draw a more direct parallel with published work, established means of measuring the study variables will be employed in contrast to the work of Orbach *et al* (1996) and Flammer & Rheindorf (1991). Secondly, it describes the relationships between explanatory style, autobiographical

memory and two aspects of mood disturbance, namely depression and hopelessness, and so to reflect upon whether these two variables play a similar role in mood disturbance or whether they tap different types of cognitive sub-system as seems to be indicated from work in adults. Thirdly, it explores whether there is a link between specificity and problem-solving in adolescents with and without a history of parasuicide i.e. are adolescents with a history of parasuicide less specific in their recall of autobiographical memories and less able problem-solvers?

The investigation of cognitive processes reported here was designed primarily to inform the study of processes of change in a residential setting, which is considered further in chapter 5. However, this aim was limited by a modest level of agreement to participate (section 3.2.1). The findings therefore are also interpreted to a limited degree as a study of processes in adolescence but, given the selective nature of the sample, are of limited generalisability.

3.2. Method.

3.2.1. Participants.

Forty-six adolescents admitted to a residential service for adolescents were approached and asked to participate in the study. Of the 46 eligible to participate, 26 (57%) gave consent. The 26 who took part were compared with those who refused to examine whether they were untypical of admissions to the unit. They did not differ from the main sample on any of the main admission measures (internalising and externalising problems as rated by adolescents and parents; admission negative affectivity; family functioning as rated by adolescents or parents.)

Thirteen of the sample were male, 13 were female. Average age of the sample was 14.4 years, with a mean for males of 13.7 years and for females of 15.3 years. This represented a significant difference ($t(23)=-3.07$, $p=.005$).

3.2.2. Measures.

Attributional Style Questionnaire for Children (KASTAN): This is a 48 item forced choice questionnaire. Each item consists of a statement about an event followed by a choice of two potential self-statements that the young person could make about the event, for example:

A good friend tells you that he hates you.

A. My friend was in a bad mood that day.

B. I wasn't nice to my friend that day.

These choices cover all dimensions of explanatory style, internal/external, stable/unstable, global/specific. The choice of whether to use the children or adults version of the questionnaire was difficult as the adolescent participants were between the age ranges of both questionnaires. However, on examining both questionnaires the content of the KASTAN was felt to be the least unsuitable and more able to ensure that even younger participants could participate. The questionnaire yields three scores; a composite positive which indicates to what extent the participant is internal, stable and global about positive events, high scores on this dimension are considered indicative of a functional attributional style; a composite negative which indicates how internal, stable and global the participant is about negative events, high scores on this dimension are considered indicative of a dysfunctional attributional style; and overall attributional style which is computed by subtracting the composite negative from the composite positive score. Consequently, low scores on this domain indicate a dysfunctional attributional style. The composite scores are considered reliable for a 6 month period (composite positive, alpha=0.66; composite negative, alpha=0.50), (Seligman, Peterson, Kaslow *et al*, 1984)

Autobiographical Memory Test (AMT: Appendix 1). The AMT contains 10 cue words, five which are positive in tone (happy, safe, interested, successful, surprised) and five which are negative in tone (sad, angry,

clumsy, hurt (emotional), lonely). The adolescent was instructed to recall specific events in response to each cue word and had an opportunity to practise on three cue words with feedback before the test began. Latency to response was measured. If the first response to the cue was overgeneral, the adolescent was prompted to provide a specific instance (Can you remember a particular time when..?). If the subject did not produce a memory within 30 seconds, this was noted and the next word presented. All words were presented on flash cards. Specific first responses were scored, as was total specificity (including responses after the prompt), specificity in response to negative and positive cue words, latency to positive and negative words and overall latency. Responses were rated independently by two raters. Inter-rater reliability was high (kappa=0.92). Discrepancies were resolved by discussion and the agreed scores entered into the analysis.

Means-Ends Problem Solving Test (Appendix 1). In the original version ten problems were used. However, in many subsequent studies modified versions have been utilised and 10 problems was too long for current purposes. Five of the original problems were selected and checked for face validity as being suitable for the adolescent population. These problems are listed in Appendix 1 along with the instructions given to participants. The problems were read out to the participant and the administrator noted verbatim the adolescent's response to the problem. The answers were rated for number of means to solve the problem and for effectiveness. To score as a 'mean' the participant had to clearly indicate that the action was conducted by the participant. Mutual actions, for example, "they talked about it" were excluded as these could have been initiated by someone other than the actor.

Effectiveness was rated on a scale of 0, 1 or 2, where 0 is considered to be an ineffective solution, 1 an effective solution and 2 a very effective solution (Evans *et al*, 1994). Inter-rater reliabilities for means and effectiveness were calculated using an intraclass correlation coefficient (ICC). The reliability for both was satisfactory (Means ICC (1,2)=.69; Effectiveness ICC (1,2)=.90).

Beck Depression Inventory. as described in chapter 2.

Beck Hopelessness Scale. as described in chapter 2

Global self-worth: as described in chapter 2. This measure was not taken at the time of the other measures but was available from the adolescents' assessment data. Time lapse was no greater than four weeks between taking the self-esteem measure and participation in the study. It was assumed that as self-esteem is a relatively stable construct, values had not changed substantially between the two time periods.

Procedure.

Ethical permission was sought and granted from both the local NHS ethical committee and the Psychology Department ethics committee, University of Wales, Bangor. All adolescents admitted to the unit during the study period (April 1994 - August 1995) were requested to participate in the study. If they gave consent, permission for those under 16 to participate was requested either in person or by post from the parents.

At the start of the testing session adolescents were requested to complete the two measures of mood disturbance. Both measures were familiar to them from their assessment and it was explained that it was important to know their current mood state whilst completing the other measures. After this they were then presented with the three other measures which were counterbalanced for order across subjects and across gender. Only one adolescent had significant problems with the AMT saying that she was unable to recall any memories at all; her data were dropped from the analyses.

3.3. Results.

3.3.1. Descriptive statistics.

Data were analysed on 25 participants, 13 males and 12 females. Females were significantly older and more depressed than the males (Table 3.1).

Table 3.1: Means on mood variables for the sample and males and females separately.

Variable	Mean scores			Range
	Males	Females	Sample	
Age	13.7	15.3**	14.4	11-17
BDI	15.8	26.8*	21.1	1-47
BHS	10.1	13.5	11.7	1-19

* p<.05
** p<.01
*** p<.001

There were no significant differences on any of the other study variables between males and females. As a consequence of the significant age difference between males and females, age was explored as a relevant variable in the initial analyses. Age was only correlated with depression scores, older adolescents being more depressed ($r(23)=.55$, $p=.004$). However, as female adolescents were also more depressed, the possibility that this correlation was artefactual was explored by splitting the sample by gender and examining the

relationship between age and depression. Age was not significantly correlated with depression scores in males (r(11)=.53, p=.063) or in females (r(10)=.27, p=.393). Age was consequently not used as a covariate in subsequent analyses.

3.3.2. Autobiographical Memory Test (AMT).

Means and standard deviations for the AMT variables are reported in Table 3.2.

Table 3.2: Means and standard deviations of AMT variables.

Variable	Mean	s.d.
Specificity first responses	5.76	2.37
positive cues	2.84	1.24
negative cues	2.92	1.55
Total specificity (after prompts)	6.80	2.24
Latency (seconds)		
positive cues	11.75	7.22
negative cues	9.17	5.79

Latency to recall memories was related to the specificity of the memories recalled. In particular, adolescents who took longer to retrieve memories to a positive cue were less likely to retrieve a specific memory to a positive cue; likewise adolescents who took longer to retrieve a memory to a negative cue were less likely to retrieve a specific memory to a negative cue (Table 3.3).

Table 3.3: Correlations between specificity and latency scores.

	Pearson Correlation Coefficients	
	Latency positive cues	Latency negative cues
Specificity first response	r(23)=-.20	r(23)=-.37
Specificity positive cues	r(23)=-.41*	r(23)=-.19
Specificity negative cues	r(23)=.03	r(23)=-.41*
Total specificity	r(23)=-.44*	r(23)=-.54**

* p<.05
** p<.01
*** p<.001

The inter-relationships between specificity and latency were slightly different for males and females. These differences are displayed in Tables 3.4 (a) and (b) overleaf. Caution should be exercised in interpreting these results as a consequence of the small sample size.

Table 3.4 a: Correlations between specificity and latency scores for males

	Pearson Correlation Coefficients	
	Latency positive cues	Latency negative cues
Specificity first response	r(11)=.10	r(11)=-.58*
Specificity positive cues	r(11)=-.13	r(11)=-.37
Specificity negative cues	r(11)=.27	r(11)=-.60*
Total specificity	r(11)=-.33	r(11)=-.75**

* p<.05
** p<.01
*** p<.001

Table 3.4 b: Correlations between specificity and latency scores for females

	Pearson Correlation Coefficients	
	Latency positive cues	Latency negative cues
Specificity first response	r(10)=-.36	r(10)=-.19
Specificity positive cues	r(10)=-.57	r(10)=-.04
Specificity negative cues	r(10)=-.11	r(10)=-.25
Total specificity	r(10)=-.53	r(10)=-.28

* p<.05
** p<.01
*** p<.001

As predicted from previous research, recall of memories to positive cues took longer than latency to recall memories to negative cues ($t(24)=1.73$, $p=.048$ one tail).

3.3.3. Attributional Style Questionnaire.

Means and standard deviations for the KASTAN are displayed in Table 3.5.

Table 3.5: Means and standard deviations for the KASTAN.

Variable	Means	Standard deviation
Composite positive	9.67	3.53
Composite negative	10.54	3.82
Overall	-0.86	6.69

Participants' explanatory style for negative events was inversely related to explanatory style for positive events ($r(22)=-.66$, $p<.001$) in that participants who were internal, stable and global for negative events were external, unstable and specific regarding positive events.

3.3.4. Social problem-solving.

Means and standard deviations from the MEPS are shown in Table 3.6, overleaf.

Table 3.6: Means and standard deviations for the MEPS.

Variable	Mean	Standard deviation
Number of relevant means	12.36	5.39
Effectiveness of solutions	5.16	2.49

Adolescents who generated more means to solve problems generally produced more effective solutions to the problems ($r(23)=.80$, $p<.001$).

3.3.5. Inter-relationships between cognitive variables.

Autobiographical memory and attributional style.

Table 3.7 shows the relationship between AMT responses and attributional style. The most striking relationships here were observed between scores on the composite positive and specificity. Adolescents with a more dysfunctional attributional style for positive events, were more likely to be specific, particularly in their recall to positive cues.

Table 3.7: Relationships between attributional style and memory specificity.

	Pearson Correlation Coefficients	
	Composite positive	Composite negative
Specificity first response	r(22)=-.54**	r(22)=.33
Specificity positive cues	r(22)=-.54**	r(22)=.34
Specificity negative cues	r(22)=-.40	r(22)=.24
Overall specificity	r(22)=-.39	r(22)=.31

* p<.05
** p<.01
*** p<.001

Autobiographical memory and social problem-solving.

Neither number of relevant means nor effectiveness of problem solution were significantly related to specificity of recall as predicted on the basis of the adult data. However, adolescents who took longer to retrieve a memory to positive cues tended to generate fewer means to solve problems (r(23)=-.45 p<.05). This correlation was accounted for mostly by males for whom the relationship between number of relevant means and effectiveness were both significantly related to latency to retrieve memories to a positive cue word (Tables 3.8(a) and (b) overleaf).

Table 3.8 (a): Relationships between latency and problem solving for male participants

	Latency positive cues zero-order	Latency negative cues zero-order
Relevant means	r(11)=-.65*	r(11)=-.28
Effectiveness	r(11)=-.77**	r(11)=-.22

* p<.05
** p<.01
*** p<.001

Table 3.8 (b): Relationships between latency and problem solving for female participants

	Pearson Correlation Coefficients	
	Latency positive cues	Latency negative cues
Relevant means	r(10)=-.26	r(10)=-.01
Effectiveness	r(10)=-.13	r(10)=.28

* p<.05
** p<.01
*** p<.001

As illustrated in Table 3.8 (c) overleaf, the relationships between number of means and effectiveness with latency for positive cues in males remained when both depression and age were partialled out.

Table 3.8 (c): Relationships between latency for positive cues, means and effectiveness of problem solving controlling for age and depression.

	Latency to positive cues controlling for:	
	(i) depression	(ii) age
Relevant means	r(10)=-.73**	r(10)=-.77**
Effectiveness	r(10)=-.63*	r(10)=-.75**

* p<.05
** p<.01

Social problem-solving and attributional style.

There was no evidence of a relationship between number of means, effectiveness of solutions and explanatory style within the total sample. However, males with a more functional explanatory style for positive events generated more means on the problem-solving test (r(10)=.70, p=.011; females, r(10)=-.31, n.s.)

3.3.6. Mood and its relationship to cognitive variables.

Depression and hopelessness were highly correlated, with depressed participants also being more hopeless (r(23)=.75, p<.001).

Mood and attributional style.

Participants who were more depressed presented with a more dysfunctional explanatory style both for positive events ($r(22)=-.68$, $p<.001$) and for negative events ($r(22)=.64$, $p=.001$). Depressed participants were, therefore, more external, unstable and specific for positive events and more internal, stable and global for negative events. Participants who were more hopeless had a more dysfunctional explanatory style for positive events ($r(22)=-.60$, $p=.002$), but this was not significant for negative events ($r(22)=.33$, n.s.). However, this correlation between hopelessness and the composite positive was a consequence of the relationship between depression and hopelessness (partial correlation between BHS and composite positive controlling for BDI; $r(21)=-.17$, n.s.).

Mood and autobiographical memory.

Contrary to Orbach *et al* (1996) but similar to Flammer & Rheindorf (1991), there was a trend for those who were more depressed to be more specific in their first response to cue words ($r(23)=.40$, $p=.046$). This was primarily a consequence of their tendency to be more specific in response to negative cue words ($r(23)=.45$, $p=.025$). There was no significant relationship with positive cue words ($r(23)=.21$, n.s.).

Participants who were more hopeless were not less specific in their recall of memories as would be predicted from studies with adults ($r(26)=.34$, n.s.). Gender differences were also observable here. Only in males was specificity

for negative events related to hopelessness, with greater specificity for negative events being related to increased hopelessness ($r(13)=.68$, $p=.011$; females $r(12)=.12$, n.s.). In females increased latency to respond was related to lower hopelessness ($r(12)=-.59$, $p=.045$; males, $r(13)=.05$, n.s.).

Mood and social problem solving.

Neither hopelessness nor depression were significantly related to effectiveness or number of means on the MEPS (BDI and number of means, $r(23)=-.05$, $p=.828$; BDI and effectiveness, $r(23)=.04$, $p=.844$; BHS and number of means $r(23)=.15$,n.s.; BHS and effectiveness, $r(23)=.20$, n.s.).

3.3.7. Predicting mood from cognitive variables.

In the light of these findings an attempt was made to predict mood disturbance from the cognitive variables. Hierarchical regression analyses were used to predict depression and hopelessness scores separately.

For depression two models were tested. The first relied solely upon the cognitive variables. Attributional style for negative events was entered first as conceptually feeling "responsible" and "to blame", for negative events is hypothesised to be related to the onset of depressed mood. Attributional style for positive events was entered next as this is thought to relate to the duration of depressed mood, in that if pleasant events are believed to be beyond your control then you are more likely to remain susceptible to persistent depressed mood. Specificity in response to negative cues was entered last to assess

whether its contribution to depressed mood remained after controlling for attributional style. This model was significant ($F(3,20)=8.53$, $p=.0008$). Only attributional style for negative events and for positive events contributed significantly to the variance (Table 3.9).

Table 3.9: Prediction of depression scores from cognitive variables: contribution to the variance.

Variable	R^2change	significance
Attributional style (negative)	40.33%	p=.0009
Attributional style (positive)	11.86%	p=.0330
Specificity negative cues	0.04%	n.s.

The second model tested sought to examine whether the cognitive variables were able to predict depression scores over and above the contribution made by global self-worth. Conceptually, attributional style may precede global self-worth and therefore either order of variables would have theoretical justification. However, of interest here was whether measuring attributional style adds anything further to our understanding of depressed mood than solely measuring global self-worth. The origins of global self-worth were not the focus for study. The order of variables in this second model therefore, were global self-worth, attributional style for negative events, attributional style for positive events and specificity for negative cues. This model was significant ($F(4,18)=15.08$, $p<.0001$). Contributions to the variance are displayed in Table 3.10 overleaf.

Table 3.10: Prediction of depression scores: contribution to the variance

Variable	R^2change	significance
Global self-worth	63.36%	p<.0001
Attributional style (negative)	9.01%	p=.0189
Attributional style (positive)	2.87%	n.s.
Specificity negative cues	1.77%	n.s.

Using similar procedures to predict hopelessness, depression scores were entered first to control for its high correlation with hopelessness. Attributional style for positive events which was correlated with hopelessness, was entered second as it was hypothesised that feeling that positive events are beyond your control may lead to hopelessness for the future. Specificity for negative events was entered next as the recall of such events may be hypothesised to relate to hopelessness, and finally latency to recall to positive cues as slow recall for positive events may be hypothesised to relate to hopelessness. The overall regression equation was significant ($F(5,18)=6.16$, $p=.0017$). However, only depression contributed significantly to the variance (55.63%).

Mood and autobiographical memory under different conditions of perceived control.

To explore Flammer & Rheindorf's (1991) finding of different relationships between mood and memory specificity under different conditions of perceived control, further analyses were conducted. Flammer & Rheindorf contend that adolescents generalise from single aversive incidents under conditions of low perceived control, therefore, it was hypothesised that under such conditions adolescents would be more specific. Consequently the sample was divided into low control and high control sub-samples. This was achieved by performing a median split on the total attributional style score which for each adolescent is obtained by subtracting their composite negative score from their composite positive score. The complexities of the dimensions on the KASTAN make it difficult to make a binary decision into high and low control. However, the reasons for conducting the division in this way are as follows. The composite positive score provides a score for how much the adolescent feels in control of positive events i.e. the higher the score the more internal, stable and global their attributions for positive events. The composite negative provides a score for essentially how much to blame the adolescent feels for negative events and how stable and enduring these characteristics are about themselves. Consequently, the total attributional score (calculated by subtracting the composite negative from the composite positive) provides a dimension of controllability. Adolescents who score low on this dimension are generally those who feel to blame for negative events and that positive events are a matter of luck, are considered to be the low control group; and adolescents who score highly on this dimension, those

who feel that positive events are within their grasp because of positive personality traits and that negative events occur as a consequence of unstable, specific factors which are mutable and changeable, are considered to be high in control.

Splitting the sample by attributional style revealed that adolescents with a more dysfunctional attributional style were more specific than adolescents with a more adaptive attributional style ($F(1,23)=4.65$, $p=.042$; table 3.11); there was however, no effect of type of cue.

Table 3.11: Specificity scores to positive and negative cues under conditions of high and low control.

Specificity	Attributional Style	
	Dysfunctional	Adaptive
	Mean (sd)	Mean (sd)
Positive cues	3.33 (0.99)	2.39 (1.33)
Negative cues	3.42 (1.56)	2.46 (1.45)

Different patterns of correlational relationship with the mood variables within the two groups were evident as demonstrated in tables 3.12 (a) and 3.12 (b). Caution needs to be exercised in interpreting these correlations as splitting the sample reduces the sample size upon which the correlations are based increasing the risk that artefacts contribute to the differences in correlations observed between the two groups. This possibility was examined; however,

there was no evidence of the impact of outliers or a ceiling effect on the results. There were no significant differences between the sub-samples in the degree of variability on the relevant variables. Despite this conclusions based on these data remain tentative. Zero-order and partial correlations, controlling for the other mood variable, are reported. The partial correlations prove to be important as the high correlation between depression and hopelessness obscured some of the relationships between each individual mood variable and specificity under the different conditions. In adolescents with a dysfunctional attributional style, high specificity was related to higher depression scores and low hopelessness; whereas in adolescents with a more adaptive attributional style high specificity was related to higher depression scores and high hopelessness.

Table 3.12 (a): Relationships between specificity and depression in adolescents with dysfunctional and adaptive attributional styles.

	Pearson correlation coefficients with depression scores			
	Dysfunctional Attributional Style		Adaptive Attributional Style	
	zero-order	partial	zero-order	partial
Overall specificity	r(10)=.56	r(9)=.35	r(11)=-.19	r(10)=-.25
Specificity negative	r(10)=.60*	r(9)=.79**	r(11)=.02	r(10)=.61*
Specificity positive	r(10)=.24	r(9)=.16	r(11)=-.35	r(10)=-.25

* p<.05
** p<.01
*** p<.001

Table 3.12 (b): Relationships between specificity and hopelessness in adolescents with dysfunctional and adaptive attributional styles.

	Pearson correlation coefficients with hopelessness scores			
	Dysfunctional Attributional Style		Adaptive Attributional Style	
	zero-order	partial	zero-order	partial
Overall specificity	r(10)=.-.01	r(9)=.10	r(11)=.24	r(10)=.04
Specificity negative	r(10)=-.15	r(9)=-.65**	r(11)=.61*	r(10)=.78**
Specificity positive	r(10)=.21	r(9)=.10	r(11)=-.25	r(10)=.04

* p<.05
** p<.01
*** p<.001

Flammer & Rheindorf's assertion that adolescents may report memories on the basis of single aversive experiences was supported by an observation during testing. There was a tendency for some adolescents to generate the same specific memory in response to a number of cues, usually of the same valence. For example, "the day grandad died" in response to the cues 'sad' and 'angry'. This is linked to Renouf & Harter's work (chapter 2) which indicates that for some of the events experienced by young people which initiate depressed mood, anger is also present and is an appropriate emotion in the circumstances. This phenomenon of repeated specific memories was observed in 13 of the 25 adolescents.

3.3.9. Parasuicidal behaviour.

Adolescents with a history of parasuicidal behaviour were both more depressed and more hopeless (Table 3.13).

Table 3.13: Depression and hopelessness in parasuicide and non-parasuicide adolescents.

Variable	Parasuicide (n=10)	No parasuicide (n=15)
BDI	28.90	15.00**
BHS	15.00	9.14*

Participants with a history of parasuicidal behaviour were not generally less specific in response to cue words than those without such a history, nor were they taking longer to generate memories to positive than negative cues as is the case in adult samples. Those who had parasuicided were more likely to retrieve the same memory to more than one cue than those who had never parasuicided ($\chi^2(1)=5.06$, $p<.05$). This may be a consequence of the fact that they are more depressed and to retrieve a different memory may just take more effort. However, there were no differences between the two groups in terms of latencies to retrieve memories which would be expected to be slowed if this was the case.

Adolescents with a history of parasuicidal behaviour were not significantly poorer problem solvers than those without such a history (means, $t(23)=.22$, n.s.; effectiveness, $t(23)=.44$, n.s.).

3.4. Discussion.

The twenty five adolescents in this study presented with mild to severe depressed mood and clinically significant hopelessness and in these two ways were comparable to clinical groups which have been studied before. The first aim of the study was to explore the inter-relationships between the three cognitive variables, autobiographical memory, problem-solving and attributional style in a sample of in-patient adolescents. In common with studies in adults, latency to retrieve memories to positive cues was longer than to retrieve to negative cues. This finding confirms in adolescents that a key feature in mood disturbance is a greater difficulty in accessing positive memories. However, the absence of a control group prevents assessment of whether the recall of memories to negative cues is no different to that in non-clinical adolescent samples.

Adolescents with a more dysfunctional attributional style were more specific in response to negative cues. This is counterintuitive on the basis of the adult data as it might be expected that it would be individuals with maladaptive attributional styles, who were more mood disturbed that might have difficulty in recalling specific memories from their autobiography. However, the finding is compatible with Flammer & Rheindorf's work in older adolescents which will be discussed further later.

In contrast to the adult work, specificity was not related to problem solving; nor was a history of parasuicidal behaviour related to poorer social problem solving skills. This was something of a surprise and may indicate a

difference between adolescents and adults in this regard. However, there are two other possible explanations. Firstly, the relationship between specificity and problem-solving has only been observed in samples of parasuicidal individuals shortly after their attempt, whereas the sample here was a heterogenous sample in terms of length of time since the parasuicidal behaviour. Secondly, from the first day within the adolescent unit there is a heavy emphasis on problem-solving, both within individual counselling sessions and also within the therapeutic community meetings. Adolescents are clearly guided through stages of analysis and solutions of problems (Kiehn & Swales, 1995) and there was anecdotal evidence that they used this experience in answering the MEPS problems as a number of them commented on its similarity to the problems discussed in these meetings.

Slight gender effects were observed on a number of the cognitive variables. In males, an increased latency to retrieve a memory in response to a positive cue was related to poorer problem-solving in terms of both number of relevant means and effectiveness. This would be predicted on the basis of a theory proposing that utilisation of memory as a database is integral in the problem-solving process. Longer latencies may indicate difficulties in the access of the database or in the quality of information available in the database, resulting in poorer problem solutions based on memory. The presence of this effect in males raises the possibility that this process only operates in this way in males or, alternatively as the males were less depressed than the females, is operative only at moderate levels of mood disturbance. This latter explanation is unlikely as the effect remained when both depression, and age, a further difference between the males and females, were controlled. If this effect were

found to be reliably present in males, what may be the reasons for this? There is evidence that problem-solving styles differ between males and females in adolescence, with males utilising more active problem-solutions in contrast to females who rely more heavily on social support (Seiffge-Krenke, 1993). Such a problem-solving strategy could be hypothesised to rely more substantially on a memory based search than strategies involving consultation with others. Consequently, males with difficulties in the process of memory access may be impaired with respect to those with improved access in the generation of problem solutions. The reasons behind the differences in the development of coping styles are not yet fully understood but could include modelling of how to use the memory system as the basis for pragmatic solutions rather than for social discourse. Differences have been observed in the way in which mothers can encourage the utilisation of memory for either of these purposes (Tessler, 1986; 1991), an issue which will be discussed further in chapter 6. However, as yet, these differences have not been investigated in relation to gender. This remains an interesting possibility for future research.

