

Volume I

Research component:

Literature review and empirical paper

by

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Overview

This thesis is submitted in part fulfilment of the requirements for the degree of Doctor of Clinical Psychology (ClinPsyD) at the University of Birmingham. The thesis contains the research and clinical practice work carried out over the duration of the clinical training program. All names and identifying features of participants and clients have been changed to preserve anonymity and confidentiality.

Volume I contains the research component, consisting of a literature review, an empirical paper and the public domain briefing paper. The literature review summarises the longitudinal research evidence which considers the relationship between parental psychological control and adolescent adjustment. The empirical paper explores Rational Emotive Behaviour Therapy (REBT) irrational beliefs in parents and adolescent offspring. The literature review was prepared for submission to *Child Development* and the empirical paper was prepared for submission to the *Journal of Rational-Emotive and Cognitive-Behavior Therapy*.

Volume II comprises the clinical practice component of the degree, consisting of five clinical practice reports (CPRs) submitted over the course of clinical training. CPR 1 presents a case formulation of social anxiety from cognitive and psychodynamic perspectives. CPR 2 is a service evaluation report, which investigates quality of life and therapeutic relationships in a Regional Secure Unit. CPR 3 sets out a case study of an 11-year-old boy with learning disabilities presenting with challenging behaviour at school. CPR 4 describes a single-case experimental design in which the Solihull Approach was used to intervene with a toileting problem in a 4-year-old girl. Finally, CPR 5 is an oral presentation concerning a case of an older adult referred for depression and fetishistic transvestism.

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Literature Review Paper

A Review of the Relationship between Parental Psychological Control
and Adolescent Adjustment: A Summary of Recent Longitudinal
Research

(Prepared for submission to Child Development)

A Review of the Relationship between Parental Psychological Control and Adolescent Adjustment: A Summary of Recent Longitudinal Research

Abstract

Over a decade ago Barber (1996) drew attention to parental psychological control as a ‘neglected construct’ that was pertinent to adolescent adjustment. Since this publication, and particularly in the last five years, a number of longitudinal studies have now been completed which, investigate the influence of parental psychological control on adolescent adjustment. The aim of this review was to systematically evaluate this body of literature with a view to clarifying the current state of knowledge about the relationship and the direction of influence, between parental psychological control and adolescent internalising and externalising. Fourteen papers were considered in this review, however, only four of these did not rely exclusively on adolescent self-report and avoided the potential confound of shared method bias. Methodology was found to be linked to the results reported, therefore, a major conclusion of this review is that future research should collect data from multiple sources. Overall, however, the studies reviewed provide further evidence of the link between parental psychological control and adolescent adjustment and suggest that this link is reciprocal.

Key words: psychological control; adolescent adjustment; internalising; externalising

Introduction

In the clinical literature, a link between psychologically controlling parent strategies and child psychopathology is recognised (Burbach & Bourdin, 1986; Hetherington & Martin, 1986) and family therapist researchers have identified relationship patterns which inhibit psychological autonomy (e.g., enmeshed relationships) and are detrimental to adjustment (Minuchin, 1974). In particular, clinical anecdote has linked parenting that is psychologically intrusive with internalising problems, especially anxiety and depression (Morris, Steinberg, Sessa, Avenevoli, Silk & Essex, 2002).

Until fairly recently, however, research considering the influence of parent psychological control has been hindered by two main issues. First, for many years investigations of parenting have been heavily influenced by the idea of typologies: parenting styles that consist of the aggregation of parenting behaviours (e.g., Baumrind, 1967, 1991). A typological approach, however, has made it difficult to ascertain which specific aspects of parenting style and which parenting behaviours are the most relevant to child adjustment (Darling & Steinberg, 1993; Galambos, Barker & Almeida, 2003). A second difficulty has been that researchers have tended to define the term 'control' broadly (Steinberg, 1990). This has meant that appropriate behavioural regulation (e.g., monitoring and supervision) has often been confused with inappropriate psychological control (e.g., intrusive and manipulative attempts to control child behaviour; Barber, 1996).