The mood disturbance evident within the sample as a whole was reflected in their scores on cognitive style variables. Depressed mood was associated with a dysfunctional attributional style. In particular the more mood disturbed adolescents were more likely to be internal, stable and global about negative events. This is compatible with the evidence from normative adolescent samples and at least one sample of in-patient adolescents (Curry & Craighead, 1990) and is also consistent with the pattern of attributional style considered to be problematic in adult patient samples.

Depression was most effectively predicted from a combination of global self-worth and attributional style for negative events. Although, depression was predictable on the basis of attributional style for positive and negative events only, the model including global self-worth had better predictive value. The impact of attributional style for positive events no longer made a significant contribution to depression once global self-worth was controlled for. These results argue for the inclusion of all relevant variables in subsequent studies exploring the relationships between cognitive style and mood.

The finding that those with a history of parasuicidal behaviour are less specific in their recall of memories than those without such a history was not replicated. There are three possible explanations for this failure to replicate the adult findings. Firstly, there was a significant degree of variability in the frequency and recency of the parasuicidal behaviour. Unlike in previous studies, where all participants were interviewed soon after the parasuicidal event, in this case the length of time since the event and the frequency of the events were highly variable. Thus, the parasuicidal sample was heterogenous. Secondly, although those adolescents without a history of parasuicidal behaviour were significantly less depressed and hopeless than those with such a history, their level of mood disturbance was still significant; they were mildly depressed, but perhaps more significantly, their average level of hopelessness was above the clinically significant cut-off. Thirdly, specificity may not be related to parasuicidal behaviour in adolescents in the same way as in adults. There is some evidence that this may be the case, as the scores on some of the variables, for example specificity and number of

means on the MEPS, were more comparable to those reported for the control samples in adult studies (Evans *et al*, 1992; Williams & Dritschel, 1988).

In this adolescent sample there was a tendency for the more depressed adolescents to be more specific in their recall of autobiographical memories. This is in contrast to adult samples where no relationship is observed between depressed mood and specificity within groups. This finding is also in contrast to the work of Orbach *et al* (1996) who, although they did find a relationship between depression and specificity, it was in the direction expected from adult studies, that is that more depressed adolescents were more likely to be overgeneral in their responses. However, as Orbach and colleagues note, this effect may have been a consequence of the form of measure used. The adolescents in the study were interviewed about family life with a focus on the reporting of incidents of physical assault and marital violence. They observed that there was a greater tendency for omissions in response to those questions which focused on traumatic events and indeed there may have been a number of pressures on adolescents to be vague rather than specific; for example, they may have been concerned for the consequences for their parents if they described incidents of abuse or they may have been reluctant to disclose personal and potentially painful information to someone that they did not know well. This is in contrast to the adolescents in this sample who had received extensive psychotherapy, were currently in therapy and the investigator was one of the therapy team. It is possible that this combination of circumstances may have activated a mental set of retrieving specific memories in response to the prompts. It may be of interest to attempt to replicate the autobiographical memory findings in adults

who are in therapy in an attempt to ascertain whether similar demand characteristics impact on the type of memories reported.

The finding of greater specificity in more mood disturbed adolescents is similar to the findings of Flammer & Rheindorf (1990). They suggested that the relationship between mood and specificity of autobiographical memory responses is mediated by the adolescents' views about the controllability of the situations that they experience. Evidence of a similar kind was found here. The study reported here is not an exact replication of Flammer & Rheindorf's study; firstly, because it uses different measures and the exact relationship between their measure of controllability and the attributional style measure used here is uncertain; and secondly, because they studied a normative sample of adolescents who were somewhat older than those studied here. Given these differences it is therefore of particular interest that the findings here are somewhat similar. In adolescents with a more dysfunctional attributional style, that is those who attribute positive events to chance and feel to blame for negative events, increased specificity to negative cues is linked with increased depression and lower hopelessness. Whereas, in adolescents with a more functional attributional style, that is who feel in control of positive events and that negative events are a result of chance, increased specificity to negative cues is associated not only with an increase in depression but also an increase in hopelessness.

This observation is perhaps consistent with the hopelessness theory of depression. Adolescents who believe that they are in control of positive events yet have in reality experienced few such events may be more at risk for

feeling hopeless and depressed as they ruminate on their presumed failure to initiate such experiences i.e. their current experiences violate their expectations about the world. Those adolescents with a more dysfunctional attributional style do not expect to be able to influence positive events, in fact feel that they are to blame for many negative events and perhaps, therefore, do not deserve to experience positive events. They may feel depressed by ruminating on these events but not hopeless as their experience of life matches their attributional beliefs about the world. Alternatively, their attributions about the past are so negative that they use a generic recall strategy as a defence against hopelessness and consequently appear unrealistically hopeful about the future.

It is important to note that these comments are based on the interpretations of the partial correlation coefficients, as the zero-order correlations more closely resemble those of Flammer & Rheindorf, indicating no relationship between specificity and depression in adolescents with a more adaptive attributional style. These results serve, therefore, to emphasise the importance of utilising partial correlations to discriminate between the effects of two highly related mood states.

Flammer & Rheindorf's assertion that adolescents tend to utilise single negative instances to generate cognitive schemas for the future would lead to the expectation not only of increased specificity, as observed, but also to an increased availability or accessibility of such negative experiences. Post-hoc analysis of the data revealed some support for this prediction in that adolescents with a history of parasuicidal behaviour, who were more mood

disturbed than the remainder of the sample, had a tendency to report the same negative memory in response to more than one cue. This is consistent with the assertion that some memories were more *available* and more *salient* than others. On this analysis these memories are likely to be more relevant in schema formation. As the schemas are developed and utilised in early adulthood the memories that are used to formulate the schemas may become more difficult to access, resulting in the contrary pattern of memory retrieval in mood disturbance in adults. These issues will be discussed further in chapter 6.

3.5. Summary

This chapter describes the inter-relationships between three cognitive variables which have been demonstrated to be relevant in the understanding of mood disturbance in adults; attributional style, autobiographical memory and problem-solving. In the adolescent sample, attributional style and autobiographical memory were the key aspects of functioning for mood disturbance. In general, the relationship between attributional style and mood was as expected on the basis of previous work examining the relationship between beliefs about causality and depression. The findings on autobiographical memory were contradictory to the findings in adults, namely that the more depressed adolescents were more specific. These results support one of only two other studies in this area and make a contribution to our understanding of the role of autobiographical memory in the formation of cognitive schemas in adolescence. A more theoretical approach to these findings is located in chapter 6.

Chapter 4.

Clinical effectiveness of milieu therapy within the adolescent unit.

Abstract

This chapter reports on the clinical effectiveness of milieu therapy within the adolescent unit. It seeks to link the measurement of clinical effectiveness to aspects of the presenting problems of adolescents which the treatment is specifically designed to change; namely mood disturbance, resolution of problems identified by the adolescent and their family and improvements in self-esteem. Twenty-three adolescents who received an active dose of the treatment (6 week assessment package and four weeks of treatment) were observed to experience a reduction in depressed mood, trait anger and identified problems. Hopelessness and anxiety remained unchanged, as did self-esteem. Gender and a history of parasuicidal behaviour, which were important in determining the initial severity of mood disturbance (chapter 2), were not observed to mediate outcome.

4.1. Introduction.

Early studies of the effectiveness of adolescent units consisted of sparsely described custodial care and anecdotal case studies emphasising treatment success, with little description of the treatment process (Zimmerman, 1988). More recently there has been a recognition of the necessity of describing more fully the treatment process in order to determine appropriate outcome measures and to further understand the process of change. This study seeks to continue these developments by examining key variables in adolescent psychopathology and whether they change during admission to an adolescent unit.

In treatment evaluation there are two types of question that may be posed. The prescriptive question focuses on the most appropriate treatment for a given problem; for example, in the treatment of panic disorder whether imipramine or exposure treatment, or a combination is the most effective (Zitrin, Klein, Woerner & Ross, 1983). Such studies are generally designed, as far as possible, along the lines of double-blind controlled trials. The evidence from such studies provides fairly robust data on the relative effectiveness of certain treatments. The second question which can be asked with respect to treatment effectiveness is the predictive question; this question is generally asked when a double-blind controlled trial is impossible to conduct for either practical or ethical reasons. This question asks for whom is a particular treatment effective. This has been the design of the majority, if not all, treatment effectiveness investigations in residential services for adolescents. Studies of this type will now be briefly reviewed.

Ainsworth (1984) reported on the first 100 admissions to a regional adolescent unit which offered an eclectic treatment approach (this study was described in detail in chapter 2). The longer-term outcome of the first 70 of these hundred adolescents was reported by Pyne, Morrison & Ainsworth (1985). In the original study, outcome at discharge was measured by clinicians ratings of outcome. At that time the "neurotic" group had the best outcome, followed by the "psychotic" group, with the conduct disordered and mixed conduct and emotional disorders not doing so well. In the follow-up study outcome was measured using a semi-structured questionnaire to interview both the adolescent and his or her parents in their own home which was designed to assess the psychiatric and social functioning of the adolescent. Assessment of the psychiatric outcome focused on the main symptom at admission using a four-point scale of "unchanged" to "much improvement". Performance in four main areas, symptomatic disturbance, social functioning, sexual and work domains, were rated by reading through the responses to the questionnaire and making a global rating. Eighty-six percent of the adolescents and 96% of their parents participated in the study; information was also available from other agencies on those adolescents who had not agreed to participate. At follow-up (on average 26 months since discharge), 68% were either "some" or "much improved" in terms of the main symptom; 20% were "slightly improved" and 12% were "unchanged". The numbers of adolescents demonstrating "some" or "much improvement" varied according to admission diagnosis. Adolescents with a diagnosis of neurotic or conduct disorder more frequently demonstrated greater levels of improvement than those with psychotic or organic problems. Length of stay

and nature of discharge were reported as related to outcome but the nature of the association was unclear. Both the medium stay and planned discharge group showed trends towards good outcome, however, it was difficult to separate the variables as most of the planned discharges were also medium stay.

This study has a number of problems. Firstly, the measure used was of unknown reliability and validity and depended crucially on a clinician making an interpretation of the data obtained. How this was achieved is not certain. Secondly, the information used to make the ratings was based on information given to a member of the clinical team and as such may have been susceptible to halo effects. Thirdly, the length of time since discharge makes it difficult to ascertain whether or not it is reasonable to attribute any of the changes to the treatment, particularly given the rate of maturational change in adolescence. Finally, there was no information on factors, other than diagnosis, which may have been contributing to outcome.

The study by Turner, Dossetor & Bates (1986), also reviewed in chapter 2, focuses upon discharge placement as a measure of outcome. The aim of the study was to examine the relationship between diagnosis, age, length of stay, family dysfunction and the presence of associated psychiatric morbidity in the family with subsequent discharge placement. More than two-thirds of the adolescents were discharged home and this did not seem to relate to diagnosis. Stability of the home placement over the next 6 months was quite high and was not related to gender, age, diagnosis or length of stay. Whilst this study describes the aftermath of a period of in-patient care, there is no

attempt to relate placement at discharge with presenting problem. Whilst discharge to home is considered to be a "good" outcome this is not necessarily indicative of remission of difficulties, it may simply indicate commitment to the adolescent, sub-cultural views about not having children living at home and at best is likely to have a complex relationship to mental health. Its relationship to treatment effectiveness is unknown and therefore fails to illuminate any aspect of treatment process or outcome.

Firth (1992) evaluated the effectiveness of treatment for adolescents treated as either in-patients or out-patients in Manchester. Progress was evaluated over 6 months, with measures taken just after admission and 9-10 weeks later just prior to discharge. The in-patient sample consisted mainly of adolescents with neurotic disorders and mild conduct disorders. The out-patient team treated a wide range of problems including the more severe conduct disorders. The average age of the sample was 14 years, 11 months. There were more females in the in-patient sample, but overall there were more boys. There were no significant differences between the samples on demographic or family characteristics but the in-patient sample was more depressed than the out-patient sample. The outcome measure was Rutter's "A (2)" Scale (Rutter, Tizard & Whitmore, 1970), a 31 item scale administered to parents. At baseline, scores on this scale indicated a significant degree of psychopathology in both groups. At outcome, the average in-patient score fell by a half to below the cut-off for disorder, whilst that of the out-patients, despite falling by almost a fifth, remained above the cut-off for disorder. The total sample experienced a significant decrease on global measures of disorder over time, but the in-patients were significantly less disordered than out-

patients at outcome and experienced significantly more change. Parental, professional and consumer ratings of change confirmed the findings from the Rutter rating scale. The professional staff rated a higher proportion of in-patients as having greatly improved. All in-patients rated treatment as having been very helpful, whilst only 35.3% of out-patients did so.

Firth raises the issue of the reasons for the apparent superiority of the in-patient treatment. Firstly, the out-patient sample contained more seriously conduct disordered adolescents who are known to be less likely to benefit from treatment. Secondly, the impact of being removed from home for 5 days a week may act in two ways. Absence of the adolescent with serious mental health problems is likely to reduce the stress on both the adolescent and their family and so may serve to positively alter their perspective on the problem. The admission also removes the adolescent from the possible source of maintaining factors for the presenting problem.

Firth identifies the main threats to the validity of the study; absence of a control group fails to control for maturation and spontaneous remission. However, he suggests that these threats were offset by the use of standardised instruments; subjects acting as their own controls (all in-patients were in some sense "failed out-patients"); the short time-scale of treatment compared to the longevity of the disorders; and the homogeneity of both sub-groups with respect to familial disorder.

Rothery *et al* (1995) reported on the outcome of the adolescents described in a study of four UK adolescent units (Wrate *et al* 1995). Outcome was defined

on a 6-point scale on a number of treatment aims which had been specified by the treatment team. Outcome figures were reported in terms of percentages. Overall the outcome figures were good; however, there was some variation in outcome depending on diagnostic group and the particular treatment aim. For example, 100% of the adolescents suffering from schizophrenia demonstrated marked improvement in their vegetative symptoms. However, only 40% showed marked improvement in behavioural symptoms. In contrast to other studies, it was not possible to say which diagnostic group had the best outcome as this was dependent upon which treatment aim was considered. This study demonstrates the multi-faceted nature of outcome for adolescents admitted to residential psychiatric facilities. This is not surprising given that in all the studies mentioned, including this one, the adolescents who were admitted were reporting multiple problems.

King, Naylor, Segal, Evans & Shain (1993) reported on the outcome of 30 adolescents in terms of depression and self-esteem during a period of hospitalisation. The adolescents completed the Hamilton Rating Scale for Depression and Harter's Self-Perception Profile within two weeks of admission and just prior to discharge (mean length of stay was 59.0 ± 31.3 days). The in-patient group were significantly more depressed at admission than the matched control sample. However, they did not have an overall pattern of more negative self-perceptions. Only on the behavioural conduct and global self-worth sub-scales of the Harter did they have lower scores. Depressive symptoms decreased significantly across the hospitalisation period. There were no significant changes in global self-worth or specific self-perceptions across hospitalisation. However, in the sub-group of

patients who had a Hamilton score of less than 10 at discharge, there was a significant improvement in global self-worth. Correlational data revealed that decreases in depression severity were linked to increases in perceptions of competence in global self-worth, scholastic achievement, close friendship, romantic appeal, and job competence.

Two possible explanations for the absence of major changes in self-perception were advanced. Firstly, many of the self-perceptions of the adolescents may have been accurate assessments of their own ability and significant improvements in competencies may not be a realistic objective during a relatively short hospitalisation. Secondly, self-perceptions are considered to be well entrenched and individuals may be highly motivated to maintain a stable view of themselves (Swann, 1987). Therefore, to expect dramatic change in a short period is unreasonable and more lengthy treatment may be necessary to address issues such as global self-worth.

Methodological problems, as described in chapter 1, have plagued this form of research. A significant number of previous studies have been retrospective case note searches which rely on subjective clinical information. Alternatively, because of the practical difficulties of obtaining a control sample (chapter 1), outcome studies have been single sample studies using single indices of outcome, for example, "out of home placement" which have generally not been related to the form of treatment.

There has been little recognition that "residential treatment" is not a unitary phenomenon and that rather than being a *treatment* , it is a *mode* of treatment

delivery. Outcome studies often make this descriptive error and consequently fail to specify their "treatment" components and do not provide treatment manuals, as is the established custom in modern treatment trials. As a consequence of the practical difficulties in specifying residential treatment in this way (outlined in chapter 1) it is not really possible to conduct an outcome study proper. All that is achievable is a measure of the clinical effectiveness of a particular residential programme of treatment.

This study hopes to address some of those problems. It is prospective and utilises reliable and valid measures of the variables under study. It also employs multiple measures of outcome which are related to the specific aims of the treatment. At the end of chapter 1, four methodological strategies were outlined for investigating the effectiveness of residential services; examining the components of therapy; use of problem oriented case records; prediction of outcome across time; and exploring the reasons for the effectiveness of certain predictors of outcome. This chapter describes the second of these and lays the foundation for the last two which will be described more fully in chapter 5.

4.1.1. Psychological Processes of Change.

The type of study reviewed above focuses primarily on clinical outcome defined in ways viewed to be important by the researchers; symptomatic improvement, social functioning, and placement at discharge. All of these aspects of outcome are relevant to the question of the effectiveness of treatment delivered within a residential setting. However, they do not

illuminate our understanding of the problems of adolescents treated in this way nor do they contribute to our understanding of the reasons why some forms of treatment may be effective and others may not. Attempts have been made to address these issues in three studies (Kowitt e*t al*, 1989; Roberts *et al*,1992; Wells & Faragher, 1993) which were reviewed at some length in chapter 1 and will not be considered further here, other than to say that in all three studies links were observed between the type of treatment offered and either outcome or the factors that were hypothesised to relate to outcome. Kowitt *et al* (1989) observed that cognitive inefficiency (as defined by discrepancies between verbal and performance IQ) was related to a poor outcome; Roberts *et al* (1992) found that following treatment, which emphasised control and responsibility for behaviour, there were changes away from external and unknown sources of control in certain domains of functioning and for success outcomes; Wells & Faragher (1993) found resolution of identified problems following a treatment focused on problem-solving.

The identification of factors which enlighten the psychological processes at work in treatment is of crucial importance in both the understanding of psychological disturbance and in the design of treatments to ameliorate such difficulties. Considerable effort has been expended in understanding the psychological factors underpinning most major forms of mental illness; those relating to depression were considered at length in chapter 3. Similar work has been completed in anxiety and schizophrenia (Eysenck, 1992; Frith, 1992; Watts, Williams, MacLeod & Mathews, 1988). The study of adolescent psychopathology in this way is less extensive, although a

considerable amount is known of attributional style in adolescents (chapter 3). This study therefore seeks to examine the impact of milieu therapy on three aspects of psychopathology relevant to a heterogenous sample of adolescents presenting for treatment in a residential setting; mood disturbance, identified problems and self-esteem. Variables which relate to mood disturbance in both adults and adolescents are explored as possible predictors of outcome, hinting at psychological processes at work during treatment in chapter 5.

4.1.2. The adolescent unit.

The unit, its philosophical underpinnings and key aspects of its therapeutic milieu are explored in detail elsewhere and will not be described in detail here (Kiehn & Swales, 1995). The main components of the treatment are individual counselling; small group therapy which varies in type from structured skills based groups, e.g. anxiety management to small group psychotherapy; family therapy; education, delivered on site in a flexible individualised way; and milieu therapy which in the unit has a very specific meaning, combining understanding and support with therapeutic confrontation as described in Kiehn & Swales (1995). The regime at the unit is specifically adopted with four key aims in mind; to resolve identified problems; to resolve mood disturbance; to improve self-esteem; and to improve family relationships. The study described here focuses on the first three of these. Monitoring change within families proved to be beyond the scope of the current study, although family functioning was measured at admission and was explored as a predictor of outcome (chapter 5).

In line with concerns that in such a complex treatment experience outcome is also likely to be complex, and in the light of the findings in chapter 2 and those of other workers, a number of measures of outcome were employed; in particular the viewpoint of the adolescent, his/her family and clinicians were all considered. Given the complexity of the treatment regime, the absence of treatment specification for parts of the treatment and the lack of adherence data for all components, this study is an evaluation of the clinical effectiveness of these treatments delivered in this mode. As such, it can not claim to generalise to other treatment settings or modes of delivery. In contrast to other studies, with the exception of Wells & Faragher (1993), a treatment "dose" is specified. Previous experience and examination of team outcome figures over a number of years has identified that adolescents who stay for at least 10 weeks are likely to gain most from the milieu.

Three predictions concerning the outcome of adolescents who had received an active dose of the treatment were made; firstly, that they would report reduced levels of mood disturbance; secondly, that both adolescents and their parents would report reduced levels of problem severity; and finally, the adolescents would report enhanced self-esteem.

4.2. Method

4.2.1. Participants

The 23 adolescents in this study were a sub-sample of those from the cross-sectional study described in chapter 2. They had all received what is considered to be an active dose of the treatment (10 weeks). Six of the original sample stayed for assessment only (length of stay less than 70 days) and were excluded on the grounds that they had not received an active dose of the treatment. A further ten of the original sample were still resident in the unit at the time the study finished and discharge data was not available. A further seven did not complete the discharge questionnaires. These twenty-three adolescents were compared to those adolescents who were admitted into the clinical effectiveness analyses. There were no significant differences between those entered into the analyses and those who were not, in terms of age, severity of behaviour problems, severity of identified problems or mood disturbance.

4.2.2. Measures

Problem Lists: A list of problems, and their severity, identified by the adolescent and parents independently, prior to admission, were completed again at discharge. Adolescents and parents were asked to rerate the severity of the problem that they had described at admission.

Beck Depression Inventory. A 21 item questionnaire which measures the severity of depressed mood (described in chapter 2, section 2.2.2).

Beck Hopelessness Scale. A 20 item questionnaire that asks about current feelings of hopelessness (described in chapter 2, section 2.2.2).

Beck Anxiety Inventory. A 20 item questionnaire asking about symptoms of anxiety in the past week (described in chapter 2, section 2.2.2).

Spielberger State-Trait Anger Inventory. A 44 item questionnaire which assesses the type and severity of anger experienced and the method of expression of anger (described in chapter 2, section 2.2.2).

Rosenberg Self-Esteem Questionnaire. This is a 10 item questionnaire which has been used extensively with adolescents and others and provides a measure of global self-esteem. It was used in preference to the Harter because it is shorter and minimised the number of questionnaires the adolescent had to complete. Scores on both positive and negative scales range from 1 to 20; on the negative scale a score of 1 indicates good self-esteem, a score of 20, poor self-esteem; on the positive scale, a score of 1 indicates poor self-esteem, a score of 20, good self-esteem. At admission, the Rosenberg scores correlated highly with the global self-esteem scale of the Harter (positive items on the Rosenberg, $r(24)=.80, p<.001$; negative items on the Rosenberg, $r(24)=-.82$, $p<.001$)

4.2.3. Procedure

Prior to admission both parents and adolescents completed the problem list sheets. During the month long assessment period (weeks 3 to 6), adolescents completed all mood and self-esteem measures. It was hoped that by leaving the completion of these measures until later any initial effects, solely attributable to decreasing levels of stress on entering treatment from a problematic home environment or conversely increased stress in response to admission, would be minimised.

Prior to discharge all mood measures, the Rosenberg self-esteem questionnaire and the problem lists, with the responses of the adolescent or the parent at pre-admission typed in for re-rating (see appendix 1) were readministered in the two weeks before discharge. In some cases due to sudden discharge, questionnaires were sent by post; in some cases these were not returned. In most cases it is likely that this was because the adolescent was unhappy with their discharge.

4.3. Results

There were three hypotheses under test. That adolescents who had completed 10 weeks of treatment would, firstly, have reduced levels of mood disturbance at treatment termination; secondly, would report a resolution of identified problems; thirdly, would have enhanced self-esteem.

4.3.1. Mood disturbance.

As described in chapter 2, all mood measures were intercorrelated and it was therefore important to control for this in the analyses. Repeated measures MANOVA was used initially to analyse the mood results. Two different sets of analyses were conducted; in the first, gender was entered as a between subjects factor, because in the cross-sectional study severity of mood was greater in the females; in the second, history of previous parasuicide was entered as a between subjects factor as in the cross-sectional study, participants who had parasuicided in the past also had different patterns of mood disturbance. It was not possible to enter both factors into the same analysis because of too few participant numbers.

In the repeated measures MANOVA with depression, anxiety, hopelessness, state anger and trait anger, as within subject factors, and gender as the between subjects factor, the main effect for gender just failed to reach significance ($F(5, 21)=2.79$, $p=.056$). The main effect for time was significant ($F(5, 21)=2.94$, $p=.048$), with discharge mood scores being lower

than those at admission (table 4.1). The interaction term was not significant ($F(5, 21)=1.20$, n.s.).

Table 4.1: Means and standard deviations of mood measures at admission and discharge.

Variable	Admission		Discharge	
	Mean	s.d.	Mean	s.d.
BDI	23.52	13.51	17.57	14.80
BHS	10.33	6.84	10.76	6.12
BAI	17.05	10.10	17.71	14.36
State anger*	56.29	8.87	54.05	8.83
Trait anger*	52.91	10.01	46.57	14.23

* Note: Scores for state and trait anger are T scores. For the analysis scores on all measures were converted to T scores.

Repeated measures MANOVA with depression, anxiety, hopelessness, state anger and trait anger as within subjects factors, and with history of parasuicidal behaviour as the between subjects factor, demonstrated a trend for those with a history of parasuicidal behaviour to experience greater mood disturbance ($F(5, 18)=3.00$, $p=.055$). The main effect for time ($F(5,18)=1.690$, n.s.) and the interaction term ($F(5, 18)=0.517$, n.s.) were not significant.

As a consequence of the significant main effect for time in the first MANOVA analysis, univariate analyses were performed to explore this result further.

Depression: Repeated measures ANOVA, with gender as the between subjects factor, demonstrated a significant effect for gender ($F(1, 20)=8.16$, $p=.010$), with the females reporting greater depressed mood, and for time ($F(1, 20)=7.70$, $p=.012$), with discharge depressed mood being lower than that at admission. The interaction was not significant ($F(1, 20)=.88$, $p=.797$); males and females did not benefit differentially from treatment (Table 4.2).

Table 4.2: Mean depression scores at admission and discharge for males and females.

Variable	Admission		Discharge	
	Mean	s.d.	Mean	s.d.
Depression.				
Males	16.11	11.48	9.33	11.41
Females	29.46	12.08	23.85	13.76

Repeated measures ANOVA, with history of parasuicidal behaviour as the between subjects factor, demonstrated a significant effect for parasuicidal behaviour ($F(1, 17)=4.68$, $p=.045$), with those with a past history of parasuicidal behaviour reporting greater depressed mood, and for time ($F(1, 17)=5.85$, $p=.027$), with depressed mood scores being lower at discharge. The interaction term was not significant ($F(1, 17)=.48$, $p=.497$) indicating that history of parasuicidal behaviour did not impact on the effectiveness of treatment for depressed mood (Table 4.3).

Table 4.3: Mean depression scores at admission and discharge for adolescents with and without a history of parasuicidal behaviour.

Variable	Admission		Discharge	
	Mean	s.d.	Mean	s.d.
History of parasuicidal behaviour				
Present	32.38	13.55	24.50	15.52
Absent	18.18	11.54	13.82	13.82

Anxiety: Repeated measures ANOVA, with gender as the between subjects factor, demonstrated a significant effect for gender ($F(1, 21)=7.81$, $p=.011$), indicating that, as described in chapter 2, the females were more anxious than the males. Neither time ($F(1, 21)=.07$, $p=.797$) nor the interaction term ($F(1, 21)=2.78$, $p=.110$) were significant.

Repeated measures ANOVA, with history of parasuicidal behaviour as the between subjects factor, demonstrated a significant effect for parasuicidal behaviour ($F(1, 17)=13.02$, $p=.002$), with those with a history of parasuicide being more anxious than the others, a non-significant effect for time ($F(1, 17)=.02$, $p=.893$) and a non-significant interaction term ($F(1, 17)=.53$, $p=.476$).

Hopelessness: Repeated measures ANOVA, with gender as the between subjects factor, demonstrated non-significant effects of both gender (F(1,

21)=3.34, p=.082) and time (F(1, 21)=.07, p=.794). The interaction term was also non-significant (F(1, 21)=.23, p=.634)

Repeated measures ANOVA, with history of parasuicidal behaviour as the between subjects factor, demonstrated no significant effects or interaction.

State Anger: Repeated measures ANOVA, with gender as the between subjects factor, demonstrated non significant main effects of both gender (F(1,20)=.13, p=.718) and time (F(1,20)=.88, p=.358). The interaction term was also non-significant (F(1,20)=.00, p=.993). Repeated measures ANOVA, with history of parasuicidal behaviour as the between subjects factor, demonstrated no significant effects or interaction.

Trait Anger: Repeated measures ANOVA, with gender as the between subjects factor, demonstrated a non-significant effect for gender (F(1,21)=.108, p=.108), a significant effect of time (F(1, 21)=7.39, p=.013), with trait anger decreasing at treatment termination and a non-significant interaction term (F(1, 21)=.11, p=.738; Table 4.4). Repeated measures ANOVA, with history of parasuicidal behaviour as the between subjects factor, demonstrated no significant effects or interaction.

Table 4.4: Mean trait anger scores at admission and discharge for males and females.

Variable	Admission		Discharge	
	Mean	s.d.	Mean	s.d.
Trait anger.				
Males	49.78	12.65	41.89	14.58
Females	56.36	7.57	50.21	13.43

A subsidiary hypothesis was that, given the focus on resolution of problems and interpersonal conflict within the milieu, ability to control anger would increase during the admission. This was not observed to be the case ($t(22)=.91$, $p=.371$).

Clinical significance of the changes.

To further assess the significance of the changes observed in depression and trait anger, the *reliable change index (RCI)* was calculated. Jacobsen & Revenstorf (1988) argued that to classify a participant in a psychotherapy trial as having recovered to a clinically significant degree, the change should be large enough to ensure that it could not be a result of measurement error. They went on it describe the RCI and its calculation. The calculations here are based on the formula in Tingey, Lambert, Burlingame & Hansen (1996) and incorporate the change in the calculation suggested by Christensen & Mendoza (1986).

Reliable change in depression scores was observed in 17.4% of the sample; reliable change in trait anger scores was observed also in 17.4% of the sample. Reliable change on at least one of the two variables was observed in 30.4% of the sample.

In summary, with regard to hypothesis one, mood disturbance improves during treatment; in particular, reported levels of depressed mood and trait anger improve; no changes were reported in anxiety, hopelessness or state anger. Although both gender and history of parasuicidal behaviour were related to mood disturbance in some cases, neither of these factors interacted over time to influence change during treatment.

4.3.2. Problem Severity.

Hypothesis 2 predicted that treatment would result in an improvement in problems identified by the adolescent and his or her family. These data demonstrated that there were significant differences in the mean severity rating of identified problems at admission and discharge both by adolescents ($t(8)=3.29$, $p=.011$) and parents ($t(6)=2.47$, $p=.049$; table 4.5 overleaf). In both cases the mean problem severity decreased over time.

Table 4.5: Means and standard deviations of problem severity at admission and discharge.

Variable	Admission		Discharge	
	Mean	s.d.	Mean	s.d.
Problem Severity				
Adolescent (n=10)	13.85	6.36	9.67	4.30
Parent (n=8)	17.90	5.30	12.17	7.39

Low returns of the problem sheets after discharge make it necessary to be circumspect in interpreting these findings, as it is possible that those returning their discharge questionnaires had benefited more from treatment. This hypothesis was checked by examining the mood levels at admission and discharge of those who returned problem sheets and those who did not. No significant differences in severity of mood disturbance was found between those who returned the problem sheets and those who did not.

4.3.3. Self-Esteem.

Hypothesis 3 predicted that treatment would result in an improvement in self-esteem. These data which were analysed by a repeated measures ANOVA, with gender as the between subjects factor (females had reported lower levels of self-esteem in the cross-sectional study), demonstrated no significant effects on the Rosenberg positive score either for gender ($F(1, 7)=.51$,

p=.500), time (F(1, 7)=1.46, p=.266) or the interaction (F(1, 7)=2.86, p=.135). There were no significant effects on the Rosenberg negative score either for gender (F(1, 7)=.50, p=.504) or time (F(1, 7)=.00, p=1.000) or for the interaction (F(1, 7)=.10, p=.757; table 4.6). These results indicate that on a measure of global self-esteem there is no evidence of improvement at treatment termination.

Table 4.6: Means and standard deviations at admission and discharge for the Rosenberg.

Variable	Admission		Discharge	
	Mean	s.d.	Mean	s.d.
Rosenberg				
Positive items	11.33	2.78	13.11	3.03
Negative items	14.56	2.83	13.67	3.73

It has been noticed elsewhere that absence of change in mean self-esteem scores often conceals significant individual variation (Block & Robins, 1993). Further statistical analysis of these data was not possible to explore this possibility owing to small numbers. However, from viewing these data it is clear that individual variation in the pattern of change of self-esteem is also evident (see Table 4.7). What is of note about those individuals in which self-esteem deteriorated during admission, is that in all three cases discharge was rather precipitate following serious conduct problems. In the other six cases discharge was planned and conduct problems were less significant in

the clinical picture. These observations are qualitative only and on only a small number of cases and require further exploration.

Table 4.7: Changes in Rosenberg self-esteem scores between admission and discharge for nine of the study participants.

Participant	Positive items		Negative items	
	admission	discharge	admission	discharge
1	15	15	12	14
2	7	9	19	14
3	10	13	16	16
4	15	15	10	7
5	9	8	18	20
6	12	10	13	17
7	13	15	14	13
8	9	14	14	13
9	12	14	15	16

Note: increases in the positive item scores indicate an improved self-esteem whereas increases in the negative item score indicate a worsening of self-esteem.

This study measured three aspects of outcome; mood disturbance, problem resolution and self-esteem. It is of interest to what extent these outcome measures correlate. Pearson product moment correlations indicated high levels of correlation between the four mood questionnaires; Beck Depression Inventory, Beck Anxiety Inventory, Beck Hopelessness Scale and the Spielberger State Trait Anger Inventory. These results were analogous to

those presented in chapter 2 in the cross-sectional study. Also, as indicated in chapter 2, there were a number of significant correlations between the mood measures and self-esteem. Adolescents ratings of problem severity correlated highly with their reported anxiety, hopelessness and self-esteem, measured on the Rosenberg negative scale. Parental ratings of problem severity were significantly correlated with adolescents reported anxiety. These correlations are displayed in Table 4.8.

Table 4.8: Correlations between discharge measures.

	BDI	BAI	BHS	State anger	Trait anger	Rosen-berg +	Rosen-berg -	Prob. adol.	Prob. family
BDI									
BAI	.65*								
BHS	.78***	.69***							
State anger	.70***	.46*	.67**						
Trait anger	.61**	.75***	.57**	.62**					
Rosen-berg +	-.80***	-.35	-.59*	-.49*	-.49*				
Rosen-berg -	.82***	.48*	.66**	.65**	.61**	-.81***			
Prob. adol.	.22	.73*	.68*	.10	.62	-.60	.83*		
Prob. family	-.03	.87*	.62	-.13	.80	-.66	.80	.83	

Note: * p<.05
** p<.01
*** p<.001

4.4. Discussion

This study aimed to explore whether three aspects of adolescent psychopathology would be improved by a period of treatment in a residential service for adolescents. Improvement was noted in two areas; adolescents and their parents reported a decrease in the severity of the problems that they had identified at admission; and on self-ratings, adolescents reported an improvement in depressed mood and trait anger. No changes were reported in anxiety, hopelessness, state anger and self-esteem. Gender and past parasuicidal behaviour which were known to relate to severity of mood disturbance (chapter 2) were not related to treatment effectiveness.

There are a number of limitations to this study which will be described before exploring the results further. Firstly, the single sample pre-post design employed here is a weak design. It leaves open the question of whether it was the milieu, or time itself, which effected the observed changes. By itself, such a study can tell us little about the reasons for change. The absence of any follow-up period prevents a direct ascription of the clinical improvements to the treatment; admission to the unit removes the adolescent from a stressful home environment and this in itself may be sufficient to produce some clinical improvement. This would be a valid treatment effect but would only be an indirect consequence of the treatment. Secondly, the adolescents entered into the analyses reported here were a sub-sample, constituting half of the adolescents admitted to the unit during the period of the study. As such, they may be considered unrepresentative of adolescents admitted to the unit. However, those excluded from the analyses did not differ significantly from

the study sample on any of the key variables. Thirdly, the small sample numbers in the analyses of self-esteem and identified problems are more likely to be susceptible to factors relating to treatment; adolescents who felt positive about their treatment experience are perhaps more likely to return their problem questionnaires which ask specifically about whether admission was beneficial, and as such the results may be likely to be favourable and unrepresentative of the whole sample. Additional analysis indicated that adolescents who had not returned their problem questionnaires were no more mood disturbed on discharge than those who had. However, given the generally low correlations between the mood measures and the problem resolution measure it is not safe to conclude that those who did not return their problem questionnaires were equally content regarding problem resolution.

Given these caveats, what is evident is that this sample of adolescents showed some clinical improvement during admission to the unit. The decrease in depressed mood was predicted on the basis of a number of the treatment components; employment in constructive activity, a focus on the active resolution of problems, challenge of dysfunctional self-referent cognitions ("I am useless"; "I always fail at everything I do"), and discussion of painful feelings from the past. All of these components are ingredients of treatments known to be effective in the resolution of depressed mood (for example, Cognitive Behaviour Therapy, Beck *et al,* 1979). The reduction in depressed mood by approximately half a standard deviation is not as large a change as that reported by King *et al* (1993) who observed a reduction of approximately one standard deviation in the scores on the Hamilton Rating Scale for Depression. Overall, the mean levels for depression remained in the mildly

depressed ranges; because the males were less depressed at admission their depressed mood reduced to within the normal range at discharge, whilst for females, although experiencing a reduction in depressed mood, their mean scores remained in the moderately depressed range. The proportion of the sample for whom the change can be considered reliable was also small.

The decrease in trait anger, also of approximately half a standard deviation, is of interest. The aim during treatment is not to suppress feelings of anger but to focus on using more constructive methods of dealing with situations which elicit anger and coping with angry feelings. An increase in coping skills to address anger may result in the paradoxical effect of feeling like a "less angry" person, or the impact of utilising the skills may be a reduction in the experience of angry feelings. Renouf & Harter (1993) reported that in adolescents, depression is experienced as a blend of sadness and anger, and in this sample this was observed to be the case with depressed mood and trait anger being highly correlated. Consequently, the reduction in trait anger may be secondary to the reduction in depression. This latter explanation is possible given that participants scores on anger control did not increase significantly during the admission. However, only in one participant was a reliable change in depression scores accompanied by a reliable change in trait anger scores.

The reduction in the severity of identified problems is also of interest since the problems identified by the adolescent and family form the focus for the adolescents' care plan. The care plan is formulated as a series of problems with identified objectives and strategies for achieving the objectives outlined.

The individual counselling revolves around these specified target problems and referral to other forms of treatment within the unit. For example, anxiety management, and the strategies employed in other aspects of the treatment, for example family therapy, will be determined by the specification of the problems in the care plan. It is therefore expected that, in those who respond to treatment, there would be a reduction in severity of the identified problems. This reduction in the severity of identified problems forms a partial replication, in a different environment of the study by Roberts *et al* (1993).

A decrease in anxiety as a consequence of treatment had been predicted but this was not observed. Either the treatment has no impact on anxiety levels or there is a genuine fall during treatment but this is masked by an increase in anxiety as the discharge date approaches. Elevated levels of anxiety at discharge are perhaps not so surprising, as leaving the unit is a major life change which adolescents often articulate as being worrisome. Adolescents often express concern that they will be unable to cope having left the unit. Methods of managing these anxieties is a significant focus of the pre-discharge treatment. However, only successful coping with the experiences that they fear is likely to reduce these anxieties. It may be that measuring this variable some weeks after discharge may discriminate between this possibility and the alternative which is the need to improve treatment programmes for anxiety.

Hopelessness may not change because many adolescents do objectively come from situations where any major change in the near future would be considered unlikely. It is worthy of note that ratings of severity of problems

at discharge as rated by adolescents and parents were significantly correlated with anxiety, hopelessness and self-esteem, which indicates that problem severity is related to some aspects of mood disturbance which do not change during admission (Table 4.8). This raises the possibility that evaluation of the effectiveness of an intervention may reflect aspects of current mood level which may be more directly related to uncontrollable aspects of the environment, for example, returning home to live with a parent with mental illness, than to variables within the control of the treatment team.

The absence of any change in global self-esteem is analogous to the findings of King *et al* (1993) although using a different measure of self-esteem. King *et al* (1993) argued that a change in global self-esteem is not to be expected during a short admission because, firstly, the time is too short to effect a significant change in competencies upon which it is hypothesised self-esteem is based and secondly, because individuals may be motivated to maintain a stable view of themselves (Epstein, 1973). Block & Robins (1993) examined self-esteem across time in a sample of 91 adolescents from age 14 to 23. In general, the mean scores for self-esteem remained relatively constant over time, but these aggregate scores concealed significant individual differences with some adolescents' self-esteem becoming worse, or improving on one dimension but worsening on the other (Table 4.7). The analysis in this study, albeit of a small number of participants, hints at interesting individual differences as described by Block & Robins. In a larger study it would be important to explore these differences in the context of mood disturbance, resolution of problems and response to treatment.

Evans, Noam, Wertlieb, Paget & Wolf (1994) reported on self-esteem, as measured with the Harter Self-Perception Profile in a clinical sample of adolescents. Unsurprisingly global self-worth scores were lower overall in the clinical sample compared to the control sample. A further difference was also observed; within the non-clinical sample global self-worth scores were equivalent to the average competency scores on the other eight dimensions of self-esteem measured by the questionnaire. By contrast, in the clinical sample, global self-worth scores were lower than the total mean for the other eight domains. The non-patients therefore demonstrated a better capacity for weighing their strengths and weaknesses in formulating their global self-worth. The in-patients however, were not as proficient at integrating their competencies in various domains when formulating their global self-worth. Evans hypothesised that this may indicate more generalised all-or-nothing thinking of adolescents with psychopathology, or be indicative of an earlier phase of normal development which is present in the clinical sample as a consequence of delayed development arising from the psychopathology. Alternatively, this could indicate that global self-worth is a "read-out" from a schema based on another source of information, for example, from a working model of attachment, and is not a summary of integrated information across domains. This model would be compatible with Burhans & Dweck's (1995) view on the development of achievement based helplessness in young children. They argue that possession of invariant trait concepts about the self are not necessary for the development of helplessness; all that is required is for the child to be able to believe that the self is an object of contingent worth. Thus, children who learn from significant others that their worth is

dependent, i.e. contingent upon certain actions, beliefs or achievements, are vulnerable to the development of helplessness.

This discrepancy, observed by Evans *et al* , in a clinical and non-clinical sample of adolescents seems to indicate that global self-esteem is particularly vulnerable in depressed mood, unlike perceptions of competency in specific domains. Why should global self-esteem become "unhooked" from perceptions of competency in depressed mood? One possibility is that in depressed mood adolescents reflect more on past negative experiences, exacerbating self-blame and lowering global self-worth. In non-depressed mood adolescents may reflect more on their current capabilities than on past failures. This view would be supported by research into depressed mood and autobiographical memory responses under conditions of low perceived control where it is observed that adolescents tend to focus on single negative instances to make judgements on their future likelihood of control (Flammer & Rheindorf, 1991). The findings reported in chapter 3 also indicated that the more mood disturbed adolescents tended to focus on single negative experiences. This may cause difficulties when responding to questions about self-worth as this may activate negative self-schemas. More restricted prompts about abilities in specific areas may be less susceptible to this effect.

The findings of Evans and colleagues are interpreted in the light of a theory which states that global self-worth is a function of competencies in particular domains and the relative importance of these domains to the self. It is possible, however, that global self-worth is in fact prior to judgement of competency in other domains and is dependent upon early attachment and

social experiences. It may be hypothesised that securely attached adolescents would have the mental capacity to explore their competencies and to evaluate them effectively in much the same way that securely attached infants and toddlers are observed to be able to more effectively explore their external physical environment. Adolescents who are unresolved with respect to attachment would perhaps be more likely to discount the importance of their own competencies or, not having explored them, make global judgements on the basis of insufficient evidence. In such cases, global self-worth would not be expected to relate directly to competency scores. These ideas will be explored further in chapter 6.

4.5. Summary.

This study hypothesised that adolescents who had experienced an active dose of milieu therapy would benefit from admission in three ways; they and their parents would report lower levels of problem severity; the adolescents would score lower on standardised measures of mood; and an improvement in self-esteem would be observed. Adolescents demonstrated improvements in some of these areas; namely a reduction in severity of identified problems as rated by the adolescents themselves and by parents; and reductions in depression and trait anger scores. Significant individual variation rather than overall improvement in self-esteem was observed. This study reinforces the view of other studies, most notably Rothery *et al* (1995), that outcome is multi-faceted and that improvement in one area may not link directly to improvements in other areas. Studies which rely on single outcome measures are therefore likely to be least informative about the therapy process investigated.

Chapter 5

Predictors of treatment outcome.

Abstract

This study reports on variables which predict outcome of treatment of adolescents in a residential setting. Four models were explored as possible predictors of outcome; symptomatology as reported by adolescents, parental perceptions of symptomatology, discrepancy between adolescent and parental perceptions of symptomatology, and adolescent cognitive style. Some support was found for the adolescent perceptions of symptomatology and cognitive style models. Post-hoc correlational analyses lent some support to the discrepancy model.

5.1. Introduction

In investigating the effectiveness of residential services for adolescents, as indicated in chapters 1 and 4, it has not been possible to answer prescriptive questions about the most appropriate treatment for adolescents with severe psychopathology. Predictive studies, which seek to describe those factors which are associated with good and poor outcome, have formed the basis of most of the work in the field.

Of the published studies, a wide range of variables predictive of outcome have been described. From these studies, three major clusters of variables have been identified. Firstly, a number of factors relating to the adolescents themselves have been related to treatment outcome; for example, diagnosis, and symptom pattern. It has been demonstrated in a number of studies that adolescents with certain forms of psychopathology do less well in treatment. In particular, adolescents with psychotic disorders or organic illnesses have a poorer outcome than those with neurotic conditions (Ainsworth, 1984; Lewis *et al*, 1980) and in some studies adolescents with conduct problems or aggressive behaviour have poor outcomes (Ainsworth, 1984; Gabel & Schindledecker, 1992). Secondly, family function has also been shown to relate to outcome (Pfeiffer & Strzelecki, 1990). Variables relevant here are both past and current quality of the family relationships, but also more pragmatic factors such as involvement in the treatment. However, it is likely that the latter is associated with the quality of family relationships. Thirdly, treatment variables have been shown to relate to outcome, for example, length of stay and aftercare.

Although, there are a large number of studies looking at the prediction of outcome of adolescents in a residential treatment setting, there is little overall coherence in the data. Each chooses to examine those variables of interest to the investigator and there are few direct replications. In an attempt to derive a coherent statement on those variables known to be reliably associated with outcome, Pfeiffer & Strzelecki (1990) conducted a meta-analysis of 34 published investigations. They found, as expected, some degree of variability in the robustness of predictor variables. For example, with regard to length of stay, in seven studies which reported on this variable, three reported a positive relationship between length of stay and outcome and four reported no relationship at all. The variables most strongly related to outcome from their analysis are displayed in Table 5.1.

Table 5.1: Weighted predictive values from the meta-analysis of Pfeiffer & Strzelecki (1990).

Variable	Weighted Predictive Value	Number of Studies
Treatment (various)	1.00	4
Aftercare	1.00	4
Organicity	-.80	4
Symptom Pattern	-.75	13
Diagnosis	-.67	10
Intelligence	.30	7

The methodological criticisms of this work have been described more fully elsewhere (Pfeiffer, 1989; chapter 1) and are not of direct relevance here. However, Pfeiffer (1989) specifically comments on the necessity for employing more powerful statistical procedures to fully comprehend the inter-relationships between predictors and outcome.

Previous research has tended to analyse the data in one of two ways. The first, as exemplified by Ainsworth (1984), Pyne *et al* (1985) and Rothery *et al*, (1995), is simply to comment on the percentages in each diagnostic category who were considered to have good or poor outcomes. It is not possible from this research to know whether the observed differences are statistically significant or indeed whether associated third variables are accounting for the observed pattern of results. The second style of analysis utilises simple statistical calculations to compare the differences between a 'good' and 'poor' outcome group, as defined by some criterion variable, on the predictors of interest. For example, Ghuman *et al* (1989) compared their improved and unimproved groups on a number of variables using t-tests; Gabel & Schindledecker compared adolescents placed at home versus those placed out-of-home on a number of variables using the χ^2 test; and Kowitt *et al* (1989) examined the impact of predictor variables on outcome using zero-order and partial correlations. Very few outcome studies looking at prediction of outcome have examined the data using more powerful statistical procedures as recommended by Pfeiffer (1989). One exception is the study by Wells & Faragher (1993), reviewed in chapter 1, which assesses outcome, judged by a number of raters (adolescents, parents, and referrers), across a number of time

points. However, although this study examined the differences in outcome between those who completed and those who terminated treatment, it did not attempt to predict outcome from pre-admission or admission variables.

However, more sophisticated statistical procedures are only part of the solution. In addition it is important to develop and test appropriate theoretical models of outcome (as outlined at the end of chapter 1). In the light of the findings outlined in chapter 2 and 3, four models were developed relating admission variables to outcome. The first variable of interest was symptomatology, in particular the severity and type of symptoms. This presented an interesting problem given the differences in the perceptions of parents and adolescents on both the severity and the type of presenting symptoms. Consequently, two models were developed; the first attempting to predict outcome on the basis of the adolescent's view of their symptomatology, the second, identical in structure, utilising the parent's view of symptomatology. The third model was based on the hypothesis that radical differences in perception between adolescents and their parents may be a key factor in outcome. Such discrepancies may simply at one level make it difficult to agree on treatment goals and, as such, parents and adolescents would not be co-operating in treatment together. This would be likely to result in a poor outcome. Of course if this model were predictive, it may simply be the case that the discrepancy in problems is an indicator of the extent of the family breakdown which is likely to be mirrored in the severity of the problems, and as such, related to outcome. All three of these models incorporated adolescents' and parents' views of family functioning, as it was hypothesised that perception of family function would be related to outcome.