Whereas behavioural control communicates to a child which behaviours are unacceptable, psychological control communicates to a child that their thoughts, emotions and behaviours are unacceptable. Psychologically controlling strategies such as manipulation, guilt induction and expressions of disappointment and shame, undermine normal psychological and emotional development by inhibiting what would be a burgeoning sense of self-competence and autonomy (Mayseless & Scharf, 2009). Exposure to these strategies, therefore, is associated with child internalising problems such as depression and anxiety (Barber, 1996). According to Barber and Harmon (2002) the use of psychological control, unlike behavioural control strategies, is not rooted in

an explicit child rearing plan but reflects an intrapsychic disturbance in the parent which means they feel the need to protect their power in the parent-child relationship (Barber & Harmon, 2002).

Because psychological control is defined as a method, which uses intrusive means to deny a child's autonomy, it has been suggested to be especially damaging to adjustment in adolescence (Conger, Conger & Scaramella, 1997). During this stage of development young people need space and opportunity to develop peer relations and establish a clear sense of identity (Carr, 2006; Erikson, 1968). Parent efforts which are over-restrictive and undermine a child's attempts to develop their own thoughts and feelings might result in young people who are not in touch with their inner self which may lead them to become indecisive and anxious (Luyckx, Soenens, Vansteenkiste, Goossens & Berzonsky, 2007).

Barber (1996), drawing on the work of Becker (1964) and Schaefer (1965,) drew attention to psychological control as a neglected parenting construct that was salient to the psychological and social adjustment of young people. This paper prompted a number of researchers to specifically investigate this link. Barber and Harmon (2002) reviewed 34 studies, which measured psychological control and found that parent psychological control was overwhelmingly associated with poor outcome. For example, it is reported that psychological control was correlated with lower self-esteem, lower school grades, lower psychosocial maturity, higher internalised problems, lower self-reliance, higher defiant behaviour, higher eating disorders, higher delinquency, higher aggression, higher externalised problems, higher risky sexual behaviour and lower intrinsic motivation. In addition, Barber and Harmon (2002) report cross-cultural evidence that psychological control is consistently detrimental to adjustment. Even in relatively collectivist cultures (e.g., India and Gaza) where less emphasis is placed on individual autonomy, parent psychological control was associated with increased rates of depression and antisocial behaviour in adolescents (Barber & Harmon, 2002).

The accumulated evidence clearly shows that there is a link between parent psychological control and adolescence adjustment. However, the evidence considered thus far does not actually tell us whether the parenting is the cause of the difficulties or a response to them. Although it is easy to interpret these findings as effects that parents have on adolescents ("parent effects"), this is potentially highly erroneous (Bell, 1968); cross-sectional, correlational data can not answer questions about

direction of effect. Other areas of developmental research have clearly demonstrated the fallacy of assuming that the direction of influence is parent to child and not taking into account “child effects” (e.g., Barkley, Karlsson, Pollard & Murphy, 1985). A child effects explanation of the findings might suggest that parental psychological control is a response to difficult adolescent behaviour and a tactic employed when other less intrusive methods are perceived to have failed. Taking this perspective it does seem plausible that a withdrawn, moody and uncommunicative teenager might provoke a stressed and concerned parent to make increasingly intrusive attempts to control their child’s behaviour (Soenens, Luyckx, Vansteenkiste, Duriez & Goossens, 2008).

To understand the relationship between parent psychological control and adolescent adjustment, therefore, longitudinal data is needed. Only studies, which collect data over time and control for initial levels of adolescent adjustment, can begin to address questions about direction of effect. In recent years a number of longitudinal studies that have examined parental psychological control and adolescent adjustment have accumulated (Albrecht, Galambos & Jansson, 2007). To date, however, a review has yet to be conducted that systematically explores this longitudinal data in terms of its findings and the methodological quality of the evidence.