The fourth model to be tested is the "cognitive style" model which seeks to relate those variables described in chapter 3 to outcome. It was hypothesised that all of the cognitive variables described may be related to outcome. Attributional style is a measure of an adolescent's judgement of their responsibility for negative and positive events in their life. Believing that negative experiences are all one's own fault and that positive events are beyond one's control may be a belief that militates against an active participation in treatment, partly as it may impact negatively on motivation, and also because it seems to the adolescent that it is impossible to act to change his / her circumstances.

Autobiographical memory responses were also hypothesised to relate to treatment outcome. Overgenerality in autobiographical memory responses has been shown to relate to outcome in depressed adults (Brittlebank *et al*, 1992). On the basis of this previous research with adults one might hypothesise that overgenerality would cause difficulties in deriving benefit from a treatment which focuses on recall of past memories and restructuring these, such as the reattribution of blame and responsibility following sexual abuse. It may also cause difficulties in treatments which centre on problem-solving in the here-and-now, for example, in the confrontation process utilised within the milieu (Kiehn & Swales, 1995). However, the analysis in chapter 3 suggests that adolescents who were the most mood disturbed had a different problem in autobiographical memory; they were overly focused on well rehearsed negative memories. This may also interfere with treatment as it may absorb cognitive

capacity reducing that available for engaging in treatment. It remains an open question which aspect of memory might predict treatment response.

Poor interpersonal problem-solving ability would also be expected to relate negatively to outcome in a milieu which encourages active problem solution as far as is reasonably possible. In adults, it has been suggested that it is autobiographical memory induced problem-solving deficits which result in parasuicidal behaviour (Evans *et al*, 1992).

The above models were tested in relation to two outcome measures, negative affectivity, which it will be recalled from chapter 2 is a composite measure of four main aspects of mood disturbance (depression, hopelessness, anxiety and anger), and outcome as judged by the team (described in detail in the Method section). This study seeks to advance the prediction of outcome in residential services for adolescents by utilising hierarchical multiple regression procedures to explore the influence of admission variables on outcome. Post-hoc data exploration was by correlational analyses.

5.2. Method

5.2.1. Participants.

All adolescents admitted to the adolescent unit during the study period were considered eligible for entering into the analysis, provided data at the relevant time points were available. In the analyses of models one to three, 25 of the original sample had discharge data available. This sample did not differ significantly from the 21 for whom discharge data was not available on any of the predictor variables. In the analysis of the cognitive model, 17 of the original 25 participants had discharge data available. This group did not differ significantly from the remaining 9 on any of the predictor variables, with the exception of internalising problems ($t(24)=2.43$, $p=.023$), with the group in the analysis scoring higher on internalising problems than those excluded from the analysis. The analysis of the results from this sample must be interpreted with this in mind.

5.2.2. Measures.

Outcome Variables.

Negative Affectivity: This measure was calculated at discharge as a composite of T-scores on all mood measures; Beck Depression Inventory, Beck Hopelessness Scale, Beck Anxiety Scale, and Spielberger State-Trait Anger Inventory.

Team Outcome: Following assessment, a treatment plan is designed in consultation with the team and the adolescent. Identified on this treatment plan are the main problems of the adolescent. At this stage these target problems are rated on a scale of 1 to 3 depending on their severity (mild, moderate, severe). Objectives and interventions are specified on the treatment plan. At discharge the team meets to rate the outcome on the target problems on a seven point scale as outlined in table 5.2.

Table 5.2 Outcome categories.

Outcome Score	Description
-1	Problem is worse
0	No change in the problem
1	Slight improvement
2	Intermediate between 1 and 3
3	Moderate improvement
4	Intermediate between 3 and 5
5	Significant or major improvement

In rating these categories the controllability of the problem is taken into consideration. It is, therefore, possible to score as significantly improved on a dimension, even if little improvement has been made, if further improvement has been prevented by something beyond the control of the adolescent or the treatment team. At the end of treatment an overall outcome score is obtained by dividing the sum of the outcomes on all problems by the number of

problems. Two examples are given below in table 5.3 (the names have been changed):

Table 5.3: Examples of outcome calculations.

Problem	Score (5=significant / major improvement)
Example 1.	
1. James has self-destructive thoughts / behaviour	5
2. James has a poor self-image	4
3. James has fears about going to school	5
4. James misses his grandfather and feels guilty about his death	4
Overall outcome	4.5
Example 2	
1. Sandra experiences pervasive sadness relating to concerns for her family and peer relationships.	5
2. Sandra often feels angry and expresses this by withdrawing.	3
3. Family conflict.	0
4. Difficulties in expressing her point of view.	2
5. Difficulties being positive about her future.	4
6. Problems interacting with her peers.	5
7. Worry about her health.	5
Overall outcome	3.4

\Predictor Variables.

Internalising and externalising behaviour problems on the YSR and CBCL, negative affectivity, family functioning and global self-worth, as described in chapter 2 section 2.2.2..

Attributional style for positive and negative events, specificity of autobiographical memory response and means and effectiveness of the Means Ends Problem-Solving Test, as described in chapter 3 section 3.2.2..

5.2.3. Procedure

Admission variables were all taken during the first six week assessment module. Discharge questionnaires were given to the adolescent in their last two weeks before discharge, or sent by post after discharge. Team outcomes were judged in the weekly review meetings after the adolescent was discharged.

Statistical procedure: Hierarchical multiple regression procedures with theoretically derived order of entry of independent variables were employed to analyse the data (Cohen & Cohen, 1983). Caution must be exercised in the interpretation of the results of the analysis as the ratio of participant numbers to predictors in this sample is small. Generally a ratio of 10:1 of N to predictor variables is considered acceptable, although higher ratios have been recommended (Howell, 1992). The ratios in these analyses are less than 10:1.

5.3. Results

5.3.1. Correlation between outcome measures.

There was a small but non-significant correlation between team outcome and negative affectivity at discharge (r (21)=-0.32, p=.164). This justified utilising each of these variables as distinct outcome measures testing each of the prediction models separately.

5.3.2. Multiple regression analyses.

(i) Adolescent Perceptions of Symptomatology Model: Three predictor variables were of interest here; internalising and externalising behaviour problems and adolescent perceptions of family pathology. Admission negative affectivity was entered first to control for the fact that admission negative affectivity was correlated with discharge negative affectivity (r(25)=.68, p<.001). This also controlled for the fact that females adolescents were more mood disturbed than males, hence gender was not entered into the regression procedure. The three variables were entered hierarchically into the analysis after admission negative affectivity. Internalising behaviour problems on the YSR were entered first as it was felt that these would be the most significant predictors of outcome after negative affectivity, particularly as adolescents report these as the most salient feature of their experience. Secondly, externalising problems on the YSR were entered, as absence of behaviour control is also perceived as distressing by adolescents. Finally, perceptions of family dysfunction were entered into the equation. A convincing theoretical

argument exists for entering the family function data first into the equation, as from a family systems perspective the family dysfunction would be regarded as causally prior to the symptomatology. However, experiencing high levels of symptomatology may also create family dysfunction or modify perspectives of family function. It was decided that the latter would be the model tested here, to see whether family dysfunction added anything to the prediction of outcome once symptoms had been controlled for, rather than a direct test of the family dysfunction hypothesis. This model was tested with both discharge negative affectivity and team outcome as the discharge measures.

With regard to negative affectivity the overall regression equation was significant ($F(4, 20)=20.72$, $p<.0001$), with admission negative affectivity, internalising and externalising problems all contributing significantly (Table, 5.4).

Table 5.4: Adolescent perceptions of symptomatology model: contributions to the variance.

Variable	R^2 change	Significance
Negative Affectivity (admission)	46.31%	p=.0002
YSR Internalising problems	22.91%	p=.0005
YSR Externalising problems	10.64%	p=.0032
Family function	0.69%	n.s.

All variables contributing significantly to discharge negative affectivity had positive beta coefficients, indicating that the higher the score on the admission variable, the higher the discharge negative affectivity score i.e. that adolescents with more severe admission pathology were less likely to do well. Post-hoc correlational analyses reflected these findings (Table 5.5).

Table 5.5: Post-hoc correlational analyses

	Pearson Correlation Coefficients		
	Internalising Problems	Externalising Problems	Family function
Negative Affectivity (discharge)	r(23)=.81***	r(23)=.60**	r(23)=.30

** p<.01
*** p<.001

With regard to team outcome, the overall regression equation was non-significant (F(4,23)=.32, p=.86).

<u>(ii) Parental Perceptions of Symptomatology Model:</u> Four predictor variables were entered here; admission negative affectivity, gender, internalising and externalising problems (as rated by the parents) and family dysfunction (as rated by the parents). Gender was entered into this equation as parents perceived there to be gender differences in symptomatology. This would not necessarily be controlled for by entering admission negative affectivity first

into the regression procedure because of the low correlations between adolescent and parental perceptions of symptomatology. Gender was therefore entered second into the regression followed by the other three variables in the same order as for the adolescent symptomatology model.

The regression equation predicting discharge negative affectivity was significant (F (5,13)=3.36, p=.036). Contributions to R^2 are shown in Table 5.6. It can be seen that the only significant predictor is admission negative affectivity. All other predictors added no significant contribution and only served to reduce the F value.

Table 5.6: Parental perceptions of symptomatology model: contributions to the variance.

Variable	R^2 change	Significance
Negative affectivity (admission)	46.31%	p=.0013
Gender	2.67%	n.s.
CBCL Internalising	2.62%	n.s.
CBCL Externalising	4.37%	n.s.
Family function	.37%	n.s.

The regression equation predicting team outcome (variables entered: gender, internalising problems, externalising problems, and family function) was non-significant (F(4,15)=.91, p=.48).

(iii) Discrepancy in symptomatology model: This model focused on whether differences between adolescents and parents in the judged severity of problems, predicted outcome. This necessitated the computation of three new variables; discrepancy on internalising problems, calculated by subtracting parental measure from the adolescents measure using T scores; discrepancy on externalising problems, calculated by subtracting parental from adolescents scores using T scores; and discrepancy of family function, calculated by subtracting parental from adolescent scores, raw scores were used here as the scaling was the same for both adolescent and parental scores. The order of entry of variables was the same as for models 1 and 2.

With regard to discharge negative affectivity, the regression equation was significant ($F(4,14)=5.05$, $p=.0099$). Contributions to the R^2 are shown in Table 5.7, overleaf. As can be seen, only admission negative affectivity contributed significantly to outcome, all other variables only served to decrease the F value.

Table 5.7: Discrepancy in symptomatology model: contributions to the variance.

Variable	R^2 change	Significance
Negative affectivity (admission)	46.31%	p=.0013
Internalising discrepancy	4.03%	n.s.
Externalising discrepancy	7.97%	n.s.
Family function discrepancy	.74%	n.s.

Post-hoc correlational analyses revealed some modest correlations between the discrepancy variables and discharge negative affectivity (Table 5.8).

Table 5.8: Post-hoc correlational analyses

	Pearson Correlation Coefficients		
	Discrepancy Internalising	Discrepancy Externalising	Discrepancy Family function
Negative Affectivity (discharge)	r(18)=.45*	r(18)=.58**	r(18)=.26

* p<.05

** p<.01

With regard to team outcome (variables entered: gender, discrepancy on internalising, discrepancy on externalising, and discrepancy on family functioning) the regression equation was non-significant ($F(5,13)=1.69$, $p=.2071$). There is, therefore, no support for model 3.

(iv) Adolescent cognitive style model: This model explored whether variables relevant to mood disturbance in adolescents also predicted treatment outcome. The model was again used with both discharge negative affectivity and team outcome as outcome variables.

With regard to discharge negative affectivity, admission negative affectivity was entered first to control both for the correlation between admission and discharge mood measures, and for gender differences in mood level. Following this, global self-worth was entered into the equation as this is a significant variable in the prediction of depressed mood (chapter 3); followed by attributional style for positive events, which in adults is observed to be related to the duration of hopelessness (Needles & Abramson, 1990); attributional style for negative events, which has a major role in the prediction of depressed mood (chapter 3); specificity of autobiographical memory responses, as specificity has been observed to predict response to treatment in adults; and finally, effectiveness of problem-solving which was hypothesised to relate to the ability to utilise treatment.

The regression equation predicting discharge negative affectivity was significant ($F(6,9)=14.69$, $p=.0003$). Contributions to R^2 are shown in Table 5.9, overleaf.

Table 5.9: Adolescent cognitive style model: contributions to the variance.

Variable	R^2 change	Significance
Negative affectivity (admission)	43.80%	p=.0052
Global self-worth	18.50%	p=.0255
Attributional style (+)	0.11%	p=.8531
Attributional style (-)	21.65%	p=.0027
Specificity	6.02%	p=.0337
Effectiveness of problem solving	0.69%	p=.4327

Small numbers in this analysis, as a consequence of discharge data not being available for all adolescents who participated in the study outlined in chapter 3, created concerns about this model because of the small participant to variables ratio. Consequently, the model was rerun with only the four variables which contributed significantly to the prediction of discharge negative affectivity. This revised regression equation was also significant ($F(4,11)=23.38$, $p<.0001$). Contributions to R^2 are in Table 5.10, overleaf.

Table 5.10: R^2 contributions to revised cognitive style model.

Variable	R^2 change	Significance
Negative affectivity (admission)	43.80%	p=.0052
Global self-worth	18.46%	p=.0255
Attributional style (-)	18.40%	p=.0055
Specificity	8.82%	p=.0113

The beta coefficients in the final regression equation were negative for global self-worth and attributional style for negative events, indicating that low self-esteem and, contrary to prediction, a tendency to attribute negative events to external, unstable and specific causes predicts a poor outcome. The beta coefficient for specificity of autobiographical memory responses was positive, indicating that the more specific adolescents were, the more likely they were to have a poor outcome.

Post-hoc correlational analysis yielded some interesting findings in the light of the regression results (Table 5.11, overleaf).

Table 5.11: Post-hoc correlational analyses

	Pearson Correlation Coefficients	
	Negative affectivity (discharge)	p
Attributional style (+)	r(14)=-0.43	p=.098
Attributional style (-)	r(14)=0.12	p=.670
Specificity	r(15)=0.55	p=.021
Specificity (-)	r(15)=0.63	p=.007
Specificity (+)	r(15)=0.32	p=.205
Global self-worth	r(23)=-0.64	p=.001

It is of interest that, given its role in the prediction of discharge negative affectivity, attributional style for negative events does not correlate with discharge negative affectivity. This indicates the presence of a suppressor effect. Its role in the prediction of outcome only comes to the fore after admission negative affectivity and global self-worth have been accounted for. In terms of memory, the correlation shows the specific effect is mostly accounted for by higher specificity of negative memories predicting poor outcome.

Some caution must be exercised in the interpretation of the results of this model. Attributional style for both positive and negative events was correlated with internalising behaviour problems (positive events r(25)=-.51, p=.008; negative events r(25)=.49, p=.011) as was specificity (r(26)=.63, p=.001), and this model may merely be capturing variance in outcome associated with

symptom breadth and severity. As a consequence a post-hoc model was tested to eliminate this possibility. Order of entry of variables was as follows; admission negative affectivity; internalising behaviour problems; global self-esteem; attributional style for negative events; and specificity in response to negative cues. The overall regression equation was significant ($F(5, 10)=67.69$, $p<.0001$). The contributions to the variance are shown in Table 5.12. The relationships between the variables, as indicated by the beta coefficients, remained as in the other models i.e positive beta coefficients for YSR internalising problems and specificity and negative coefficients for attributional style and global self-worth. The suppresser effect for attributional style remained.

Table 5.12: R^2 contributions to post-hoc cognitive style model.

Variable	R^2 change	Significance
Negative affectivity (admission)	43.80%	p=.0052
YSR internalising problems	23.87%	p=.0085
Global self-worth	10.42%	p=.0342
Attributional style (-)	17.07%	p=.0001
Specificity	2.0%	p=.0255

A further test of this model was made by testing the significance of each of the variables when entered last in the regression procedure. All variables, YSR internalising, global self-esteem, attributional style and specificity, continued

to contribute significantly to the variance in discharge negative affectivity in this procedure.

Neither of the cognitive style models predicted team outcome (original cognitive style model; $F(6,9)=.932$, n.s.; revised cognitive style model; $F(4,11)=.319$, n.s.).

5.4. Discussion

This study is the first of its type to utilise multiple regression procedures to predict outcome of adolescents in a residential treatment setting. It is also unique in its examination of the relationship between cognitive style variables and outcome. Two outcome measures were employed in this study, negative affectivity at discharge and outcome on target problems as judged by the team. The models tested were only successful in predicting discharge negative affectivity.

The first finding of note is the low correlation between the two outcome measures. One possible explanation for this is that the team outcome measure is unreliable. The team may make more positive judgements about the effectiveness of the therapy than is actually warranted by the clinical gains made. This may be partly attributable to the team being influenced in their ratings by the controllability of the problem. Consider the situation of an adolescent who has made significant progress with a communication problem within the family, but no further progress can be made because the parent is unable to make the changes necessary for a complete resolution of the problem. In these circumstances, the team will judge this to be a good outcome on the grounds that both the team and the adolescent made as much progress as was reasonably possible in the given context. However, the adolescent's mood state at discharge is more likely to be determined by whether or not the problem has been completely resolved rather than the fact that partial resolution only was possible. Methods for overcoming this difficulty have been suggested in the most recent Health Advisory Service

report which recommends separating controllability as a factor, to be judged prior to intervention, which can then be used as a co-variate in subsequent analyses (NHS Health Advisory Service, 1995).

One other explanation is that team outcome may have been predictable from other variables not measured in this study. In other studies which have employed team judgements of outcome (Ainsworth, 1984; Pyne *et al*, 1985) outcome has been related to factors such as diagnosis, duration of problem, family history of psychiatric illness. ICD 10 diagnosis was available for all adolescents in this study, but the small numbers in each group precluded the utilisation of this variable in the regression equations. It would be of interest to explore the possibility that variables which predict outcome judged in terms of accomplishment of treatment goals, may not be those which would predict outcome based upon another criterion, for example, symptomatology. Differing perspectives on problems have been noted in studies of child and adolescent psychopathology for a number of years (chapter 2) and therefore it is likely that perspectives on outcome will also differ.

Prediction of discharge negative affectivity was only achieved with two of the four models tested, the adolescent perception of symptomatology model and the cognitive style model. There were some interesting correlations between the discrepancy measures and discharge negative affectivity, but these variables did not contribute significantly to the prediction of outcome. However, these preliminary findings indicate that the exploration of conflict between adolescents and parents about their perceptions of the problems may be worth further enquiry.

The adolescent perception of symptomatology model indicated that the severity and breadth of the adolescent's symptoms (both dimensions are included in the rating) are significantly related to outcome. As predicted, the more severe the presenting problem and / or the greater the diversity of symptoms, the more likely the adolescent is to report higher levels of mood disturbance at discharge. This was the case both for internalising and externalising symptoms. Externalising problems continued to predict mood disturbance at discharge even after severity of internalising problems had been entered into the analysis. This observation indicates the importance of directly addressing these aspects of adolescents problems, as they are not solely a product of an underlying mood disturbance or depressive equivalent and have a significant impact on outcome. These findings are in keeping with other studies which have found that both severity of psychopathology (Ghuman *et al*, 1989; Gossett *et al*, 1977; Kowitt *et al*, 1989) and aggressive behaviour (Gabel & Schindledecker, 1992) are predictive of outcome of adolescents in residential settings.

It is of interest that the internalising and externalising scales should add to the prediction even after controlling for a wide range of mood variables. One possible reason for this is simply the construction of the scales. The Achenbach behaviour scales cover an extensive range of symptoms and behaviours which are beyond the scope of the mood scales employed here. Consequently, they may more accurately distinguish between adolescents who have differing severities of presenting problems. For example, an adolescent who has had few problems during childhood and early adolescence and then

suffers the death of a parent, or a traumatic divorce is likely to experience significant mood disturbance which would be evident on the negative affectivity measure; they would also be likely to score highly on the depression and perhaps somatic subscales of the Achenbach YSR but that would be all. A second adolescent who has a history of multiple rejections, chaotic family background, abuse, and has difficulties with aggression, will also score highly on the negative affectivity measure, but is also likely to endorse items on many of the subscales of the Achenbach. It may be the ability of the Achenbach to detect this difference that accounts for its further contribution to the prediction of outcome. The second adolescent has experienced multiple stressors in an environment which is unlikely to have facilitated the development of coping skills. Adolescents who experience cumulative stressors and who have a restricted range of coping styles are known to be more likely to experience psychological difficulties (Compas, 1987; Compas, Malcarne & Fondacaro, 1988). Durability of mood disturbance relates not only to the initial severity but to the availability of coping responses. The second adolescent described will be likely to have a poor outcome in contrast to the first adolescent, not only because of the breadth of their difficulties, but because of their impoverished coping styles.

Adolescents' perceptions of their family dysfunction did not predict outcome. This is a surprising finding at one level as clinical experience suggests that the greater the family dysfunction the more likely a poor outcome will result. However, Pfeiffer & Strzelecki (1990), in their comprehensive review, reported mixed findings on the impact of family functioning on outcome. Six of the reviewed studies found links between family variables such as marital

conflict, childhood separations, involvement in treatment and familial stress. Other studies had not found significant associations. Family functioning is a diverse variable and it may be that only certain key aspects are related to outcome for the adolescent. However, it may be that the use of a self-report questionnaire to assess family functioning may not provide the most accurate assessment of family dysfunction. There are considerable pressures on both adolescents and parents to be inaccurate in their reports. Parents often feel already to blame for the problems of their adolescents and are fearful on entering treatment that this will be the attitude of the treatment team. They are, therefore, perhaps likely to under-report their family difficulties. Adolescents may be fearful that they are to blame and may over-report the problems or they may feel guilty about the difficulties that their families are experiencing and seek to minimise the problems. It is also possible that both adolescents and parents may be inaccurate as a consequence of stress at the time of admission or in a search after meaning. Any or all of these factors are likely to reduce the effectiveness of the measure of family functioning as a predictor of outcome. To demonstrate conclusively that family function does not predict outcome, an observational or interview assessment may be more likely to provide more accurate data on the relationship between family function and outcome.

The ability of the cognitive style model to predict outcome is of considerable interest, in particular as it indicates aspects of psychological functioning which may be amenable to intervention. These data are of particular importance because cognitive variables, unlike adolescents' reports of their own symptomatology, are less open to bias. This model indicates that global self-worth, attributional style for negative events and specificity of memory scores

are related to outcome. The finding that low self-esteem is related to outcome is unsurprising, although, this is the first study to demonstrate such a link. Firstly, individuals with low self-esteem will be more vulnerable to persistent mood disturbance as negative self-schemas will be at greater risk of activation (Teasdale, 1988). Secondly, feelings of lack of competence or self-blame for their current circumstances may have an impact on their ability to take advantage of the therapeutic milieu which may aim to alter their negative views about themselves. They may also be inhibited from engaging with the therapy process for fear that it will elicit negative views from the staff or serve to confirm their own negative view of themselves.

The finding that attributing negative events to internal, stable and global causes is related to a more positive outcome is a somewhat counter-intuitive finding, as it might be expected that those adolescents who hold themselves responsible for negative events would be less likely to do well in treatment. However, it is important to bear in mind that the relationship between attributional style for negative events and outcome was a complex one. Attributional style for negative events did not correlate directly with outcome, indicating that it is not in all circumstances that being internal stable and global for negative events produces a good outcome. This result was only observed in the regression equation when the variation attributable to initial mood disturbance and global self-esteem had been controlled for. Consequently, this effect is only able to explain variation in outcome in these circumstances. It is possible that there are two types of depressives within the sample; so-called "typical" depressives, with low self-esteem and high depression scores who also have high scores on attributional style for negative events; and "atypical

depressives" who adopt an affect regulation and self-esteem protection strategy by scoring low on the attributional style measure and effectively blaming others for their circumstances. In the regression analysis, by removing initial negative affectivity first, followed by global self-worth, most of the variance in outcome accounted for by the "typical depressives" will have been removed. The variance remaining will be of those who are adopting an "adaptive" attributional style to control negative affect. For these individuals treatment may not be helpful; firstly, they may be unable to engage in therapy as their focus is on blaming others and they do not feel that they have anything to gain from engagement; and secondly, if they do engage, their affect regulation strategy may be at risk of collapse resulting in increased negative affect as they contemplate the possibility that they may be partly responsible for their own difficulties. These "atypical depressives" are perhaps most likely to be those adolescents who present with an externalising disorder and it may be the presence of such adolescents within the sample which accounts for the findings. These possibilities will be discussed further in chapter 6.

The relationship between specificity and outcome is also of interest. In this study, in contrast to Brittlebank *et al*'s (1993) work with depressed adults, adolescents who were more specific about negative memories had a poorer outcome, even when their initial mood disturbance was controlled for. At one level this is an intuitively obvious finding, that adolescents who have more distressing memories do less well in treatment. However, as indicated in chapter 3, it is in contradiction to most of the findings in autobiographical memory in adults. Mood disturbed adolescents in this sample were more likely to be specific about negative events and were more likely to have a

negative outcome. Possible explanations for these findings rely on a more theoretical understanding of autobiographical memory than has been given so far, and will be discussed in that context in chapter 6.

In comparing the adolescent perception of symptomatology and cognitive style models it is not possible to say which is the most accurate predictor of outcome. It is important to recall that all of the cognitive style variables were correlated with internalising problems and, as such, the cognitive style model may merely be picking up variance attributable to symptom severity and breadth. The post-hoc model, which entered YSR internalising problems into the analysis before the cognitive variables, suggests that this is not the explanation for the effectiveness of the cognitive style model in predicting outcome. All three variables, self-esteem, attributional style and specificity, continued to contribute to the variance in discharge negative affectivity despite this more rigorous control of severity and breadth of initial symptom severity. However, this was a post-hoc model and, as is the case in all studies utilising regression procedures, the most effective test of the model is to repeat the analysis on an additional larger sample.

5.5. Summary.

Adolescents with high levels of initial distress, low self-esteem, an externally oriented attributional style for negative events and high specificity for negative cues, have the poorest outcome. There is clearly a need for effective treatments for these adolescents which will need to be based on a more theoretical understanding of the relationships between emotional distress,

cognitive style and outcome. Chapter 6 will present a model for understanding these variables in a developmental context.

Chapter 6

A model for change in a residential setting: theoretical basis.

This thesis has described a group of adolescents admitted to a residential facility. It has sought to expand the understanding of mood disturbance within this group of adolescents, to evaluate their outcome and to explore the relationships between psychopathology, cognitive style and outcome. This chapter seeks to review the literature on cognitive processes to develop a model to explain the findings in chapters 3 and 5. This model needs to be a testable developmental model which accounts for the particular processes known to occur in adolescence. Section 6.1 will summarise the main findings of this thesis which require explanation by the model. The following sections will focus on the three key psychological concepts of interest, global self-worth, autobiographical memory and attributional style. The model linking these three aspects of psychological functioning, described in section 6.5, is related to the impact of attachment related processes on the development of metacognition and metarepresentational thought. The chapter concludes with reflections on methodology and suggestions for future research.

6.1. Main findings.

Chapter 2 described the main characteristics of the sample. The implications of those findings for the current understanding of psychopathology within adolescent in-patients was discussed at length in the final section of that chapter and will not be considered further here.

In chapter 3 the relationship of four cognitive variables, global self-worth, attributional style, autobiographical memory and problem-solving, to depression and hopelessness were observed. Depressed mood was associated

with dysfunctional attributional styles and a tendency to be more specific in the recall of autobiographical memories. Depression was most effectively predicted from a combination of global self-worth and attributional style for negative events. Adolescents with more dysfunctional attributional styles were observed to be more specific in response to negative cue words in the autobiographical memory test. Under all conditions of attributional style, dysfunctional and adaptive, depression was positively correlated with an increased specificity in response to negative cues. In contrast, hopelessness was positively correlated with specificity under conditions of adaptive attributional style, and negatively under conditions of maladaptive attributional style. Contrary to the adult data, a history of parasuicide was not associated with greater generality in the recall of autobiographical memories, however, it was associated with a tendency to return to the same negative memory in response to more than one cue word; a phenomenon which will be referred to as the 'specific prototypical memory effect'. Problem-solving was not found to be significantly related to depression or hopelessness.

In chapter 5 two models were found to predict outcome of negative affectivity; the adolescent symptomatology model and the adolescent cognitive style model. In the former, both internalising and externalising symptoms were found to significantly predict outcome. In the latter, global self-esteem, attributional style for negative events and specificity in response to negative cue words were all found to predict outcome. Adolescents with high self-esteem, high scores on the attributional style for negative events, which is generally considered to be maladaptive, and low specificity to negative cues,

also considered maladaptive, had better outcomes in terms of lower negative affectivity.

6.2. Self-Concept.

During adolescence the self-concept undergoes a period of significant change and development. There are four main reasons for this (Coleman & Hendry (1990). Firstly, the neuroendocrine and neurohormonal changes in puberty result in dramatic physical changes. These changes are a potential source of alteration in self-concept. Secondly, intellectual changes make possible the development of a more complex and sophisticated sense of self. Gaining emotional independence from parents, and the imminence of decisions relating to lifestyle impact significantly on the sense of self. Finally, the role changes which occur during the adolescent transition are likely to encompass changes in the self-concept. In this thesis only the impact of global self-worth on psychopathology was considered in any detail, however, a wider perspective on the self will be taken at this point to place these findings in context and enable them to be related to the findings relating to attributional style and autobiographical memory.

Harter (1990; 1996), a major contemporary theorist and researcher of the self-concept, takes as her starting point for understanding the self-concept the distinction made by James between the *I* and the *Me* (James, 1892) . The *I-self* is the observer which lends a sense of continuity to the sense of self whereas the *Me-self* consists of the observed characteristics of the self which come to define the self-concept.

The extensive and radical changes which occur during the adolescent period, in particular pubertal and cognitive changes, pose a serious threat to the sense of continuity of the self over time. It is this disruption which lies behind the notion of the Eriksonian identity crisis (Erikson, 1978). Erikson described development across the life span as occurring in a series of stages each with its own particular development issues to be resolved. The adolescent stage has as its main focus the formation of a sense of identity; "who I am and my place in the social order". There are two pressures here; the first is to develop a coherent sense of self and to come to terms with the changes that the adolescent period brings; the second is to find a relationship between the sense of self and the societal context. This latter process may be particularly problematic as a consequence of the increasing role differentiation that adolescence brings. For example, a male adolescent may need to wrestle with the tensions and inherent contradictions with being both a 'son' and a 'lover'. This second process places the first, the establishment of a coherent sense of self, in some jeopardy as the constructs of self which attach to these different roles may be apparently in conflict. As a son he may be under pressure to be compliant to family rules and expectations, yet as a lover he may be required to be independent and demonstrate a primary attachment to his partner. The aim of this stage of development according to identity theorists is to resolve these two competing pressures into a coherent self-theory which involves societal and interpersonal roles as well as attributes of the self.

There has been some controversy over the applicability of Erikson's notion that all adolescents must pass through a *crisis* to resolve these issues, in

particular by those theorists who seek to normalise the adolescent experience (Coleman & Hendry, 1990). Although, the centrality of a crisis to the resolution of these difficulties is uncertain, what is evident is that adolescents do demonstrate different stages of resolution of the relevant issues. Marcia (1966, 1967, 1979) has conducted an extensive series of investigations into this aspect of self development in which four stages of identity achievement have been described. Kroger (1989) provides an extensive review of this work, only some aspects of which are considered here.

The first, *identity achievement*, indicates a successful resolution of the pressures as outlined. The young person has thought over the issues and come to some resolution of who they are and their place in society. Individuals in this group are high in autonomy and are less likely to rely on the opinions of others. Identity achievers function generally at the highest level of post-conventional moral reasoning (Rowe & Marcia, 1980). Identity achievement is associated with secure attachment patterns (Kroger, 1985; Kroger & Haslett, 1988) and the ability to perceive parental strengths and weaknesses. Families of identity achievers generally support adolescent autonomy (Grotevant & Cooper, 1985).

During the second stage, *moratorium,* the young person is still in some confusion and debate over these issues and has not yet reached an identity achieved status. However, they are still struggling to resolve the pressures. They tend to be more anxious than identity achievers and are often volatile and intense in their interpersonal relationships. They are similar to identity achievers in their high levels of cognitive complexity, moral reasoning and

failure to conform to the views of others. They are in the process of disengaging from parents and have more mixed attachment patterns (Kroger & Haslett, 1988). The parents of moratorium adolescents also encourage individuation.

In the *foreclosure* status the process of resolving these issues has been avoided and views of parents or significant others have been prematurely adopted. Foreclosure adolescents are often authoritarian, conventional in their moral views and committed to ideological and vocational values (Kroger, 1989). These individuals are often less anxious but are also less cognitively complex in their judgements. They are still undifferentiated from their parents and are very "well-behaved" in relationships. They are more insecure in attachment profile - often anxious or detached. They are close to parents who encourage conformity and adherence to family values (Jordan, 1971).

In the *diffusion* status, the adolescent experiences the pressures and confusion, but is not actively seeking to resolve the issues. They often have low self-esteem and autonomy and seem to lack any real sense of self. They function at pre-conventional or conventional levels of moral reasoning and use less complex cognitive styles. In relationships they tend to be distant and withdrawn and they may be stereotyped and distant in their dealings with others. Caregivers were often distant or rejecting (Jordan, 1971).

The timing of transition to identity achievement may vary across domain. For example, a young person may be identity achieved with regard to vocational choice, yet still remain in moratorium regarding political beliefs. There is

some evidence to suggest that identity status has different mental health implications according to gender. Self-esteem may be highest in females who are in foreclosure and lowest in women who are identity achieved. This may be because identity achievement may involve alienation from social support and traditional female roles and behaviours. Whether this pattern changes as the role of males and females changes in society remains open to investigation.

The state of resolution of identity issues has implications for self esteem, as can be seen from the brief sketches of the different stages outlined above. What is less clear is whether self-esteem proceeds from a given stage of resolution of the identity issues, or whether global self-esteem facilitates or inhibits the achievement of identity status. Given that global self-esteem is present in late childhood, it certainly precedes the adolescent transition and may play a key role in the way the adolescent is able to evaluate their competencies in other areas of their self concept in the formation of their sense of self. I will now consider these other aspects of the self-concept, domain competencies and global self-worth, which comprise the *Me-self.*

Developmental changes are observed in the description of the *Me-self* (Harter, 1996). In the pre-operational stage, concrete, observable behaviours and characteristics are utilised to describe the self e.g. "I run fast", "I like ice-cream". During concrete operations this changes so that trait labels are employed to organise behaviour into categories, for example, "I am friendly", "I am kind". On progressing into formal operations it becomes possible to form abstract generalisations about the self from the integration of trait labels, e.g. "I am cheerful", "I am depressed" becomes "I am moody". The use of

abstractions enables the possibility of a self-theory but also contains some hazards. In particular the removal of descriptions about the self from observables means that the abstract generalisations are more susceptible to distortion. Also, the young adolescent does not yet possess the ability to integrate these abstract self-descriptions into a coherent self-theory. The consequence is perhaps confusion over the presence of seemingly contradictory statements about the self, for example, "how can I be both sensitive and stubborn?"

Early work on the self-concept focused exclusively on self-esteem which was considered as a unitary concept (Coopersmith, 1967). Later theorists, most notably Harter, have emphasised that the self-concept is more differentiated than this and that children and adolescents evaluate themselves along a number of domains of performance, for example, close friendship, academic ability, social acceptance. Harter has employed James' (1892) belief that it is the ratio of competence in a given domain to the importance of the domain to the individual that determines self-esteem. She has utilised this concept with considerable success across the age range, finding support for James' early conception that this ratio is relevant to the development of self-esteem.

In addition to the changes in the types of self descriptions, there is also evidence that the self-concept undergoes greater differentiation over the years so that the self-concept contains more categories and there is a greater differentiation within categories. There is also evidence that self-descriptors vary across social roles and contexts. This increase in complexity creates difficulties, as described earlier, in terms of integrating these concepts into a

coherent sense of self. Consequently, formal operations represents a liability as the adolescent develops the ability to detect inconsistencies in the self-theory but only later develops the capacity to integrate these. The developmental findings indicate that during middle adolescence (ages 14-15), individuals detect inconsistencies across various role related selves, but are also extremely troubled and conflicted over these selves, much more so than younger adolescents (11-12) who do not have the ability to detect the inconsistencies, or much older adolescents (17-18) who are more able to integrate these inconsistencies into a unified self-theory, but also seem to place a greater value on flexibility across roles (Harter, 1990).

The transition to formal operations also allows the construction of future selves which may include both positive and negative aspects; attributes to be desired and attributes to be avoided. Such possible selves are often experimented with and may create concern and confusion over what is the true and false self. It is such "possible selves", as described by Markus & Nurius (1986), which Conway describes as being the focus of themes of many of the autobiographical memories of this period. This will be discussed further in the next section. It is, therefore, hypothesised that it is the transition to formal operations that is the pre-requisite for adolescent self-reflection and is the driving force behind the increased preoccupation with the self.

In addition to the increasing diversity of competencies which form the self-concept, adolescents also possess a sense of global self-esteem. As stated previously, Harter has argued persuasively for the Jamesian view that global self-worth is derived from the ratio of importance of a domain to an individual

and their perceived competence within the domain. This seems clearly to be the case in non-clinical samples. However, in clinical samples global self-esteem may bear little or no relation to evaluated competencies (chapter 4). Why might this be?

The early origins of global self-esteem are likely to lie in the internal working models of attachment relationships (Harter, 1990). Bretherton (1991) argued that children who experience parental figures as emotionally available and supportive will construct a working model of the self as competent and loved. If the attachment figure is rejecting they may form a construct that they are unworthy which may act as a precursor to low self-esteem. In addition, these working models may also impact upon the adolescent's ability to evaluate their own competencies and other peoples views of their competencies accurately. For example, with a secure attachment history, an adolescent is used to experiencing support, encouragement and praise in the context of mastery of new skills, whether they involved success or failure experiences. They are likely to have witnessed a model of parental behaviour towards them in which failure to master a task did not entail a denigration of their worth in the eyes of the parent. Consequently, they will have internalised this approach to skill mastery so that they will be able to encourage and praise themselves in new situations but are also likely to have skills to enable them to persist. In adolescents who have lacked this experience, who have been raised in a hostile or critical environment, they are likely to have internalised a critical attitude and to be unforgiving of themselves when they fail and to consider failure as confirmation of their lack of worth. They are also less likely to persist and hence disconfirm their belief that they are unable to master the task.

Other relationships, in addition to early attachment, are also important in the development of global self-esteem. Cooley (1902) was the first theorist to describe this perspective. He described the self as a social construction derived from the perceptions of others. This was termed the "Looking Glass Self", that is we see ourselves in others as in a mirror and it is by reflection that we form our self-concept. There is evidence to support this conception across the age range, as children, adolescents and adults all compare themselves with how they believe significant others or significant social groupings view them (Harter, 1996). In adolescence the peer group begins to play an important role here and may enable adolescents, even those with poor parental attachment histories to evaluate some aspects of their competencies more positively, especially in areas where parents may have less influence, for example, romantic appeal. However, internal working models of attachment are still likely to play a role in determining the form of interpretations the adolescent makes about what they believe to be the views significant others hold about them.

This thesis focused on self-esteem to the exclusion of other aspects of the self-concept. The results found here, namely that global self-esteem is an important predictor of depression both at the time of the self-esteem assessment and at treatment outcome, are unsurprising. The result in the cross-sectional study cannot be used to argue for a strong case of the causal priority of self-esteem in the aetiology of depression as the measures were taken simultaneously and it could be argued, therefore, that low self-esteem is merely a correlate or symptom of depression. Whilst there are numerous

studies indicating a correlation between self-esteem and depression in children and adolescents, the causal priority of low self-esteem remains unclear (Robinson, Garber & Hilsman, 1995). Prediction of treatment outcome on the basis of low self-esteem is more conclusive. Adolescents with low self-esteem, and consequently likely to be experiencing or at risk for depression, benefited less from treatment. There are a number of possible reasons for this. Firstly, their admission to an adolescent psychiatric unit may have served to reinforce their negative views of themselves. Secondly, if the hypothesis is correct that global self-esteem is derived in part from insecure attachment models, then one would predict that adolescents with low self-esteem would find it difficult to build effective therapeutic relationships in which to challenge their negative views of themselves. In addition, they are likely to be unable to evaluate objectively positive feedback that they may receive, invalidating their progress and so believing that they are as bad as they think they are. Consequently, they are doubly disadvantaged. Thirdly, it may also be the case that as a consequence of low self-esteem they are unable to explore issues relating to identity and feel unable to integrate their current experiences into a sense of self and an understanding of the reasons for their distress. This will also inhibit an effective engagement in therapy.

In this sample of adolescents there was no evidence of an overall improvement in self-esteem as a consequence of treatment. This is comparable to the other study of this type which found similar results (King, Naylor & Segal, 1993). However, similar to that study there was also evidence of variability in the changes in self-esteem; with some adolescents moving in a positive direction, some remaining the same and others suffering further decrements in self-

esteem. There is clearly a necessity for further understanding of these processes. In a sub-sample of the adolescents it is possible that global self-esteem may be tied more directly to competencies, and that if the adolescent can be encouraged to re-evaluate these more positively, then an improvement in global self-esteem may result. In other adolescents this process may be ineffective, either because changing their perceptions proves impossible or because their global self-esteem has become "unhooked" from their competency based evaluations; receiving treatment for these adolescents may be a wholly negative experience particularly if they feel that they are "unsuccessful" here also. This is perhaps most common with adolescents who present with a mixture of conduct and emotional disorders. For these adolescents their behaviour disruption may prevent them from making the most of the treatment available and, at times, may exclude them from treatment. The importance of self-esteem for psychopathology and development of the self-concept during a crucial stage of identity development necessitates further investigations of this process of self-esteem change.

Further research would need to focus on these inter-relationships. For example, a longitudinal study of self-esteem and its relationship to outcome involving multiple time points would give an indication of whether these variables fluctuate significantly during treatment, or only change slowly and gradually. Adding into such a design an initial measure of the adolescents attachment status would explore the links; firstly between attachment status and self-esteem, in particular whether it is only in certain attachment styles that global self-esteem is unhooked from competency based evaluations; and secondly, whether there is an interaction between attachment status and change

in self-esteem and mood during treatment. A further extension to the study would involve employing the use of measures to assess therapeutic impacts (Stiles *et al*, 1990). This may provide the key to the types of therapeutic experiences which are pivotal in improving or worsening self-esteem.

6.3. Autobiographical Memory.

As described more fully in chapter 3, lack of specificity in the recall of autobiographical memories has been associated in adults with mood disturbance, in particular depression and parasuicidal behaviour. The results found here in an adolescent in-patient sample contradict this finding in two ways; firstly, in the cross-sectional study, adolescents who were more specific were more depressed; and secondly, in the outcome study, specificity predicted a poor outcome, whereas in the one similar study in the adult literature (Brittlebank *et al,* 1993) specificity predicted a better outcome in treatment. Why might these differences be observed? There are two possibilities. The first was touched on briefly in chapter 3, the assessment of autobiographical memory in this study was conducted by a member of the treatment team which may have introduced a demand characteristic resulting in an increased likelihood of the retrieval of specific autobiographical memories. This is a contextual account of the findings and will be returned to later. The second possibility is that there is a genuine difference in adolescence in the way that specificity relates to mood disturbance. This was hinted at by Flammer & Rheindorf (1991) who also made a claim for a difference between adults and adolescents in the way autobiographical memory functions in relation to mood disturbance and attributional style.

There are good reasons for expecting greater specificity in adolescence on the basis of theoretical approaches to autobiographical memory and it is to these approaches that I now turn. Within this literature there is a strong emphasis on the links between autobiographical memory and self-concept (Fitzgerald, 1988; Conway, 1993). This link has been used to explain the observation of the *reminiscence bump*, the increase in the recall of teenage memories observed in older subjects when asked to recall memories from across their lifespan. Fitzgerald (1988) attributes this increase to the significance of events occurring at this time in terms of personality formation and self-concept development. Conway (1992; 1996) outlines a model for the construction of autobiographical memories which involves the combination of phenomenological experience with thematic knowledge by a central processing resource. "Self" is considered to be the main source of themes and as the self changes over time different themes are discarded and replaced (Conway, 1992). He, therefore, proposes that at certain key times changes in the self will be dramatic and profound, and that the identity stage of adolescence will be one such time (Erikson, 1978; section 6.2). Conway, like Fitzgerald, uses this hypothesis to explain the increased recall of memories from the adolescence age range.

Nelson's model (1993), from a developmental standpoint, would also suggest the possibility that adolescence would be a time of increased specificity, although, some have used her model to argue for generality (Williams, 1996). Nelson argues that the memory system must have adaptational significance. The function of memory, generally, is essentially to guide action in the present

and to predict the future on the basis of past occurrences. The system is hypothesised to operate as follows. Following a novel event, the experience is logged in episodic memory. At this stage the system cannot know whether this experience warrants the establishment of a script or is merely a single aberrant occurrence. If the event is repeated within a short space of time then this event will be copied, in the form of a script, into the generic store, where presumably further instantiations will also be stored at the same location. Such scripts can then be used as templates for further action. The length of time a memory is held in the episodic store can be lengthened by periodic reinstatement of the event. In the final stages of development of the system, single episodes may be copied from the episodic store into autobiographical memory, given certain conditions, such as social value or perceived significance to the self-concept. At the same time, repetitions of experiences, whether copied to the autobiographical memory system or not, may cause the transfer to the generic system as previously. For example, an adolescent may have autobiographical details of the death of a grandparent, absence of father through divorce and the recent death of a pet, available to him or her; however, they may also have a generic script based on these events that "important people in my life leave me". Access to these different parts of the system may only occur under certain circumstances (of which more later). The functional significance of autobiographical memory, according to Nelson (1993), is sharing memory with others and it thus performs a social solidarity function but may also, as a consequence, function to assist self-concept development (see section 6.2 on Cooley's "looking glass self").

Nelson's model is different from Conway's in that it is a developmental model, but also it is a "store" model; that is different types of memories are believed to be held in different memory stores. Conway takes a constructivist view, arguing strongly for the position that autobiographical memories are created "on-line" from a combination of thematic knowledge and phenomenal experience. However, and crucially for us here, in common with Conway's model, Nelson emphasises the importance of salience to the self as a reason for the encoding of autobiographical details. Adolescence is a time of significant focus on the self with the development of formal operations and the ability to think about thinking. It is recognised as an important period for the development of self-concept (see Section 6.2), and as such one might expect an increase in the salience of certain experiences on both of Nelson's criteria, social significance and personal salience. Consequently, one might predict an increase in the accessibility of specific memories of salience to the developing adolescent self.

From a theoretical perspective there are grounds for expecting increased specificity in autobiographical memory during the adolescent period. This is essentially a consequence of the development of formal operations and metacognition and the increased salience of the self and themes relevant to the self. As a consequence, adolescents are focusing on their life experiences and asking the question "why has this happened to me?" and "what is its significance for my future?". If this is in fact the case, autobiographical memory test results with a non-clinical sample of adolescents should also elicit high scores for specificity.

On the basis of the theoretical models of autobiographical memory of Conway and Nelson there are grounds for expecting an increased availability of specific memories in adolescence. However, this is under conditions of so-called normal development. It is under conditions of traumatic early experience that Nelson and others (Williams, 1996) have argued that the formation of the memory system is altered such that only generic descriptions are available. This is clearly a possibility and may occur under some circumstances, however, I believe it to be unlikely.

Firstly, the evidence of traumatic experiences in adulthood, for example in post-traumatic stress disorder, indicates that although generic scripts are present, vivid detailed memories of the experiences are also available. The former are generally retrieved in standard autobiographical memory tests, the latter often appear as unbidden images. The circumstances for recall for either generic or specific information may differ (of which more later), however, the presence of both types of information indicate that both are available for recall (Brewin & Andrews, 1990). It could be argued, that in adults, in contrast to children, the autobiographical memory system is fully formed and so is able to contain both specific and generic information. However, clinical experience suggests that this phenomenon of the intrusion of vivid recollections of the past is also observed in adolescents who were abused as children.

Secondly, as Bolton & Hill (1996) have persuasively argued, the forgetting of frightening and painful information is probably not an option. Children continue to seek comfort and care even from parents who are very rejecting and such actions will require some form of representation to allow them to take

place. This will necessitate the omission of any information that is incompatible with the actions, i.e. that the parent is rejecting. This act of omission will require that the incompatible information be "forgotten" which will entail mental effort to ensure that this information is not used in the regulation of action. Bolton & Hill (1996) explain that the consequence of this process will be the presence of two internalised sets of rules, one that preserves accuracy but does not meet the needs of the individual, and one that sacrifices accuracy to enable needs to be met. It is likely that the one which allows needs to be met will be active and the other inoperative. However, the non-operative account will remain as a contradictory schema which may potentially create disruption of function at a later stage when activated.

Main (1991) has argued similarly for "dual-coding" of events in infants and children exposed to traumatic events. Young children with an absence of meta-cognitive capacity are unable to evaluate different recollections of the same event, such as their own recollection of an experience and a contradictory account of the same event given by an attachment figure. Main argues that both versions are encoded but may remain unintegrated. What is likely to happen when such contradictory schemas are activated? Bolton & Hill (1996) suggest that the beliefs and emotions associated with the alternative schema may be activated later perhaps by events or circumstances which in some way resemble the original. This is likely, but it is also possible that the changes in the adolescent transition, with the emphasis on working out a sense of self, managing separation and individuation, developing a sexual identity, (i.e. essentially normative experiences), may be sufficient in some circumstances to activate previously inactive schemas. The consequence may be an episode of

depression and hopelessness. In cases of severe repeated trauma the intrusion of alternative, highly generalised schemas may result in more severe disruptions of function, as in borderline personality disorder. I would predict under such circumstances that the experiences which led up to the formation of the schema may be highly accessible, resulting in increased specificity even in emotional trauma.

In summary, I would argue that there are good reasons for expecting a greater specificity of recollection of memories during adolescence based on a high salience of self themes. This is likely to be the case even where adolescents have experienced either recently, or in childhood, traumatic or disruptive attachment experiences. However, what may differ in these latter cases is the form of the cognitive structure under which such experiences are encoded and consequently their availability for access. This leads me on to a second and possibly complementary explanation for the results found in this study.