Aim of the literature review

The aim of this review is to consider the impact of parental psychological control on adolescent adjustment and in particular to consider the direction of effect between parent and adolescent. This will be achieved by systematically evaluating the empirical literature, which has investigated the impact of parental psychological control over time. The studies will be described and subjected to a methodological evaluation in order to draw conclusions from the evidence and summarise the current state of knowledge about this parenting strategy and how it might effect or be influenced by adolescent adjustment. It is hoped that this review will clarify this body of literature and highlight what is established and what future research needs to focus on in order to expand the knowledge base beyond this.

Definitions and Measurement

Psychological Control

Parental psychological control was originally conceptualised by Schaefer 1965 and since this time there have been numerous labels and terms for this form of parenting behaviour (Barber & Harmon, 2002). Barber has often referred to it as intrusive parenting (Barber, 1996) and Barber and Harmon (2002), in an attempt to organise and analyse the content of these numerous descriptors, suggest that ‘psychological methods’ and ‘intrusive’ are the main defining aspects. Thus, this type of behaviour refers to parental methods of control that are *psychological* in nature and that result in intrusion and violation of the child’s psychological world. Thus psychological control can also be characterised as psychological abuse, a category of abuse that is distinct from sexual abuse, physical abuse or neglect but which, similarly is likely to have negative consequences for child psychological, emotional, and social development.

Psychological control is an insidious method of parenting that manipulates and exploits the parent-child bond in order to pressure the child to conform to parent goals and norms. Psychologically controlling parents might engage in tactics such as guilt or anxiety induction, love withdrawal (e.g., giving the child the silent treatment), excessive personal control (e.g., using authority to restrict self-expression), or use of affect-laden expressions and criticisms (e.g., indications of disappointment and shame).

The use of these strategies, however, does not automatically indicate that a parent is being psychologically controlling and some authors have questioned whether psychologically controlling tactics employed by parents are always negative (Wang et al., 2007). For example, using guilt induction to elicit empathy could help young people to think through the consequences of their actions for other people and love withdrawal might be helpful if it limits a dangerous or destructive behaviour. It has also been suggested that modest levels of psychological control could be interpreted as an indicator of parental love and concern in some ethnic groups (Mason, Walker-Barnes, Tu, Simons, & Martinez-Arrue, 2004). To interpret whether or not a parent is being psychologically controlling, therefore, might require some consideration about the parent’s intent. For example, a

psychologically controlling parent using love withdrawal might externally resemble a neglectful parent, however, whereas a controlling parent is using the tactic intentionally to manipulate a child, a neglectful parent is not. Along the same lines, a parent who uses reasoning and guilt induction in order to encourage empathy is not being psychologically controlling.

Schaefer (1965) devised the first measure of parent behaviour, which investigated parental psychological control (Child Report of Parent Behavior Inventory; CRPBI). The scale, which measured psychological control, was labelled Psychological Autonomy vs. Psychological Control because it described covert methods of controlling children that would hinder the child in its development as an individual separate from the parent. Researchers of psychological control, however, have stressed that autonomy granting and psychological control are not on the same continuum but are different dimensions worthy of separate consideration (e.g., Barber, Bean & Erickson, 2002; Silk, Morris, Kanaya & Steinberg, 2003). This is because an absence of psychological autonomy does not equate to the presence of psychological control. For this review, therefore, studies that have only measured autonomy granting are not included for consideration.

Schaefer (1965) developed the Psychological Autonomy vs. Psychological Control scale by factor analyses of child report on the CRPBI. He lists the key concepts for this scale as intrusiveness, suppression of aggression, control through guilt, and parental direction. The measure asks children to indicate on a five-point scale ranging from 1 (very much unlike my parent) to 5 (very much like my parent) whether an item relates to them. Example items include: Asks me to tell everything that happens when I'm away from home (intrusiveness); Doesn't approve of my getting angry (suppression of aggression); Thinks I'm not grateful when I don't obey (control through guilt); Wants to control whatever I do (parental direction). Barber (1996), however, thought that some of the items on the CRPBI did not adequately discriminate between psychological and behavioural control and sought to devise an improved assessment tool and his measure, the Psychological Control Scale – Youth Self-Report (PCS-YSR) is the most frequently used measure in the articles reviewed here. The PCS-YSR is an 8-item measure that asks children to rate each parent using a three-point scale on items such as: Is always trying to change how I think or feel about things; Blames me for other family members' problems; and Brings up my past mistakes when s/he criticises me. For each item the child