The above explanation for the greater specificity observed in this sample leaves two questions unanswered. Firstly, why, in some studies with adolescents, are these results not found (Orbach *et al*, 1996) and secondly, why does the pattern change in adulthood so that adults with depression, parasuicidal behaviour and PTSD generate generic memories in standard autobiographical memory procedures? The key to both of these may be the context of the recall and the perceived necessity in some circumstances for affect regulation. As is evident from the results reported here and from studies with adults, ruminative negative self-focus can be emotionally distressing, especially if it does not produce any resolution (Nolen-Hoeksema, 1994). It may be, therefore, that

under certain circumstances a style of truncated search is adopted to reduce unpleasant affect. This strategy could be triggered in three ways. Firstly, a belief that it is unhelpful to go over past events. Such a belief may be socially reinforced by societal taboos around discussing painful topics such as death or abuse. Secondly, a tacit assumption, which has been laid down as part of a narrative style, about the most effective way of dealing with distress. This may occur in individuals where their trauma has been ignored or actively denied. Finally, in social conditions under which it is considered inappropriate to disclose distressing topics, either because the participant is afraid of whether they will cope with revealing information or their uncertainty of whether the interlocutor will cope.

There is evidence that in individuals with a so-called *repressive coping style* the information elicited from their autobiographical memory differs according to the context and form of the question. Individuals with this coping style have high levels of physiological arousal yet low levels of reported anxiety (Myers & Brewin, 1994). They also have difficulty in standard autobiographical memory procedures in producing early memories of childhood. However, Myers & Brewin found that in an interview style format, repressive individuals were able to recall aspects of childhood in some detail. They were also found to have experienced greater childhood adversity than other groups.

These findings open up the possibility that the form of investigation, or indeed the person conducting the investigation, may impact upon the memory retrieved. Evidence from the developmental literature lends some support to

this suggestion. Fivush & Hammond (1990) found that children's accounts of an event on different occasions with different interviewers provided somewhat different aspects of the event. Engel (1986) identified two forms of narrative used by mothers in discussing events with their children. Elaborative mothers use memory as the basis for story telling and narrative construction, whereas pragmatic mothers consider memory to be useful for retrieving information relevant to ongoing activities. These different styles result in different contributions from children to memory talk, with children of elaborative mothers providing more information. This study and others (Tessler, 1986; 1991) provide evidence that early socialisation experiences produce differences in the way memory is used and may also produce differences in beliefs about the function of memory, and consequently how it is organised.

I, therefore, suggest that under certain circumstances a truncated memory search strategy may be used by some subjects in autobiographical memory studies. The circumstances under which such a strategy may be initiated may depend crucially on early socialisation experiences and their impact on the way individuals believe memory ought to be used in social encounters, and possibly on their effect on the structure of the memory system itself.

How then does this affect regulating truncated search theory account for the observations of generic memory strategies in adult patients? Consider the case of PTSD in which very distressed individuals present with generic memory strategies (McNally, Litz, Prassar, Shin & Weathers, 1994). Much of the distress in PTSD originates in the uncontrollable return of very vivid memories in the form of intrusive flashbacks. As a consequence, it would be expected

that individuals would adopt strategies to attempt to reduce this. One such strategy would be to attempt to avoid setting off the memories, for example, by remaining in a categorical stance. As is typical with all avoidance strategies the consequence is a heightened aversiveness of the feared stimuli with the potential for a consequent increase in the undesired thoughts or memories. Current treatments for PTSD may involve a detailed recollection of the event and exposure to the consequent unpleasant affect (Foa & Kozak, 1986). Under the right circumstances, generally with a trusted therapist, there are no difficulties in actually recovering details of the event, the difficulty is in "avoiding avoiding" exposure to the details. If this is the case, that PTSD patients do not have difficulty accessing specific details, why do they not report specific memories in autobiographical memory tests?

The answer may lie in the inappropriate context. As argued in chapter 3, if you have experienced very unpleasant events, you may be reluctant to disclose these unless you are certain that the person you disclose too will be able to respond to the information appropriately and will be able to help you cope with any resulting affect. Bolton & Hill (1996) suggest that the dilemma for the PTSD patient is either to accept the fact that the trauma occurred, feel overwhelmed by the recollection and consequently feel that continued action is impossible, or to preserve the belief in the theory that action is possible, otherwise life would be unbearable, which involves denying the trauma. These two schemas or "core theories" are in conflict. To enable the individual with PTSD to expose their trauma there needs to be some certainty that the resulting emotional paralysis or engulfment can be addressed. This belief may take a considerable time to be built up in therapy and will rarely, if ever, be

available in standard research procedures in autobiographical memory. Therapists can testify to the time it takes to develop a trusting relationship in which such experiences can be related and it is, therefore, unsurprising that under certain circumstances the information is not elicited. Gilbert (1988, 1989) commented on the fear of disclosure present in clients who anticipate critical and derogatory comments from the therapist and will only proceed to disclose when a sufficiently trusting relationship has developed with the therapist.

This hypothesis is testable, as one would predict different autobiographical memory test results with the same patient with different interviewers, for example an unfamiliar researcher and the patient's therapist. Under this theory one would predict greater specificity with the therapist than with the researcher. This explanation of context sensitive truncated search would also explain Orbach *et al*'s (1996) results. In this study, adolescents were asked to report on the experience of physical abuse or exposure to marital violence to an unfamiliar researcher. Orbach *et al* acknowledge that there was a strong demand characteristic for the adolescents to remain non-specific and general to avoid uncertain or unpleasant consequences following disclosure.

A further dimension to consider in this contextual theory of autobiographical memory access relates to attachment theory. Attachment theory is a broad area encompassing an extensive body of empirical work. Only a brief review is possible here. Early work focused on the attachment of infants to their parents. This was established through observation of infants and parents in the Strange Situation, a laboratory procedure which enabled the behaviour of

the child in relation to the parent to be classified. Children were initially assigned to three categories: secure, insecure-ambivalent; insecure-avoidant (Ainsworth, 1978). Secure infants miss the parent on departure, seek proximity on reunion and then return to play. Insecure-avoidant infants show few or no signs of missing the parent and actively avoid or ignore them on their return. The insecure-ambivalent infants are distressed and highly focused on the parent but remain distressed when the parent returns and are unable to return to play. A more recent additional classification has been identified, insecure-disorganised. These infants demonstrate unusual behaviours during the Strange Situation such as freezing of movement or stereotypies in the parents presence.

These classifications are highly stable across time and can be different with different caregivers, that is they are a characteristic of a relationship, not of the child alone. Attachment classification has been found to be related to a number of other significant psychological capabilities, for example, quality of peer relationships, self-esteem, effectiveness at coping with difficulties or in tackling novelty and metacognitive abilities in mid childhood (Sroufe, Egeland & Kreutzer, 1990; Fonagy, 1996). It was hypothesised that early relationship experiences between infant and caregiver are internalised and conceptualised in the form of a working model of attachment which is instrumental in the way in which the developing child interacts with and conceptualises the world (Bowlby, 1973).

More recent work has focused on these internal working models in adults utilising the Adult Attachment Interview (Main, 1991). This is a structured

semi-clinical interview which focuses on an individual's early attachment experiences, their effects and influences. This interview enables adults to be classified in similar ways to infants. Adults who are secure are coherent in the account that they give of their attachment experiences during the interview. They are able to focus easily on the questions and are able to provide rationales for their beliefs; they come across as truthful and collaborative. These characteristics are also evident even if they have experienced traumatic events in childhood themselves. These adults give the impression of having easy access to childhood memories. Adults with this pattern often have secure infants. Dismissing parents often insist that they cannot recall their childhood memories. They seem to idealise their parents, yet often these descriptors are unsupported or actively contradicted by the memories retrieved. These parents often have avoidant infants. Preoccupied parents produce very long interviews and present extreme oscillations of viewpoint. They appear to be highly preoccupied yet incoherent with respect to attachment. Their infants are often ambivalent. The 'insecure-unresolved with respect to loss or trauma' category is rated when there is a lack of coherence in the account and lapses in meta-cognitive monitoring or where the account is severely interfered with by the emotions associated with the loss or trauma. These parents often have insecure-disorganised infants who develop strategies of controlling the attachment figure in early childhood either by using aggressive or caregiving strategies (Cassidy & Marvin, 1991; Wartner, Grossman, Fremmer-Bombik & Suess, 1994).

As can be seen from the description, the parents' attachment classification is considered to have a major impact on the attachment behaviour elicited from

their infant, and subsequently, on the internal working models of their children. This hypothesis has been empirically demonstrated in a number of studies in which a parents' AAI classification prior to the birth of his or her first child is predictive of the child's attachment status at 12 (mothers) and 18 (fathers) months and these attachment statuses predict cognitive and metacognitive capabilities at 6 years (Fonagy, 1996; Fonagy, Steele & Steele. 1991; Steele, Steele & Fonagy, 1996). Main (1991) hypothesised that these cognitive and metacognitive effects may be a consequence of the child having to focus more attention on the parent, and as such, they can devote less attention to the exploration of their physical and, also ultimately, mental world. These difficulties may persist into adulthood as seen in the cases of preoccupied parents. The secure child who does not have to monitor the physical and psychological accessibility of the caregiver may have greater working memory capacity than other children. However, she may also have more "epistemic space" (Main, 1991) in which to review her actions and situations. Insecurity may lead to the development of defensive thinking processes, which may distort, disorganise or limit access to memories, feelings and intentions. Metacognitive monitoring under such circumstances will be more difficult. Evidence for this can be observed in a number of areas (Main, 1991). One such area is some pilot work in the development of autobiographical memory. In a sample of five secure and three insecure children, those rated as insecure had more difficulty in offering a spoken autobiography at 10 years; they also had more difficulty in obtaining early memories; nor did they show evidence of any meta-cognitive monitoring.

The evidence from the attachment literature lends further support to the contention of Nelson that it is early socialisation processes that have an impact on the form and content of autobiographical memories, and in some cases perhaps even those processes in which such memories are accessed. The relevance to the findings here is that, from this literature, it is evident that the form of a relationship, in this case the security between child and attachment figure, can determine the form of autobiographical memory encoded, elicited and shared. A therapist can also act as attachment figures and it is known that a clients previous experiences of attachment encoded in their internal working model influence the relationship that is built with the therapist (Hardy, Stiles, Barkham & Startup, submitted). In fact in some therapies, in particular psychodynamic psychotherapies, it is these working models and their re-experience within the therapeutic relationship which form the basis for the therapeutic work.

It may be hypothesised then, that the relationship between the adolescent in this study and the therapist as researcher may have elicited a different type of response from the participant than would have been expected from an unfamiliar researcher. If adults with mental health problems are likely to have experienced insecure attachment relationships, then under conditions which feel unsafe and mirror insecurity from past relationships, they may truncate their search within the memory system as a defensive self-protection strategy. Control subjects who are more likely to be secure are more likely to feel emotionally safe in these circumstances and to be able to reproduce specific memories. In circumstances where the investigator is a therapist, if the relationship is a good one, this may provide a sufficiently secure base for the

adolescent or adult to retrieve memories which, under other attachment eliciting circumstances, may be inhibited.

If the attachment related circumstances are sufficient to allow the retrieval of the memories, why then is specificity related to a poor outcome? The key issue here may not be the ability to recall the memories or reconstruct them, but the ability to do useful psychological work with them once they have been retrieved. As Main has indicated, impoverished attachment relationships have an impact on the development of metacognitive capacities such that it may be difficult for the child or adolescent to reflect on the consequences of a retrieved memory. For example, a child with unadvanced meta skills may reflect "I am a bad person because my attachment figure rejects me", whereas a more advanced child or adolescent may be able to say "I may be a bad person because my attachment figure acts as if I am, but on the other hand she has had false beliefs on other occasions." Adolescents with insecure attachment histories may either be significantly delayed in these skills or simply have less working memory capacity available as a consequence of rumination on numerous adverse experiences. The result may be that they become "stuck" within the memory system, able to retrieve and recall, but unable to process the memory any further. Recall that in this sample what was characteristic of adolescents with a history of parasuicidal behaviour was a tendency to return to the same memory in response to a number of cues. This may have been simply because these memories were highly salient for self themes or it may have been a consequence of becoming "stuck" to the experience and being unable to "unhook" and evaluate the memory and its significance. This same effect may operate within the generic memory system or at a generic level

under conditions when truncated search is activated. Adults with PTSD in a standard AMT procedure may become stuck at a generic stage resulting in the 'mnemonic interlock' as described by Williams (1996).

The ability to develop or utilise metacognitive capacity to navigate around the memory system and to re-evaluate memories may also depend upon the nature of the attachment relationship with the therapist. As yet such processes have received little empirical attention. However, there is evidence that the attachment status of case managers may affect the depth and type of interactions that they have with their clients (Dozier, Cue & Barrett, 1994). These early findings indicate that this may be a fruitful line of enquiry. Investigations examining the attachment status of both investigator, participant and the nature of their combined attachment relationship on the retrieval of memory processes would be of interest here.

6.4 Attributional Style.

The findings regarding attributional style are of particular interest as they only partially conformed to prediction. In the cross-sectional study the findings were generally as expected; adolescents with more dysfunctional attributional styles, that is internal, stable and global for negative events and external, unstable and specific for positive events, were more likely to be depressed. This is a common finding indicating the importance of cognitive style for mood state. As reviewed in chapter 3, attributional style has been considered as a risk factor for mood disturbance. Evidence regarding its status as a vulnerability factor for depression is mixed, however, following a stressful

event attributional style may predict the length of an episode of mood disturbance (Metalsky *et al*, 1987).

There is also evidence that attributions are important in the development of symptoms following disasters in both adults and adolescents (Joseph, Brewin, Yule & Williams, 1991; 1993). On the basis of this work it had been anticipated that dysfunctional attributions for negative events would perhaps lead to a poor outcome; that adolescents attributing negative events to invariant, global traits of themselves would be less likely to benefit from treatment as they would see their admission to an adolescent psychiatric unit as further confirmation of their belief that they are in fact to blame. Also, because their attributional style was global and stable they may be less able to accept more situational or transactional explanations for their current levels of distress. It was, therefore, a surprise that adolescents with, what is generally considered a maladaptive attributional style, had better outcomes in terms of negative affectivity than adolescents with so called more functional attributional styles. What could be the explanation for this?

The first point to note is that the relation between attributional style for negative events and negative affectivity at discharge was negligible when the zero-order coefficient is considered (see chapter 5). The partial correlation between attributional style for negative events and outcome became large and negative in the regression equation only after the entrance of global self-esteem into the regression equation. These effects taken together indicate a suppresser effect (Cohen & Cohen, 1983). This suggests that the original zero-order correlation is obscuring two different effects with regard to attributional style. One

possibility is the presence in the sample of adolescents with an 'atypical' depression in terms of attributional style, who tend to be external for negative events and to hold others responsible for their current experiences. For these adolescents depression scores would be negatively correlated with attributional style for negative events. In the regression analysis, the entry of admission negative affectivity and global self-esteem into the analysis first has the effect of removing the variance associated with 'typical depressives', that is those with low self-esteem and high scores on the attributional style for negative events measure. The variance remaining is accounted for by the atypical depressives who, despite a seemingly functional attributional style, one would expect to have a poor outcome as it is generally more difficult to engage such adolescents, or indeed adults with similar patterns, in therapy. For such individuals it may be difficult for them to examine the relationship between their experiences and their emotions; their desire is to change others not themselves. [1]

Consistent with this explanation is the fact that attributional styles are related to social desirability. Bradley (1978), in a study of adults, discovered that there is evidence that they are motivated to make internal attributions for positive attributions and external attributions for negative outcomes in order to present themselves in a positive light. Joseph *et al* (1993) found a negative correlation between internal attributions for disaster and social desirability in a sample of

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[1] As indicated in chapter 5, this finding may be attributable to the heterogeneity of the sample in that adolescents presenting with externalising disorders may be more likely to present with this pattern of attributional style.

adolescents. So more "adaptive" attributional styles are associated with social desirability which raises the possibility that the responses, particularly on questionnaire measures, of attributions may not be an accurate representation of the attributions individuals make. This may be especially the case in this sample, a clinical sample, all of whom have been admitted for treatment.

This raises the possibility that individuals with high scores on the negative composite are those who are reporting an external or surface presentation which matches their core belief structure. As such any therapist is able to directly engage with what the client experiences and presents as being the "real" problem. Adolescents who present with a seemingly more adaptive attributional style based on socially desirable responses may be presenting a "false self" for treatment, where there is a mismatch between their presenting problem and core beliefs and experiences. In this sense these adolescents may be presenting with a repressive coping style. If this is the case it would be expected that physiological measures would pick up on distress which is not being reported. It may be that the relationship between specificity for negative events and mood states, in particular hopelessness, taps this problem as the autobiographical memory test is perhaps less susceptible to these effects as the response required is not so transparent. Irrespective of attributional style increased specificity was associated with increased depression. This would be predicted on the basis of the discussion in section 6.2 regarding rumination over key negative events in the development of the self-concept. In contrast, the relationship between specificity and hopelessness differed depending upon attributional style. In adolescents with "maladaptive" attributional styles increased specificity is associated with lower hopelessness. This suggests that

in this group who tend to blame themselves remembering the details of an event guards against a hopeless attitude towards the future, whereas being general in your memory responses is likely to increase hopelessness. This pattern is remarkably similar to what had been predicted on the basis of the adult data.

However, adolescents with seemingly more "functional" attributional styles are more likely to be hopeless about the future if they are more specific about negative events. This is counter-intuitive on the basis of their attributional style as one would predict that they would be less likely to be hopeless as they should be attributing negative events to external, unstable and specific causes. It may be, therefore, that in this sub-group adopting a socially desirable attributional style is an attempt at affect regulation and does not match their core belief structure. As a short term affect regulator adopting a more functional attributional style may be effective in producing lower depression scores, for example. However, it may militate against active engagement in the therapeutic process and hence lead to poorer longer term outcomes. Brewin (1991) has also argued for a more situational view of causal explanation. He suggests that beliefs about social causality derive from experiences with powerful others and that aspects of this knowledge, coded in a variety of ways, may be accessed at different times. Consequently, attributional styles observable following a disaster, when someone is depressed or in an unusual circumstance, for example, admission to a residential treatment facility, may be somewhat different from the styles that they would endorse under less extreme circumstances.

To explore this hypothesis further it would be necessary to find ways of bypassing the surface attributional reports. Utilising interview formats has been shown to be effective in eliciting information from individuals considered to have a repressive coping style and it may be that utilising less overt strategies to encourage participants to talk about or report attributions may be more effective.

6.5 A theoretical model.

Earlier in this chapter I stated that the key theme to understanding the relatedness between global self-esteem, autobiographical memory function and attributional style lay in their derivation from attachment working models. The relationships between each of these cognitive variables and attachment theory have been explored in each section of this chapter. Finally, therefore, I would like to outline a potential mechanism whereby these variables could be inter-related in testable ways.

I will describe each of the attachment classifications as discussed by Main (1991) and explore the potential impact of the attachment status of the parent on their parenting style and the resulting consequences for the child and his or her development. I will extend Main's (1991) descriptions to make some suggestions regarding the impact of attachment status in adolescence and on the metacognitive features which have been the main focus for this chapter. Part of the descriptions will utilise Linehan's notion of invalidation (Linehan, 1993a). Linehan has described a transactional model of the development of borderline personality disorder. One key component of this model is the

experience of being invalidated by a caregiver. This involves the emotions of a biologically vulnerable child either being ignored, dismissed or disqualified over prolonged periods and, it is proposed, have a profound impact on the development of emotion regulation skills and sense of self. In what follows, I extend Linehan's description of invalidation to examine the impact of this experience in different attachment contexts.

Children who experience secure attachment relationships. These children, generally, are born to parents who are securely attached themselves, who have a coherent working model of their own attachment relationships and are able to reflect upon their model and the evidence for it. Such parents, as described by Fonagy and colleagues (Fonagy, Steele, Moran, Steele & Higgit, 1991) possess the capacity for reflective self-function, the ability to reflect on the self and as such to have the mental space to consider the infant as a separate mental entity with needs and wishes of its own. Consequently, they are able to be sensitive and responsive caregivers and to provide a sense of safety and a "secure base" both physically and psychologically. As has been demonstrated in the innovative work of Fonagy and collaborators the attachment status of the parent impacts significantly upon that of the child such that children of secure parents are often secure themselves and have improved peer relationships and cognitive abilities in mid-childhood (Fonagy, 1996). Secure attachment experiences should contribute to the development of optimal global self-esteem. Within this context the child will be best placed to learn new skills and evaluate their competencies accurately. The environment that they grow up in is likely to be validating (Linehan, 1993a) and as such will enable them to learn about the functions of emotions, their connections to environmental events and

how to effectively regulate them. I would predict that the opportunity to discuss feelings, their links to events in the environment and the behaviour of the individual, within a supporting environment, is likely to lead to the development of a truly functional attributional style which derives its links from a rich and accessible autobiographical memory base. These adolescents, as described by Kroger (1989), are likely to pass through moratorium and achieve identity status in most areas. It is unlikely that any of the adolescents in this sample benefited from such early experiences.

Children with experiences of insecure-avoidant attachment. The parents of such children are often dismissing of attachment issues and their autobiographical remembrances often invalidate the global descriptions they give of their attachment relationships. There is an idealisation of the past with insufficient or often unsupporting evidence advanced in its favour (Main, 1991). I would suggest that children brought up in such an environment learn to become detached at an early age, to inhibit distress and to become prematurely independent; this may be reinforced and normalised and the experience of distress invalidated. There is likely, therefore, to be little discussion of emotions and their links with environmental events and, consequently, little training in emotion regulation. The emphasis will be on coping and "putting a brave face on it". Such a parenting style is likely to sow the seeds of low self-esteem as there is an absence of relatedness and perhaps a sense of absence of the self as the looking glass is unreflective. In such circumstances children may learn to be dismissing of their emotional state and to adopt what are considered socially acceptable styles of relating and explaining the world around them. I would predict that the absence of

relatedness and connection with others - the origins of the later dismissing style of attachment seen in their parents - may lead to a mismatch between their outer presentation and their inner experience. These children may then show repressive coping with superficially adaptive attributional styles.

During adolescence the increased stress and pressure, both from developmental and societal changes, may find the adolescent's skills wanting in terms of coping. They are perhaps most likely to present with disorders that mask the underlying problems, such as anorexia nervosa, school refusal or psychosomatic disorders. In autobiographical memory terms, they are most likely to have learned to use memory in the service of pragmatic retrieval of information, on the basis of early social interaction which did not focus on constructing a relevant interpersonal narrative. In a testing situation they may only provide categorical or socially acceptable information unless they have started to challenge their view on the relationship of memory to the sense of self.

In adolescence they are likely to foreclose on identity issues as they may lack the coping skills to address them. In treatment they are likely to be difficult to engage, dismissive of treatment and also of their problems, believing that they just ought to cope.

Children who experience insecure-ambivalent attachment. These children are often born to parents who are preoccupied with attachment issues and overwhelmed with unresolved attachment issues. Their working model lacks coherence. Consequently, they lack the capacity for reflective self-function

and are unable to view their infant as a separate entity. They may perceive legitimate demands for food and comfort as deliberate acts of aggression towards themselves and they may look towards the child to meet emotional needs of their own (Fonagy *et al*, 1991). Such children learn to be high monitors of their parents' emotional state, unsure of whether they will receive a favourable or rejecting response (Main, 1991). This high level of monitoring of another's mental state leaves little room for the development of meta-cognitive monitoring of their own and as such they may be delayed in these skills. They are also likely to be vulnerable to the dual coding of events as described by Main (1991). In such an environment they will learn emergency responses to emotions as escalating displays of emotion are likely to be reinforced. These children are likely to present early with problems and enter adolescence with a history of conduct and emotional disorders. Access to autobiographical memory may be affected primarily by their emotional state in the moment and will be facilitated by a secure relationship with the therapist.

In adolescence these children are likely to have a diffused identity status. In treatment they will probably seek to engage but be like "butterflies" (Linehan, 1993a) mirroring their early attachment relationships. I would predict that they are likely to be overwhelmed with negative affect, to have a self-blaming attributional style, which under some circumstances may fluctuate to blaming others, and negative cognitions linked to painful memories in the past. They may experience difficulty in navigating away from these painful sites within their memory. They may come to use ambivalent attachment as a way of regulating exposure to these memories.

Children who have experienced insecure-disorganised attachment. This category is currently less well researched than the others. However, parents of such children are often unresolved themselves with respect to loss or trauma. At an early stage, these children display unusual behaviours in the presence of their attachment figure which seem to relate to the attachment figure either being frightened or frightening at times (Main, 1991). These children often grow up with a high level of insecurity often accompanied by abuse and neglect, which they may counter by developing controlling strategies towards the caregiver (Cassidy & Marvin, 1991; Wartner et al, 1994). They are chronically invalidated and their sense of boundary and self is constantly violated. They are likely to have internalised a strong theme of self-blame and criticism and to have very low self-esteem and chronic lack of confidence in their abilities. Their recollections of childhood are likely to be fragmented and confusing as well as painfully distressing. In autobiographical memory terms they are likely to be generic and have difficulties navigating through the memory system. They will be particularly vulnerable to the formation of generalised incompatible schemas which may lead to inconsistent functioning and a strong sense of discontinuity of the self (Bolton & Hill, 1996). These features may only change in the context of a therapy which enables them to "find their own intentional being" (Fonagy, 1996) within the mind of the therapist.