is asked to rate on a three-point scale whether an item is ‘not like’ their parent, ‘somewhat’ like their parent or ‘a lot’ like their parent.

Adolescent adjustment

When considering adolescent adjustment it is typical for difficulties to be divided into internalising and externalising problems and this review will follow this convention. Internalising problems include depressed mood and anxiety, and externalising problems include antisocial behaviour, delinquency and substance use. Although there are other aspects of adolescent adjustment that might be impacted by parental psychological control (e.g., self-esteem, school achievement, and identity formation) these aspects have not been considered and are beyond the scope of this review.

The articles considered in this review all use self-report questionnaire measures to assess adolescent adjustment. The Youth Self-Report (YSR; Achenbach, 2001), for example, has items that assesses both anxiety (“I worry a lot”) and depression (“I cry a lot”) symptoms, and externalising symptoms and behaviours (e.g., “I hang around kids who get in trouble”; “I have a hot temper”). Respondents are asked to mark whether items are ‘not true’, ‘sometimes true’, or ‘very true’. Although most research has used adolescent self-report to assess adjustment, the YSR does have corresponding tools that are designed to measure parent and teacher report of adolescent adjustment (Child Behaviour Checklist and Teacher Report Form; Achenbach, 1991).

Research that has considered the relationship between psychological control and internalising has tended to focus on the measurement of depressive symptoms. Measures used include the Centre for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) which uses 12-items and asks participants to rate the frequency of each symptom in the previous week (less than one day, 1-2 days, 3-4 days, 5-7 days) and the Child Depression Inventory (CDI; Kovacs, 1992). The CDI was designed to be similar to the BDI (Beck Depression Inventory; Beck et al., 1961) but with language more appropriate for young people (aged 8-13) and it asks participants to choose one of three sentences for each of ten items (e.g., ‘I am sad once in a while’, ‘I am sad many times’, ‘I am sad all the time’).

Assessment of externalising symptoms typically measures behaviour and in particular the frequency of delinquent acts or antisocial behaviours. The Child Behavior Checklist-Youth Self-Report (Achenbach & Edelbrock, 1987), for example, asks participants to indicate responses ranging from 'not true' to 'very true' for items such as 'I lie or cheat' and 'I cut classes or skip school'. Other behaviours which are frequently assessed in externalising measures include drug and alcohol use, physical aggression, criminal acts (e.g., theft, fire setting, carrying a weapon), and gang membership.

Adolescence

Adolescence is the period of transition from childhood to adulthood, which is marked by a number of physical, cognitive, and emotional changes. The age at which adolescence is thought to start and end varies between and within cultures and there is no definitive age span. The World Health Organisation, however, defines adolescence, as referring to young people between the ages of 10 and 20 years old and this definition will be used here. This period of ten years sees a remarkable amount of change; the same person at age ten and at age twenty will be very different in many ways. It is usual, therefore, to break down this period into early (10 to 13), mid (14 to 17) and late (17 to 20) adolescence and these descriptors will be used accordingly.

Methods

Inclusion/exclusion criteria

Original empirical work was included that investigated parental psychological control and adolescent adjustment (internalising or externalising behaviour). For papers considering internalising problems, only those studies, which used a measure of depressed or anxious symptoms, were included. In order to consider the direction of effect between parent and adolescent, only studies, which collected longitudinal data, were included. Studies that collected data at only one time point, therefore, were excluded.

Search Strategy

Electronic database searches formed the basis of the literature search strategy. Databases were searched between 1996 and June 2009. A start date of 1996 was selected because a publication by Barber (1996) provoked a surge of interest on the topic. Barber (1996) suggested the importance of moving away from the typological approach in parenting research and, unlike much previous research, he separated and defined the constructs of psychological control and behavioural control and demonstrated that these were separate parenting strategies worthy of individual consideration. Research into psychological control post 1996, therefore, tends to have more valid and reliable measures of psychological control because it does not confuse this construct with behavioural control.

The following databases were searched via Ovid: PsycINFO, MEDLINE, EMBASE. A separate search of PubMed was also carried out. Databases were searched using terms related to psychological control or adolescence (e.g., (“psychological control” OR “intrusiveness” OR “love withdrawal” OR “criticism” OR “guilt induction”) AND (adolescen* OR “teenage”)). The titles and abstracts of citations were screened according to the defined inclusion and exclusion criteria (see Table 1). If a study met the criteria, or if this was unclear, the article was retrieved in full. The reference lists of all articles retrieved in full were also scanned for citations that could meet criteria.

Search findings

A total of 1136 citations were identified from Ovid, this was reduced to 864 when duplicates were removed, and 592 citations were identified from PubMed. Articles, which appeared to fulfil the inclusion criteria for eligibility from the abstract, were retrieved as full text documents (n=49) for further scrutiny. After the full text had been accessed, 36 articles were excluded on the basis of the inclusion and exclusion criteria. A further two articles were excluded because the reported results were replicated in other papers; the most recent publication was included in the final selection and the older replication was excluded. During data abstraction, a further 15 articles were identified from reference lists; three articles met criteria. The final selection comprised 14 publications.

Table 1. Inclusion/exclusion criteria

Limits: Human, all languages, all countries, 1996 – June 2009, all publication types	
Inclusion criteria	Exclusion criteria
<p>Paper to be included if it meets the following criteria:</p> <ol style="list-style-type: none"> 1. Assesses parental psychological control 2. Assesses adolescent (ages 10-20) adjustment: internalising (anxiety and/or depression symptoms) or externalising 3. Reports longitudinal data; at least two waves of data collection a minimum of six-months apart 4. Publication date is post 1996 	<p>Paper to be excluded if it meets the following criteria:</p> <ol style="list-style-type: none"> 1. Indirect measure of parental psychological control inferred from another parenting construct (e.g., autonomy granting) 2. Replication of data from another study with no additional longitudinal data (in these cases the most recent publication is included and the replication is excluded)*

*Post-hoc addition to criteria following the discovery of two instances of replicated data

Methodological Quality Assessment

In order to compare the quality of the articles in relation to their ability to address the review question, each paper was compared against a checklist of relevant methodological issues. The checklist was composed from guidelines published by the National Institute for Health and Clinical Excellence guidance (NICE guidelines manual, 2007) tailored to the aims of the current review (see Table 2). The NICE rating system was then used to rate the studies in terms of their methodological quality (NICE guidelines manual, 2007). Studies were rated as good, reasonable, or poor quality (see Table 3).

Table 2. Checklist of methodological issues considered for each article

1	Is the sample size sufficient to detect meaningful effect?
2	Could the findings be generalised to a wider population?
3	Has an attempt been made to assess whether subject attrition could bias the results?
4	Have psychological control and adolescent adjustment been measured with reliable tools?
5	Is psychological control assessed from parent and adolescent reporters?
6	Is adolescent gender considered?
7	Are maternal and paternal psychological control considered?
8	Are psychological control and adolescent adjustment measures completed by more than one reporter? (i.e., is shared method bias avoided)
9	Have psychological control and adolescent adjustment been measured at more than one data collection wave? (i.e., so that direction of effect can be considered)
10	Is the study of sufficient duration so that the impact of change in parent psychological control or adolescent adjustment can be detected?
11	Are appropriate statistical analyses of the data carried out?
12	Are the results reported in an appropriate manner so that there is sufficient information to understand the size of any effect reported?