In adolescence they are most likely to present with a diffused identity status and with severe psychiatric difficulties such as borderline personality disorder.

6.6 Methodological comment and suggestions for future research.

This thesis began with a review of recent research into the outcome of adolescents admitted to in-patient units, highlighting the methodological limitations of that work. Following a discussion of the practical difficulties presented in conducting high quality research in such settings, four suggestions for alternative approaches were made. The research findings reported here focused particularly on two of the alternative approaches; the exploration of cognitive variables related to mood and their ability to predict outcome.

There are a number of limitations to the research findings reported here. Firstly, the data are derived from a single sample during a single time period from one adolescent unit; numbers in all studies were small. The applicability of the findings to other adolescents admitted to both this unit at other times and to different units is, therefore, questionable. However, some of the features of the sample, in terms of gender, past parasuicidal behaviour and age are similar to other single unit descriptions; and the only multi-centre study of UK adolescent units found few differences in admission criteria between units (Wrate *et al*, 1994). It is possible, therefore, that the results reported here may contribute further to our understanding of adolescents admitted to residential facilities. Confirmation and replication of these findings is, of course, essential.

Secondly, the absence of both a control group and a follow-up period creates difficulties in the interpretation of some of the findings. With regard to the study of cognitive variables in chapter 3, it is unclear whether the findings relate to all adolescents or only to those with significant mood disturbance[2] The absence of a control group also prevents a direct ascription of the clinical changes observed in chapter 4 to the treatment. Without a follow-up period it is not possible to comment on the durability of the changes witnessed.

Finally, although the majority of measures utilised were of established reliability and validity, it is possible that for some of the variables considered such as autobiographical memory and attributional style, questionnaire methods may not have been the most useful. Employing questionnaire measures assumes that the variable being measured is an invariant trait characteristic, whereas as others have argued (Brewin, 1991; Brewin & Andrews, 1992) and as is suggested by the model described above, there may be contextual factors which impact significantly upon the results. It may only be by the employment of more contextually sensitive measures, for example studying participants self-generated causal accounts, that a comprehensive understanding of cognitive organisation and its relationship to mood disturbance can be obtained.

Despite these limitations, the findings presented in this thesis have made a contribution to the debate. The findings in chapter 2, perhaps the most similar

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[2] Ethical permission for the replication of this study in a non-clinical sample is currently awaited.

to previous research, are unusual in the breadth of variables measured and the emphasis on reliable and valid assessment measures. The study in chapter 3 is the first of its kind to explore the relationships between attributional style, autobiographical memory, problem-solving and mood in a single study in an adolescent sample. It indicated that there were significant differences in the way these variables relate in adolescents compared to adults and laid the foundation for the suggestions earlier in this chapter for a more detailed theoretical model concerning cognition and psychopathology in adolescence. Chapter 4 reported on clinical effectiveness, and is one of only a small number of studies which reports clinical outcome as assessed on measures of established reliability and validity. The prediction of outcome study in chapter 5, is the first of its type to test theoretical models of prediction. The utilisation of cognitive variables in such prediction is also rare and identifies a fruitful area for future investigation.

Following from the findings reported here, it appears that a comprehensive understanding of the relationship between cognition and mood disturbance in adolescence requires the exploration of the links between cognitive organisation and processes and internal working models of early relationships. I predict that cognitive organisation, and the processes governing navigation through the organisation, under conditions in which attachment related concepts are activated may differ. The model outlined in section 6.5 is an attempt to draw together literature from a number of sources to provide a theoretical framework in which to investigate this prediction. The model as outlined requires further development and specification of predictions. The following are four possible strategies to explore its suggestions further.

Strategy 1: The first strategy is to investigate the differences between clinical and non-clinical samples of adolescents in terms of autobiographical memory function. I would predict that non-clinical samples would demonstrate high levels of specificity in autobiographical recall but that they would be less likely to revisit the same specific memory. The clinical adolescents would also be specific but would be more likely to demonstrate the 'specific prototypical memory effect' i.e. revisiting the same memory in response to negative cues.

Strategy 2. This investigates the contextual recall hypothesis i.e. that the same participant will perform differently in autobiographical memory procedures depending upon who is asking them to recall the memories. I would predict that in the case of individuals with insecure attachment histories, testing by an unfamiliar researcher would result in more generic responses in comparison to testing by a familiar trusted person, for example, a therapist. In the latter case more specificity would be predicted on the context explanation. This would be predicted to occur in both adolescents and adults, although, adolescents may be observed to be more specific overall because of the high salience of self-themes at this period of development.

Strategy 3. This strategy seeks to test those aspects of the model which relate to attachment status and metacognitive skills in adolescence. The first task is to conduct cross-sectional studies of adolescents, measuring attachment status, attributional style, global self-worth and autobiographical memory responses, to examine whether the predicted differences in metacognitive skill are observed. Some of this work has already been conducted with regard to

identity status (Kroger, 1989). To fully elucidate the patterns, it would be necessary to use both questionnaire measures and also more contextually sensitive measures, to identify those adolescents who may be particularly sensitive to social desirability effects. On the basis of the model, this would be predicted to be those with insecure-avoidant attachment histories.

A more robust test of the model would be a longitudinal study exploring the changes in metacognitive organisation in children with previously known attachment histories as they progress into adolescence. The recent work of Fonagy (1996) is in this tradition, examining the metacognitive capacity of 5 year olds whose attachment status to both parents was measured at 12 months (mothers) and 18 months (fathers). In this study differences in metacognitive capacity were observed in the children according to their previous attachment status.

Strategy 4: This strategy examines the processes outlined in the model at work in therapy. This will involve longitudinal studies examining the inter-relationships between clinically significant mood changes, self-esteem, attributional style and specificity of autobiographical memory. There are a number of possible investigations here.

Example 1: Is attachment history a predictor of outcome in therapy? The model predicts that attachment pattern on entry into treatment will influence the likelihood of benefit from therapy, as internal working models will impact on the quality of the therapeutic relationship. Development of measures to directly assess the quality of attachment within the therapeutic relationship would

enable a more direct test of the model's predictions and assess whether the therapeutic relationship is a mediator between past attachment history and psychotherapeutic outcome.

Example 2: As a client progresses through therapy, do memories of all kinds (traumatic, neutral and trivial) improve in detail as the model would predict? The key test of the model is whether improvements in the quality of attachment within the therapeutic relationship impact on the ability to access more detailed memories. This latter test is dependent upon the availability of a reliable and valid measure of the attachment qualities of the therapeutic relationship.

Example 3: To investigate the link between therapeutic impact (Stiles *et al,* 1990) and cognitive variables. I would predict that therapeutic impacts would be reported when important cognitive changes take place, such as when "flexibility" returns to the memory system. For example, I would predict that a client would record a significant therapeutic impact when they experienced for the first time, a connection between their sense that they were always to blame and the detailed recollection of past experiences of being blamed inappropriately. Mood and self-esteem changes may also be observed around this time point. This effect may perhaps be most marked in those with serious psychopathology, such as borderline personality disorder, where such an event may be akin to experiencing the discovery of their "intentional being" within the mind of the therapist.

6.7. Summary.

This chapter has sought to provide a theoretical background to the findings of this thesis. It has utilised the results of the thesis, in conjunction with the literature, to advance a tentative model of the development of the cognitive and metacognitive processes in adolescence and their relationship to psychopathology. The model suggests that these processes can most fruitfully be studied, not in isolation, but in the context of early attachment relationships, which impact significantly on the development of the sense of self and the beliefs the adolescent holds about their physical, mental and social worlds.

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Appendix 1.

Current Problems: Adolescent

The aim of the team at XXXXX is to help you with your current difficulties. It would help us if, on the form below, you could describe what you see as your main problems at the moment and how troublesome they are to you.

Name:
Age:
Date:

Problem 1:

How troublesome is this problem to you at the moment? Please mark with a cross on the line below:

I	I	I	I	I
1	2	3	4	5
Slight Problem		Moderate Problem		Major Problem

Problem 2:

How troublesome is this problem to you at the moment? Please mark with a cross on the line below:

I	I	I	I	I
1	2	3	4	5
Slight Problem		Moderate Problem		Major Problem

Problem 3:

How troublesome is this problem to you at the moment? Please mark with a cross on the line below:

I	I	I	I	I
1	2	3	4	5
Slight Problem		Moderate Problem		Major Problem

Problem 4:

How troublesome is this problem to you at the moment? Please mark with a cross on the line below:

I	I	I	I	I
1	2	3	4	5
Slight Problem		Moderate Problem		Major Problem

Problem 5:

How troublesome is this problem to you at the moment? Please mark with a cross on the line below:

I	I	I	I	I
1	2	3	4	5
Slight Problem		Moderate Problem		Major Problem

Current Problems: Family or Guardian.

The aim of the team at XXXXX is to help your teenager with their current problems. It would help us if, on the form below, you could describe what you see as your child's main problems at the moment and how troublesome they are to you and your family. If you feel that there are problems which are not specific to your child but are relevant to the whole family please describe those as well.

Name of teenager:
Your name and relationship to the child:
Date:

Problem 1:

How troublesome is this problem to you at the moment? Please mark with a cross on the line below:

I	I	I	I	I
1	2	3	4	5
Slight Problem		Moderate Problem		Major Problem

Problem 2:

How troublesome is this problem to you at the moment? Please mark with a cross on the line below:

I	I	I	I	I
1	2	3	4	5
Slight Problem		Moderate Problem		Major Problem

Problem 3:

How troublesome is this problem to you at the moment? Please mark with a cross on the line below:

I	I	I	I	I
1	2	3	4	5
Slight Problem		Moderate Problem		Major Problem

Problem 4:

How troublesome is this problem to you at the moment? Please mark with a cross on the line below:

I	I	I	I	I
1	2	3	4	5
Slight Problem		Moderate Problem		Major Problem

Problem 5:

How troublesome is this problem to you at the moment? Please mark with a cross on the line below:

I	I	I	I	I
1	2	3	4	5
Slight Problem		Moderate Problem		Major Problem

AUTOBIOGRAPHICAL MEMORY TEST

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The Autobiographical Memory Test, based on Francis Galton's cue-word method as adapted by Lloyd & Lishman (1975), Crovitz (1975) and Robinson (1976), is now widely used as a method of assessing personal event memory in people with emotional disturbance.

In its original use with parasuicide patients, Williams & Broadbent (1986) used five positive and five negative words, presented in fixed order, with positive and negative alternating : *happy, sorry, safe, angry, interested, clumsy, successful, hurt, surprised,* and *lonely*. Subjects were given 60 seconds to retrieve a specific memory (an event lasting a day or less, which occurred at a certain place and time even if the subject could not remember when).

In subsequent experiments, more cue-words have been used, neutral cues have been introduced, and the time allowed to retrieve each memory cut to 30 seconds. Research has focused on the specificity of the subject's first memory response (i.e. excluding utterances such as "Ah, now let me think"!).

Instructions

I am interested in your memory for events that have happened in your life. I am going to read to you some words. For each word, I want you to think of an event that happened to you which the word reminds you of. The event could have happened recently (yesterday, last week) or a long time ago. It might be an important event, or a trivial event.

Just one more thing : the memory you recall should be of a specific event. So if I said the word "good" - it would not be O.K. to say "I always enjoy a good party", because that does not mention a specific event. But it would be O.K. to say "I had a good time at Jane's party" (because that is a specific event).

Let us try some words for practice : *enjoy*
friendly
bold

Coding Specificity

Sometimes it is clear that the response is a specific event ("the day I got my exam results" "the day my dad died" "last week getting drenched in a rainstorm") When it is unclear, (e.g. "getting drenched in Bangor", "getting exam results") the subject is prompted "can you think of a particular time"? If the subject says that they had a specific event in mind, and can say what it was, then their original response is coded "specific". Often, however, they will need to do some further work to retrieve an example of the "generic" memory they first responded with. For example :

cue-word : sorry

response : When I lie to my mum (coded generic)

prompt : can you think of a particular time?

response : last month, we had a blazing row (coded specific)

Occasionally, subjects will retrieve an event lasting longer than a day, (e.g. my holiday in Spain last year). Code this as an Extended memory. There is some evidence that being overgeneral in this respect is not related to emotional disturbance (Williams & Dritschel, 1992).

After the task

When all responses have been collected, memories are rated for how long ago they occurred and how pleasant/unpleasant they are.

The following page gives four parallel forms of positive, negative and neutral words, as used by Brittlebank et al (1993).

For further details of the experimental use of these procedures, see References list.

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Modified Means Ends Problem Solving Test.

(Platt & Spivack 1975a)

Instructions

In this procedure I am interested in your imagination. You are to make up some stories. For each story you will be given the beginning of the story and how the story ends. Your job is to make up a story that connects the beginning that is given to you with the ending given to you. In other words, you will make up the middle of the story.

Problems.

1. H. loved his girlfriend very much, but they argued a lot. One day she left him. H. wanted things to be better. The story ends with everything fine between him and his girlfriend. You begin the story with his girlfriend leaving him after an argument.

2. Mr. P. came home after shopping and found that he had lost his watch. He was very upset about it. The story ends with Mr. P. finding his watch and feeling pleased about it. You begin the story where Mr. P. found that he had lost his watch.

3. Mr. C. had just moved in that day and didn't know anyone. Mr. C. wanted to make friends in his neighbourhood. The story ends with Mr. C. having many good friends and feeling at home in the neighbourhood. You begin the story with Mr. C. in his room immediately after having arrived in the neighbourhood.

4. One day Al saw a beautiful girl in a restaurant. He was immediately attracted to her. The story ends when they get married. You begin when Al first notices the girl in the restaurant.

5. John noticed that his friends seemed to be avoiding him. John wanted to have friends and be liked. The story ends when John's friends like him again. You begin when he first notices that his friends are avoiding him.

Appendix 2

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SET LENGTH=NONE/WIDTH=80
TITLE PREDICTION OF OUTCOME
DATA LIST FILE=GWYNFADAT.TXT3,FIXED,NOTABLE,RECORDS=5
     /1 SNO 1-2 AGE 3-4 SEX 5 HOD 6 HDU 7 SCM 8-9 SHM 10-11
      UNM 12-13 IMM 14-15
     OCD 16-17 HOW 18-19 DLM 20-21 AGM 22-23 HYM 24-25 ANX 26-
      27 SCF 28-29
     SHF 30-31 DEP 32-33 IMF 34-35 DLF 36-37 ARF 38-39 CRU 40-
      41 ACT 42-44
     SOC 45-47 INT 48-49 EXT 50-51 DPM 52-53 UPM 54-55 YSC 56-
      57 SDM 58-59
     THM 60-61 DEM 62-63 YAG 64-65 SOM 66-67 DPF 68-69 UPF 70-
      71 THF 72-73
     YAF 74-75 DEF 76-77 YAC 78-80
     /2  YSO 1-3 YIN 4-5 YEX 6-7 ABDI 8-9 ABAI 10-11 ABHS 12-
      13 ASTA 14-15
     ATRA 16-17 ATAT 18-19 ATAR 20-21 AAXI 22-23 AAXO 24-25
      AAXC 26-27
     AAXE 28-29 SCC 30-32 SCI 33-35 SAC 36-38 SAI 39-41 ACC
      42-44 ACI 45-47
     PAC 48-50 PAI 51-53 JCC 54-56 JCI 57-59 RAC 60-62 RAI 63-
      65 BCC 66-68
     BCI 69-71 CFC 72-74 CFI 75-77 GSW 78-80
     /3 ASD 1-4 ARP 5-6 ARN 7-8 MEPS 9-10 ALAT 11-14 LPO 15-18
      LNE 19-22
     SPEC 23-24 CPOS 25-26 CNEG 27-28 TOT 29-31 ANAD 32-33
      ANFA 34-35
     AASE 36-37 AFSV 38-39 APS 40-42 ACM 43-45 ARO 46-48 AAR
      49-51
     AAI 52-54 ABC 55-57 AGF 58-60 FPS 61-63 FCM 64-66 FRO 67-
      69
     FAR 70-72 FAI 73-75 FBC 76-78
     /4 FGF 1-3 DBDI 4-5 DBAI 6-7 DBHS 8-9 DSTA 10-11 DTRA 12-
      13 DTAT 14-15
     DTAR 16-17 DAXI 18-19 DAXO 20-21 DAXC 22-23 DAXE 24-25
      DRP 26-27
     DRN 28-29 DNAD 30-31 DNFA 32-33 DASE 34-35 DFSV 36-37 AUR
      38-39
     AOE 40-41 DUR 42-43 DOR 44-45 ELE 46 ELM 47 TOU 48-50 AMO
      51
     ICD 52 LOS 53-55 CSA 56 BDIA 57-58 BHSA 59-60 SPO 61 SNE
      62
     CSPEC 63-64 FSPEC 65-66 FSPO 67 FSNE 68
     /5 PSMMS 1-2 PSEMS 3-4 PSMSH 5-6 PSESH 7-8 FAMTS 9 FAMTP
      10 FAMTN 11
     FAMTT 12-13
VARIABLE LABELS SNO 'SUBJECT NUMBER' AGE 'AGE' SEX 'GENDER'
     HOD 'PARASUICIDE' HDU 'DRUG USE' SCM 'CBC BOYS I' SHM
      'CBC BOYS II'
     UNM 'CBC BOYS III' IMM 'CBC BOYS IV' OCD 'CBC BOYS V' HOW
      'CBC BOYS VI'
     DLM 'CBC BOYS VII' AGM 'CBC BOYS VIII' HYM 'CBC BOYS IX'
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ANX 'CBC GIRLS I' SCF 'CBC GIRLS II' SHF 'CBC GIRLS III'
DEP
'CBC GIRLS IV' IMF 'CBC GIRLS V' DLF 'CBC GIRLS VI' AGF
'CBC GIRLS VII'
CRU 'CBC GIRLS VIII' ACT 'CBC ACTIVITIES' SOC 'CBC
SOCIAL' INT
'CBC INTERNALISING' EXT 'CBC EXTERNALISING' DPM 'YSR BOYS
I'
UPM 'YSR BOYS II' YSC 'YSR BOYS III' SDM 'YSR BOYS IV'
THM
'YSR BOYS V' DEM 'YSR BOYS VI' YAG 'YSR BOYS' SOM 'YSR
GIRLS I'
DPF 'YSR GIRLS II' UPF 'YSR GIRLS III' THF 'YSR GIRLS IV'
YAF 'YSR GIRLS V' DEF 'YSR GIRLS VI' YAC 'YSR ACTIVITIES'
YSO 'YSR SOCIAL' YIN 'YSR INTERNALISING' YEX 'YSR
EXTERNALISING'
ABDI 'BDI ADMISSION' ABAI 'BAI ADMISSION' ABHS 'BHS
ADMISSION'
ASTA 'STAXI STATE AD' ATRA 'STAXI TRAIT AD' ATAT 'STAXI
TANGT AD'
ATAR 'STAXI TANGR AD' AAXI 'STAXI IN AD' AAXO 'STAXI OUT
AD'
AAXC 'STAXI CON AD' AAXE 'STAXI EX AD' SCC 'SCHOOL
COMPETENCE'
SCI 'SCHOOL IMP' SAC 'SOCIAL COMPETENCE' SAI 'SOCIAL IMP'
ACC 'ATHLETIC COMPETENCE' ACI 'ATHLETIC IMP' PAC
'PHYSICAL COMPETENCE'
PAI 'PHYSICAL IMP' JCC 'JOB COMPETENCE' JCI 'JOB IMP'
RAC 'ROMANTIC COMPETENCE' RAI 'ROMANTIC IMPORTANCE'
BCC 'BEHAVIOUR COMPETENCE'
BCI 'BEHAVIOUR IMP' CFC 'FRIENDSHIP COMPETENCE' CFI
'FRIENDSHIP IMP'
GSW 'GLOBAL SELF-WORTH' ASD 'AV SUM DIFFERENCE' ARP
'ROSENBERG POS AD'
ARN 'ROSENBERG NEG AD' MEPS 'MEPS SUM' ALAT 'AMT AV
LATENCY' LPO
'LATENCY POS' LNE 'LATENCY NEG' SPEC 'SPECIFICITY' CPOS
'ASQ POS'
CNEG 'ASQ NEG' TOT 'CP-CN' ANAD 'ADOL PROBS AD' ANFA
'FAMILY PROBS AD'
AASE 'ADOL SEVERITY AD' AFSV 'FAM SEVERITY AD' APS 'FAD
ADOL PROB SOLV'
ACM 'FAD ADOL COMMUNICATION' ARO 'FAD ADOL ROLES'
AAR 'FAD ADOL AFFECTIVE RESPONSIVENESS'
AAI 'FAD ADOL AFFECTIVE INVOLVEMENT' ABC 'FAD ADOL
BEHAVIOUR CONTROLS'
AGF 'FAD ADOL GENERAL FUNCTIONING' FPS 'FAD FAMILY PROB
SOLV'
FCM 'FAD FAMILY COMMUNICATION' FRO 'FAD FAMILY ROLES'
FAR 'FAD FAMILY AFFECTIVE RESPONSIVENESS'
FAI 'FAD FAMILY AFFECTIVE INVOLVEMENT'
FBC 'FAD FAMILY BEHAVIOUR CONTROLS' FGF 'FAD FAMLY
BEHAVIOUR CONTROLS'
DBDI 'BDI DISCHARGE' DBAI 'BAI DISCHARGE' DBHS 'BHS
DISCHARGE'
DSTA 'STAXI STATE DIS' DTRA 'STAXI TRAIT DIS'

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     DTAT 'STAXI TANGT DIS' DTAR 'STAXI TANGR DIS' DAXI 'STAXI
      IN DIS'
     DAXO 'STAXI OUT DIS' DAXC 'STAXI CON DIS' DAXE 'STAXI EX
      DIS'
     DRP 'ROSENBERG POS DIS' DRN 'ROSENBERG NEG DIS' DNAD
      'ADOL PROBS DIS'
     DNFA 'FAMILY PROBS DIS' DASE 'ADOL SEVERITY DIS'
     DFSV 'FAMILY SEVERITY DIS' AUR 'BRISTOL UNDER AD'
     AOE 'BRISTOL OVER AD' DUR 'BRISTOL UNDER DIS'
     DOR 'BRISTOL OVER DIS' ELE 'ED LEVEL ENGLISH' ELM 'ED
      LEVEL MATHS'
     TOU 'TEAM OUTCOME' AMO 'AMT OMMISSIONS' ICD 'ICD-10
      DIAGNOSIS'
     LOS 'LENGTH OF STAY' CSA 'CHILD SEXUAL ABUSE'
     BDIA 'BDI ASSESSMENT' BHSA 'BHS ASSESSMENT' SPO
      'SPECIFICITY POSITIVE'
     SNE 'SPECIFICITY NEGATIVE' CSPEC 'CORRECTED SPECIFICITY'
     FSPEC 'SPECIFICITY FIRST RESPONSE' FSPO 'SPEC FIRST POS'
     FSNE 'SPEC FIRST NEG' PSMMS 'MEANS MS' PSEMS 'EFFECT MS'
     PSMSH 'MEANS SH' PSESH 'EFFECT SH' FAMTS 'FINAL AMT SPEC'
     FAMTP 'FINAL AMT POS' FAMTN 'FINAL AMT NEG'
     FAMTT 'FINAL AMT TOT'
VALUE LABELS SEX 1 'MALE' 2 'FEMALE'/ HOD 0 'NO PARASUICIDE' 1
      'PARASUICIDE'/
     HDU 0 'NO DRU USE' 1 'DRUG USE'/ ICD 1 'DEPRESSION
      ANXIETY'
     2 'CONDUCT DISORDER' 3 'MIXED CONDUCT EMOTIONAL DISORDER'
     4 'OTHERS'/ CSA 0 'NO CSA' 1 'CSA'
*LIST VARIABLES=SNO
*MEANS AGE TO LOS BY SEX
*CORRELATIONS VARS=YIN YEX INT EXT BDIA ABAI BHSA ASTA ATRA
      ATAT ATAR
     AAXI AAXO AAXC AAXE APS ACM ARO AAR AAI ABC AGF FPS FCM
      FRO FAR
     FAI FBC FGF/PRINT=SIG
*CORRELATIONS VARS=SCC SCI SAC SAI ACC ACI PAC PAI JCC JCI RAC
      RAI BCC BCI
     CFC CFI GSW ASD ARP ARN/PRINT=SIG
*CORRELATIONS VARS=ABDI ABHS MEPS ALAT LPO LNE SPEC CPOS CNEG
      TOT
*CORRELATIONS VARS=BDIA BHSA ABAI ATRA AAXE ARP ARN GSW
*PARTIAL CORR VARS=BHSA ABAI ATRA AAXE ARP ARN GSW BY BDIA
*MEANS ANAD TO AFSV BY SEX
*MEANS DNAD TO DFSV BY SEX
*CORRELATIONS VARS=DBDI DBAI DBHS DSTA DTRA DTAT DTAR DAXI
      DAXO DAXC
     DAXE DRP DRN DASE DFSV DUR DOR TOU/PRINT=SIG
*T-TEST GROUPS=SEX (1,2)
     /VARS=ACT SOC YAC YSO GSW ASD ELE ELM LOS
*T-TEST GROUPS=SEX (1,2)
     /VARS=AGE
*CORRELATIONS VARS=AGE ELE ELM YIN YEX INT EXT
*T-TEST PAIRS INT YIN
*T-TEST PAIRS EXT YEX
*T-TEST GROUPS=SEX (1,2)
    /VARS=ARP ARN
```