Table 3. NICE rating system for methodological quality

++	Good	All or most of the criteria have been fulfilled. Where they have not been fulfilled the conclusions of the study are thought very unlikely to alter.
+	Reasonable	Some of the criteria have been fulfilled. Those criteria that have not been fulfilled or are not adequately described are thought unlikely to alter the conclusions.
-	Poor	Few of the criteria fulfilled. The conclusions of the study are thought very likely to alter.

Results

The empirical evidence from longitudinal studies of parent psychological control and adolescent adjustment will be reviewed next. First the studies will be described and their methodological quality will be summarised. Then the results of these studies will be outlined according to evidence relating to adolescent internalising problems, externalising problems, and other

aspects of adolescent adjustment. Finally the evidence relating to direction of influence will be presented.

Description of the studies

A summary description of each study is provided in Table 4. The studies in Table 4 are presented in chronological order with the most recent first. Eleven of the studies present data from samples in North America (US and Canada), two present data from Europe (Netherlands and Belgium), and two samples are from Asia (China and Hong Kong).

Methodological quality

The methodological concerns for each study and the NICE rating for methodological quality are listed in Table 4. Only one study (Walker-Barnes & Mason, 2004) was rated as poor (-) indicating that there were serious methodological concerns about this paper which suggest that the results and conclusions presented should not be considered as evidence in the current review. Six of the papers were rated as being of reasonable quality (+) indicating that some of the methodological criteria had been fulfilled and that where the criteria had not been met this was not so critical as to indicate that the evidence should be dismissed. A common reason why a study was rated as reasonable and not good was when measurements of psychological control were taken at only one time point. This omission means that despite collecting other data at more than one time point, no conclusions about direction of influence could be made.

Seven papers were rated as good quality (++). Typically these studies had large samples and/or had multiple waves of data collection. Most of these papers also measured psychological control at more than one time and controlled for initial levels of adjustment problem so that direction of influence could be tested.

Nearly all of the studies considered in this review used adolescent report of parent psychological control; only three studies used a parent measure of psychological control. In the remaining studies it is, therefore, perceived parental psychological control that is being measured. Barber and Harmon (2002) suggest that most studies (81 per cent of those that they reviewed) use a

child report methodology because the predominant measures are designed for child report and that children are the best placed to inform about parent psychological control. Undoubtedly it is also easier to collect large samples of data from young children especially in education settings.

Despite author assertions that adolescent self-report is an appropriate methodology (e.g., Allbrecht et al., 2007), it does raise concerns for the current review. First, although evidence suggests that adolescent report will resemble parent report it does not overlap completely and the agreement between the two is typically quite low (around .30; Allbrecht et al., 2007; Mayseless & Scharf, 2009). Second, a further cause for concern arises when adolescent report of adjustment is used in addition to adolescent report of parent psychological control. This practice creates a common method variance problem and might result in shared method bias with true relations being exaggerated due to the use of a single reporter. Thus, in these studies, a relationship between parent psychological control and adolescent adjustment might be inflated by adolescent cognitive bias; a depressed adolescent, for example, might *perceive* their parent to be more controlling than a non-depressed adolescent.

Table 4. Summary of the studies, methodological concerns and quality rating

Study	Description of study	Sample	Measure of Psychological Control (PC)	Methodological concerns	Rating
1. Soenens, Luyckx, Vansteenkiste & Goossens (2008)	A cross-lagged, one-year longitudinal study investigating parental PC and depressive symptoms (CES-D; Radloff, 1977, $\alpha \geq .87$) in samples of late (Study 1) and middle (Study 2) adolescents.	Study 1: 396 Belgian students. Mean age at first wave 18.8 years, 11.4% male. Study 2: 724 Belgian students. Mean age at first wave 14.9 years, 49% male.	Study 1: Measure derived from the Children's Report on Parent Behavior Inventory (CRPBI; Schaefer, 1965). 7 items (e.g., "My parents are less friendly to me if I don't see things like they do"). $\alpha = .82, .85$, and $.86$ at T1, T2, and T3 respectively. Study 2: As Study 1 but 6 items from the CRPBI. $\alpha = .82, .79$ at T1, T2 for fathers and mothers.	<ul style="list-style-type: none"> • Adolescent self-report measure of PC. • Potential shared method bias. • Study 1: sample predominantly female. • Study 1: assessed overall level of PC from both parents rather than separately. 	++
2. Albrecht, Galambos & Jansson (2007)	A two-year longitudinal study investigating parental PC, anxiety and depression (BCFPI-3; Cunningham et al., 2006; $\alpha \geq .85$) and externalising behaviour (CPR Scale; Crick & Grotpeter, 1995; $\alpha \geq .77$).	530 Canadian adolescents from a random community sample. Mean age at first assessment was 15.7 years (range 12-19), 47% male.	PCS-YSR (Barber, 1996). $\alpha = .79, .75$ for fathers at T1, T2, $\alpha = .74, .74$ for mothers at T1, T2.	<ul style="list-style-type: none"> • Adolescent self-report measure of PC. • No consideration of age. • Potential shared method bias. 	++
3. Shek (2007)	A one-year longitudinal study of parental PC and adolescent depression (HOPEL; Beck et al., 1974; $\alpha \geq .91$).	2,758 Chinese students. Mean age at first assessment 12.7 years (range 11 to 19), 44% male.	Chinese Paternal and Maternal PC Scale. 10 items (e.g., "When my views are different to those of my father/mother, he/she reduces his/her friendliness to me"). $\alpha = .88, .90$ at T1 and T2.	<ul style="list-style-type: none"> • Adolescent self-report measure of PC. • Potential shared method bias. • Large number of multiple regressions; risk of Type I error. • Age not considered in analysis. 	++
4. Wang, Pomerantz, & Chen (2007)	A six-month longitudinal study in the United States and China. Investigating parental PC and adolescent anxiety and depression (Emotional Ill-Being scale, devised by authors; $\alpha \geq .77$).	373 American students. Mean age at first assessment 12.8 years, 50% male. 433 Chinese students. Mean age at first assessment 12.7 years, 52% male.	18 items selected from existing measures (Barber, 1996; Silk et al., 2003) or created for this research (e.g., "My parents tell me that I should feel guilty when I do not meet their expectations"). $\alpha = .92, .95$ at T1, T2 in United States. $\alpha = .89, .92$ at T1, T2 in China.	<ul style="list-style-type: none"> • Adolescent self-report measure of PC. • No consideration of gender. • Assessed overall level of PC from both parents rather than separately. • Potential shared method bias. • Time span of six-months may not be sufficient to assess direction of effects. 	+