```
*RELIABILITY VARS=APS ACM ARO AAR AAI ABC AGF
     /SCALE (AFAD)=APS ACM ARO AAR AAI ABC AGF
     /SUMMARY=COV TOTAL
*RELIABILITY VARS=FPS FCM FRO FAR FAI FBC FGF
     /SCALE (FFAD)=FPS FCM FRO FAR FAI FBC FGF
     /SUMMARY=COV TOTAL
COMPUTE AAXC=-AAXC
*RELIABILITY VARS=BDIA ABAI BHSA ASTA ATRA ATAT ATAR AAXI AAXO
      AAXC AAXE
     /SCALE (NEGAFF)=BDIA ABAI BHSA ASTA ATRA ATAT ATAR AAXI
      AAXO AAXC AAXE
     /SUMMARY=COV TOTAL
DESCRIPTIVES VARS=BDIA BHSA ABDI ABHS ABAI APS ACM ARO AAR AAI
      ABC
    AGF FPS FCM FRO FAR FAI FBC FGF
     /SAVE
COMPUTE TBDIA=(ZBDIA * 10) + 50
COMPUTE TBHSA=(ZBHSA * 10) + 50
COMPUTE TABDI=(ZABDI * 10) + 50
COMPUTE TABHS=(ZABHS * 10) + 50
COMPUTE TABAI=(ZABAI * 10) + 50
COMPUTE TAPS=(ZAPS * 10) + 50
COMPUTE TACM=(ZACM * 10) + 50
COMPUTE TARO=(ZARO * 10) + 50
COMPUTE TAAR=(ZAAR * 10) + 50
COMPUTE TAAI=(ZAAI * 10) + 50
COMPUTE TABC=(ZABC * 10) + 50
COMPUTE TAGF=(ZAGF * 10) + 50
COMPUTE TFPS=(ZFPS * 10) + 50
COMPUTE TFCM=(ZFCM * 10) + 50
COMPUTE TFRO=(ZFRO * 10) + 50
COMPUTE TFAR=(ZFAR * 10) + 50
COMPUTE TFAI=(ZFAI * 10) + 50
COMPUTE TFBC=(ZFBC * 10) + 50
COMPUTE TFGF=(ZFGF * 10) + 50
COMPUTE NEGAFF=MEAN (TBDIA, TBHSA, TABAI, ASTA, ATRA, ATAT,
      ATAR, AAXI,
     AAXO, AAXC, AAXE)
COMPUTE AFAD=MEAN (TAPS, TACM, TARO, TAAI, TAAR, TABC, TAGF)
COMPUTE FFAD=MEAN (TFPS, TFCM, TFRO, TFAI, TFAR, TFBC, TFGF)
*RELIABILITY VARS=BDIA BHSA ABAI ASTA ATRA
   /SCALE (AAFFECT)=BDIA BHSA ABAI ASTA ATRA
   /SUMMARY=COV TOTAL
*RELIABILITY VARS=DBDI DBHS DBAI DSTA DTRA
   /SCALE (DAFFECT)=DBDI DBHS DBAI DSTA DTRA
   /SUMMARY=COV TOTAL
*CORRELATIONS VARS=AGE YIN YEX NEGAFF AFAD FFAD
*SORT CASES BY SEX
*SPLIT FILE BY SEX
*CORRELATIONS VARS=AGE YIN YEX NEGAFF AFAD FFAD
*IF (SEX=1 AND AGE LE 14) GRP=1
*IF (SEX=2 AND AGE LE 15) GRP=1
*IF (SEX=1 AND AGE GE 14) GRP=2
*IF (SEX=2 AND AGE GE 15) GRP=2
*ANOVA GSW BY GRP (1,2) SEX (1,2)
  /STATISTICS=MEANS
```

```
*FREQUENCIES VARS=AGE
  /STATISTICS=DEFAULT MEDIAN
*CORRELATIONS VARS=DPM UPM YSC SDM THM DEM YAG SCC SAC ACC PAC
      JCC RAC BCC CFC GSW ARP ARN
*CORRELATIONS VARS=SOM DPF UPF THF YAF DEF SCC SAC PAC
      JCC RAC BCC CFC GSW ARP ARN
*CORRELATIONS VARS=DPM UPM YSC SDM THM DEM YAG APS ACM ARO AAR
      AAI ABC AGF
*CORRELATIONS VARS=SOM DPF UPF THF YAF DEF APS ACM ARO
      AAR AAI ABC AGF
*CORRELATIONS VARS=GSW NEGAFF
*CORRELATIONS VARS=INT EXT YIN YEX NEGAFF AFAD FFAD
*ANOVA VARS=NEGAFF BY ICD (1,4)
*ANOVA VARS=YIN BY ICD (1,4)
     /YEX BY ICD (1,4)
*ANOVA VARS=NEGAFF BY HOD (0,1)
*T-TEST GROUPS=SEX (1,2)
     /VARS=YIN YEX INT EXT NEGAFF
*T-TEST GROUPS=HOD (0,1)
    /VARS=YIN YEX INT EXT NEGAFF
*PARTIAL CORR VARS=YIN YEX INT EXT AFAD FFAD BY NEGAFF (1)
*PARTIAL CORR VARS=YIN YEX INT EXT NEGAFF BY AFAD (1)
*PARTIAL CORR VARS=AFAD NEGAFF BY YEX (1)
*PARTIAL CORR VARS=AFAD NEGAFF BY YIN (1)
*PARTIAL CORR VARS=MEPS ALAT LPO LNE SPEC ABHS BY ABDI
*CORRELATIONS VARS=NEGAFF ASD ARP ARN
*CORRELATIONS VARS=AFAD FFAD ASD ARP ARN
*T-TEST GROUPS=HOD (0,1)
     /VARS=ASD ARP ARN AFAD FFAD
*T-TEST PAIRS LPO LNE
*T-TEST PAIRS AASE AFSV
*T-TEST PAIRS DASE DFSV
*COMPUTE SPOM=SPEC / (10 - AMO)
*CORRELATIONS VARS=MEPS NEGAFF SPEC SPOM ALAT LPO LNE
*T-TEST GROUPS=HOD (0,1)
     /VARS=MEPS SPEC SPOM ALAT LPO LNE
*CORRELATIONS VARS=SPOM CPOS CNEG TOT
*PARTIAL CORR VARS=ABHS MEPS SPEC ALAT LPO LNE BY ABDI
*NPAR TESTS CHISQUARE=ICD HOD
*NPAR TESTS CHISQUARE=ICD HDU
*CROSSTABS ICD BY HOD
     /STATISTICS
*CROSSTABS ICD BY HDU
     /STATISTICS
*CROSSTABS ICD BY SEX
     /STATISTICS
*CROSSTABS HOD BY SEX
     /STATISTICS
*CROSSTABS HDU BY SEX
     /STATISTICS
COMPUTE DAXC=-DAXC
*RELIABILITY VARS=DBDI DBAI DBHS DSTA DTRA DTAT DTAR DAXI DAXO
      DAXC DAXE
     /SCALE (PONEGAFF)=DBDI DBAI DBHS DSTA DTRA DTAT DTAR DAXI
      DAXO DAXC DAXE
     /SUMMARY=COV TOTAL
```

```
DESCRIPTIVES VARS=DBDI DBAI DBHS
     /SAVE
COMPUTE TDBDI=(ZDBDI * 10) + 50
COMPUTE TDBAI=(ZDBAI * 10) + 50
COMPUTE TDBHS=(ZDBHS * 10) + 50
COMPUTE PONEGAFF=MEAN (TDBDI, TDBAI, TDBHS, DSTA, DTRA, DTAT,
      DTAR, DAXI,
     DAXO, DAXC, DAXE)
*CORRELATIONS VARS=AGE SPEC PONEGAFF
*REGRESSION VARS=ABDI ABHS CNEG CPOS LPO LNE GSW SPEC
   /STATISTICS=DEFAULT CHA ZPP/MISSING=PAIRWISE
   /DEPENDENT=ABDI/ENTER CPOS/ENTER CNEG/ENTER LPO/ENTER GSW
   /DEPENDENT=ABDI/ENTER GSW/ENTER CPOS/ENTER CNEG/ENTER LPO
   /DEPENDENT=ABHS/ENTER ABDI/ENTER LNE/ENTER SPEC
*MANOVA LPO LNE BY HOD (0,1)
  /WSFACTOR=LATENCY (2)
  /PRINT=CELLINFO (MEANS)
  /DESIGN
*COMPUTE ADSELFES=(ARP - ARN)
*COMPUTE DISELFES=(DRP - DRN)
*T-TEST GROUPS=SEX (1,2)
     /VARS=BDIA ABAI BHSA ASTA ATRA AAXI AAXO AAXC
*TEMPORARY
*SELECT IF (LOS GE 70)
*MANOVA AUR DUR BY SEX (1,2)
     /WSFACTOR=TIME (2)
     /PRINT=CELLINFO (MEANS)
     /DESIGN
*MANOVA AOE DOR BY SEX (1,2)
     /WSFACTOR=TIME (2)
     /PRINT=CELLINFO (MEANS)
     /DESIGN
*MANOVA ARP DRP BY SEX (1,2)
     /WSFACTOR=TIME (2)
     /PRINT=CELLINFO (MEANS)
     /DESIGN
*MANOVA ARN DRN BY SEX (1,2)
     /WSFACTOR=TIME (2)
     /PRINT=CELLINFO (MEANS)
     /DESIGN
*MANOVA AASE DASE BY HOD (0,1)
      /WSFACTOR=TIME (2)
     /PRINT=CELLINFO (MEANS)
     /DESIGN
*MANOVA AFSV DFSV BY HOD (0,1)
     /WSFACTOR=TIME (2)
     /PRINT=CELLINFO (MEANS)
     /DESIGN
*MANOVA BDIA DBDI BY HOD (0,1)
     /WSFACTOR=TIME (2)
     /PRINT=CELLINFO (MEANS)
     /DESIGN
*MANOVA ABAI DBAI BY HOD (0,1)
     /WSFACTOR=TIME (2)
     /PRINT=CELLINFO (MEANS)
     /DESIGN
```

```
*MANOVA BHSA DBHS BY HOD (0,1)
      /WSFACTOR=TIME (2)
      /PRINT=CELLINFO (MEANS)
      /DESIGN
*MANOVA ASTA DSTA BY HOD (0,1)
      /WSFACTOR TIME (2)
      /PRINT=CELLINFO (MEANS)
      /DESIGN
*MANOVA ATRA DTRA BY SEX (1,2)
      /WSFACTOR=TIME (2)
      /PRINT=CELLINFO (MEANS)
      /DESIGN
*MANOVA AAXI DAXI BY HOD (0,1)
      /WSFACTOR=TIME (2)
      /PRINT=CELLINFO (MEANS)
      /DESIGN
*MANOVA AAXO DAXO BY HOD (0,1)
      /WSFACTOR=TIME (2)
      /PRINT=CELLINFO (MEANS)
      /DESIGN
*MANOVA AAXC DAXC BY HOD (0,1)
      /WSFACTOR=TIME (2)
      /PRINT=CELLINFO (MEANS)
      /DESIGN
*SELECT IF (DBHS GE 0 AND LOS GE 70)
*COMPUTE PROBS=0
*IF (DASE GE 0) PROBS=1
*MANOVA BDIA DBDI ABAI DBAI BHSA DBHS ASTA DSTA ATRA DTRA
      BY HOD (0,1)
      /WSFACTOR=TIME (2)
      /MEASURE BDI BAI BHS STA TRA
      /WSDESIGN=TIME
      /PRINT=CELLINFO (MEANS)
      /DESIGN
*MEANS DRP DRN BY SEX
*T-TEST PAIRS=ARP DRP
*T-TEST PAIRS=ARN DRN
*MANOVA NEGAFF PONEGAFF ADSELFES DISELFES BY SEX (1,2)
      /WSFACTOR=TIME (2)
      /WSDESIGN=TIME
      /PRINT=CELLINFO (MEANS)
      /DESIGN
*MANOVA NEGAFF PONEGAFF BY HOD (0,1)
      /WSFACTOR=TIME (2)
      /PRINT=CELLINFO (MEANS)
      /DESIGN
COMPUTE AAFFECT=MEAN (TBDIA, TBHSA, TABAI, ASTA, ATRA)
*COMPUTE AFFSPEC=MEAN (TABDI, TABHS, TABAI, ASTA, ATRA)
COMPUTE DAFFECT=MEAN (TDBDI, TDBHS, TDBAI, DSTA, DTRA)
*NPAR TESTS CHISQUARE=ICD TOU
*ANOVA VARS=DAFFECT BY ICD (1,4)
*CORRELATIONS VARS=YIN YEX BDIA BHSA ABAI ASTA ATRA AAXI AAXO
      AAXC AAFFECT
*CORRELATIONS VARS=AAFFECT AGE YIN YEX INT EXT AFAD FFAD
*CORRELATIONS VARS=GSW AAFFECT BDIA BHSA ABAI ASTA ATRA
*CORRELATIONS VARS=GSW INT EXT
```

```
*PARTIAL CORR VARS=GSW ABAI ABHS ASTA ATRA BY BDIA
*T-TEST GROUPS=SEX (1,2)
    /VARS=BDIA BHSA
*T-TEST GROUPS=HOD (0,1)
   /VARS=GSW AFAD FFAD
*CORRELATIONS VARS=YIN YEX INT EXT AFAD FFAD
*PARTIAL CORR VARS=YIN YEX AAFFECT BY AFAD
*PARTIAL CORR VARS=INT EXT AAFFECT BY FFAD
*ANOVA VARS=AAFFECT YIN YEX AFAD FFAD BY ICD (1,4)
*CORRELATIONS VARS=AAFFECT DAFFECT NEGAFF PONEGAFF YIN YEX AGE
      CPOS CNEG
    PSMMS PSEMS FAMTS FAMTP FAMTN FAMTT GSW AFAD FFAD TOU LOS
      ALAT
*COMMENT MODEL 1 ADOLESCENT IDENTIFIED MEASURES
*REGRESSION VARS=SEX NEGAFF YIN YEX GSW AFAD LOS TOU PONEGAFF
     /STATISTICS=DEFAULT CHA ZPP/MISSING=PAIRWISE
     /DEPENDENT=TOU/ENTER SEX/ENTER NEGAFF/ENTER YIN/ ENTER
      YEX/
     ENTER GSW/ENTER AFAD/ENTER LOS
     /DEPENDENT=PONEGAFF/METHOD=ENTER NEGAFF/METHOD=TEST (SEX)
      (YIN)
     (GSW) (YEX) (AFAD) (LOS)/
*REGRESSION VARS=AAFFECT DAFFECT YIN YEX AFAD TOU
     /STATISTICS=DEFAULT CHA ZPP/MISSING=PAIRWISE
     /DEPENDENT=DAFFECT/ENTER AAFFECT/ENTER AFAD/ENTER
      YIN/ENTER YEX
     /DEPENDENT=TOU/ENTER AAFFECT/ENTER AFAD/ENTER YIN/ENTER
      YEX
*COMMENT MODEL 2 PARENT IDENTIFIED MEASURES
*REGRESSION VARS=SEX INT EXT FFAD AAFFECT DAFFECT TOU
     /STATISTICS=DEFAULT CHA ZPP/MISSING=PAIRWISE
     /DEPENDENT=TOU/ENTER SEX/ENTER INT/ENTER EXT/ENTER FFAD
     /DEPENDENT=DAFFECT/ENTER AAFFECT/ENTER SEX/ENTER
      INT/ENTER EXT
     /ENTER FFAD
*COMMENT MODEL 3 DISCREPANCY MODEL
*COMPUTE DCFAD=AFAD-FFAD
*COMPUTE DCBEHIN=YIN-INT
*COMPUTE DCBEHEX=YEX-EXT
*CORRELATIONS VARS=INT EXT FFAD DCBEHIN DCBEHEX DCFAD AAFFECT
      DAFFECT
*REGRESSION VARS=SEX AAFFECT DCFAD DCBEHIN DCBEHEX TOU DAFFECT
     /STATISTICS=DEFAULT CHA ZPP/MISSING=PAIRWISE
     /DEPENDENT=TOU/ENTER SEX/ENTER AAFFECT/ENTER
      DCBEHIN/ENTER DCBEHEX
     /ENTER DCFAD
     /DEPENDENT=DAFFECT/ENTER AAFFECT/ENTER DCBEHIN/ENTER
      DCBEHEX
     /ENTER DCFAD
     /DEPENDENT=DAFFECT/METHOD=ENTER AAFFECT/METHOD=TEST (SEX)
      (DCBEHIN)
     (DCBEHEX) (DCFAD)/
*COMPUTE DIS=1
*IF (DBHS GE 0) DIS=2
*T-TEST GROUPS=DIS (1,2)
   /VARS=AAFFECT
```

```
*COMMENT MODEL 1A ADOLESCENT COGNITIVE STYLE MODEL
SELECT IF (FAMTS GE 0)
*PARTIAL CORR VARS=DAFFECT FAMTN FAMTS BY YIN
*COMPUTE PSE=MEAN (PSEMS, PSESH)
*REGRESSION VARS=GSW YIN AAFFECT CPOS CNEG FAMTN TOU DAFFECT
     /STATISTICS=DEFAULT CHA ZPP/MISSING=PAIRWISE
     /DEPENDENT=DAFFECT/ENTER AAFFECT/ENTER YIN/ENTER GSW/
     ENTER CNEG/ENTER FAMTN
     /DEPENDENT=TOU/ENTER AAFFECT/ENTER GSW/ENTER CNEG/
     ENTER FAMTN
     /DEPENDENT=DAFFECT/METHOD=ENTER AAFFECT/METHOD=TEST (GSW)
      (CNEG) (FAMTN)
     (YIN)
*COMPUTE GRP=2
*IF (DBHS GE 0) GRP=1
*T-TEST GROUPS=GRP (1,2)
   /VARS=AAFFECT
*COMMENT PREDICTING NEGATIVE AFFECTIVITY FROM COGNITIVE STYLE
*REGRESSION VARS=CPOS CNEG MEPS ALAT FSPEC GSW NEGAFF ATRA
      AAXE BDIA BHSA
     /STATISTICS=DEFAULT CHA ZPP/MISSING=PAIRWISE/
     /DEPENDENT=NEGAFF/ENTER CPOS/ENTER CNEG/ENTER SPEC/ENTER
      ALAT/
     ENTER MEPS/ENTER GSW/
     /DEPENDENT=NEGAFF/METHOD=TEST (CPOS) (CNEG) (SPEC) (ALAT)
      (GSW) (MEPS)
     /DEPENDENT=AAXE/ENTER BDIA/ENTER CPOS/ENTER CNEG/ENTER
      SPEC/ENTER ALAT/
     ENTER MEPS/ENTER GSW/
     /DEPENDENT=ATRA/ENTER BDIA/ENTER CPOS/ENTER CNEG/ENTER
      SPEC/ENTER ALAT/
     ENTER MEPS/ENTER GSW/
*COMPUTE GRP=2
*IF (CSPEC GE 0) GRP=1
*T-TEST GROUPS=GRP(1,2)
   /VARS=YIN YEX INT EXT AAFFECT AFAD FFAD
SELECT IF (CSPEC GE 0)
*MEANS BDIA ATRA DTRA BY SEX
CORRELATIONS VARS=ATRA DTRA
*REGRESSION VARS=AAFFECT DAFFECT GSW CPOS CNEG FSPO FSNE
    /STATISTICS=DEFAULT CHA ZPP/MISING=PAIRWISE
    /DEPENDENT=DAFFECT/ENTER AAFFECT/ENTER GSW/ENTER
      CPOS/ENTER CNEG
    /ENTER FSPO/ENTER FSNE
*MEANS FAMTS FAMTN FAMTP FAMTT LPO LNE ALAT CPOS CNEG TOT BY
      SEX
*COMPUTE CTOT=CPOS+CNEG
*FREQUENCIES VARS=CPOS CNEG TOT CTOT
   /STATISTICS=DEFAULT MEDIAN
COMPUTE PSE=MEAN (PSEMS, PSESH)
COMPUTE PSM=MEAN (PSMMS, PSMSH)
*MEANS PSE PSM BY SEX
CORRELATIONS VARS=BHSA PSE PSM
SORT CASES BY SEX
SPLIT FILE BY SEX
*PARTIAL CORR VARS=PSE PSM FAMTP FAMTN BY LPO
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```
*PARTIAL CORR VARS=PSE PSM FAMTP FAMTN BY LNE
*CORRELATIONS VARS=BHSA BDIA LPO LNE PSE PSM
*PARTIAL CORR VARS=PSM LNE BY AGE
PARTIAL CORR VARS=PSE PSM LNE BY AGE
PARTIAL CORR VARS=PSE PSM LPO BY AGE
*CORRELATION VARS=AGE FAMTS FAMTP FAMTN FAMTT LPO LNE PSE PSM
*T-TEST GROUPS=SEX (1,2)
   /VARS=ABDI ABHS AGE CPOS CNEG TOT FAMTS FAMTP FAMTN FAMTT
      ALAT PSE PSM
*SORT CASES BY SEX
*SPLIT FILE BY SEX
*CORRELATIONS VARS=AGE FAMTS FAMTP FAMTN FAMTT ALAT LPO LNE
      PSE PSM
*COMPUTE OUTPA=2
*SELECT IF (DBHS GE 0 AND LOS GE 70)
*T-TEST PAIRS=AAXC DAXC
*PARTIAL CORR VARS=GSW FSPEC CSPEC FSPO FSNE BY ABDI
*CORRELATIONS VARS=GSW ARP ARN FSPEC CSPEC FSPO FSNE
*CORRELATIONS VARS=DBDI DBAI DBHS DSTA DTRA DAXI DAXO DAXC DRP
      DRN
   DASE DFSV
*CORRELATIONS VARS=BDIA ATRA GSW
*LIST SNO ARP DRP ARN DRN
*SORT CASES BY SLOS
*SPLIT FILE BY SLOS
*MEANS ABDI ABAI ABHS ASTA ATRA BY OUTPA
*T-TEST GROUPS=OUTPA (1,2)
    /VARS=AGE INT EXT YIN YEX GSW ARP ARN AASE AFSV ABDI ABAI
      ABHS ASTA ATRA
*CORRELATIONS VARS=CSPEC FSPEC ALAT LPO LNE
*T-TEST PAIRS=LPO LNE
*T-TEST GROUPS=HOD (0,1)
   /VARS=AAXI DAXI
*COMPUTE GRP=2
*IF (ABDI LE 20) GRP=1
*SORT CASES BY GRP
*SPLIT FILE BY GRP
*MEANS AGE ABDI ABHS SPO SNE CSPEC FSPEC FSPO FSNE CPOS CNEG
      MEPS BY SEX
*CORRELATIONS VARS=ABDI ABHS MEPS ALAT LPO LNE CSPEC FSPEC
      FSPO FSNE CPOS
    CNEG TOT
*T-TEST GROUPS=GRP (1,2)
   /VARS=CSPEC
*COMPUTE HOPE=2
*IF (ABHS LE 14) HOPE=1
*IF (ABDI GE 30) DEPR=2
*MANOVA FAMTP FAMTN BY HOPE (1,2)
   /WSFACTOR=SPECIFICITY (2)
   /PRINT CELLINFO (MEANS)
   /DESIGN
*MANOVA LPO LNE BY DEPR (1,2)
   /WSFACTOR=SPECIFICITY (2)
   /PRINT CELLINFO (MEANS)
   /DESIGN
*MANOVA FAMTP FAMTN BY CSA (0,1)
```

```
   /WSFACTOR=SPECIFICITY (2)
   /PRINT CELLINFO (MEANS)
   /DESIGN
*MANOVA FAMTP FAMTN BY HOD (0,1)
   /WSFACTOR=SPECIFICITY (2)
   /PRINT CELLINFO (MEANS)
   /DESIGN
COMPUTE ASQ=2
IF (TOT LE 0.5) ASQ=1
*T-TEST GROUPS=ASQ (1,2)
   /VARS=PSE PSM
T-TEST GROUPS=HOD (0,1)
   /VARS=FAMTN FAMTT PSE PSM ABDI ABHS LPO LNE ALAT
PARTIAL CORR VARS=ABHS CPOS CNEG BY ABDI
*MANOVA FAMTP FAMTN BY ASQ (1,2)
   /WSFACTOR SPECIFICITY (2)
   /PRINT CELLINFO (MEANS)
   /DESIGN
*FREQUENCIES VARS=ABHS
   /STATISTICS=DEFAULT MEDIAN
REGRESSION VARS=ABHS ABDI FAMTN CPOS CNEG GSW LNE LPO
   /STATISTICS=DEFAULT CHA ZPP/MISSING=PAIRWISE/
   /DEPENDENT=ABDI/METHOD=ENTER CNEG/ENTER CPOS/ENTER FAMTN/
   /DEPENDENT=ABDI/METHOD=ENTER GSW/ENTER CNEG/ENTER
      CPOS/ENTER FAMTN/
SORT CASES BY ASQ
SPLIT FILE BY ASQ
PARTIAL CORR VARS=ABHS FAMTS FAMTP FAMTN FAMTT PSE PSM BY ABDI
PARTIAL CORR VARS=ABDI FAMTS FAMTP FAMTN FAMTT PSE PSM BY ABHS
FINISH
```