Study	Description of study	Sample	Measure of PC	Methodological concerns	Rating
5. Kemp, Scholte, Overbeek, & Engels (2006)	A three-wave, one-year longitudinal study of parenting dimensions and adolescent externalising (frequency of small criminal acts; Houtzager & Baerveldt, 1999; $\alpha = .82$).	433 Dutch adolescents from community sample. Mean age at first wave 12.3 years, 45% male.	Dutch translation of the Parenting Style Index (Steinberg et al., 1994). 9 items (e.g., "My parents express that I should not argue with grown-ups", "My parents treat me coldly when I fail at school"). $\alpha = .79$.	<ul style="list-style-type: none"> • Sample restricted to adolescents with reciprocal friends and predominantly white adolescents from intact families. • Adolescent self-report measure of PC. • Assessed overall level of PC from both parents rather than separately. • Potential shared method bias. 	+
6. Barber, Stolz & Olsen (2005)	A four-wave, four-year longitudinal study of parental PC, adolescent depression (CDI; Kovacs, 1992; $\alpha = .78$), and externalising (CBCL-YSR; Achenbach & Edelbrock, 1987; $\alpha = .75$).	933 American students. Age range at first wave, cohort 1: 10-11 years, cohort 2: 13-14 years, 50% male.	PCS-YSR (Barber, 1996). It is reported that all measures of parenting variables fell between the range of $\alpha = .80$ to $\alpha = .90$.	<ul style="list-style-type: none"> • Adolescent self-report measure of PC. • Potential shared method bias. • Did not control for stability of constructs within each wave. 	++
7. Doyle & Markiewicz (2005)	A two-wave, two year longitudinal cross-lagged study investigating parental PC, and adolescent anxiety, depression and externalising (YSR; Achenbach, 2001; $\alpha = .91$).	175 Canadian students aged 13 years, 37% male.	3 items from the Punishment Scale (Haapasalo & Tremblay, 1994) (e.g., "Do your parents punish you by saying you cause them distress?"). $\alpha = .62$.	<ul style="list-style-type: none"> • Small sample predominantly female, white, and from intact families. • Adolescent self-report measure of PC. • Assessed overall level of PC from both parents rather than separately. • Poor reliability of PC measure. • Potential shared method bias. 	+
8. Walker-Barnes & Mason (2004)	An eight-wave, one-year longitudinal study of an ethnically diverse sample parental PC and adolescent externalising (Gang Membership Inventory; Pillemer & Hoewing-Roberson, 1992; $\alpha = .74$).	300 American students. Mean age at first wave 14.6 years (range 13-18), 55% male.	PC subscale from CRPBI (Schaefer, 1965). $\alpha = .72$.	<ul style="list-style-type: none"> • No consideration of gender or age. • Adolescent self-report measure of PC. • Assessed overall level of PC from both parents rather than separately. • Potential shared method bias. • PC only measured at first assessment; does not address direction of effect. • No analysis of subject attrition. • Variables not regressed in a statistically appropriate manner. • Unable to determine size of effect. 	-

Study	Description of study	Sample	Measure of PC	Methodological concerns	Rating
9. Galambos, Barker & Almeida (2003)	A five-wave, 3.5 year longitudinal study of parental PC, adolescent anxiety and depression (SIQYA; Petersen et al., 1984; $\alpha \geq .79$) and externalising (Deviant Response Scale; Kaplan, 1978; $\alpha \geq .77$).	109 American 'Two-earner' families. Mean age of adolescents at first wave 11.5 years, 45% male.	Mothers and fathers completed the PC subscale of the CRPBI (Schaefer, 1965). 15 items (e.g., "I think our child is not grateful when s/he doesn't obey"). $\alpha = .87$ for fathers, $\alpha = .85$ for mothers.	<ul style="list-style-type: none"> • Small sample predominantly white, problem-free adolescents from intact families. • No adolescent report of parents PC. • PC only measured at first assessment; does not address direction of effect. 	++
10. Rogers, Buchanan & Winchell (2003)	A two-wave, one-year longitudinal study of parental PC and adolescent depression (CES-D, Radloff, 1977; $\alpha \geq .78$) and externalising (CDS, Galambos & Maggs, 1991; $\alpha \geq .85$. CBC; Achenbach, 199 ; $\alpha \geq .70$).	306 American students. Mean age at first wave 11.7 years, 47% male.	PCS-YSR (Barber, 1996). $\alpha = .92, .82$ for fathers at T1, T2, $\alpha = .75, .81$ for mothers at T1, T2.	<ul style="list-style-type: none"> • Adolescent self-report measure of PC. 	++
11. Pettit & Laird, (2002)	An nine-wave, nine-year longitudinal study of parental PC, adolescent anxiety and depression and externalising (YSR, TRF, CBC; Achenbach, 1991; ; $\alpha \geq .70$).	456 American mothers and their children (followed from age 5 to 14), 50% male.	Questions about PC were embedded in the mother interview and the adolescent interview. Ten questions were devised from Barber (1996) and Barber et al. (1994). $\alpha = .76$ for adolescent reports, $\alpha = .63$ for mother reports.	<ul style="list-style-type: none"> • PC only measured at final assessment wave; does not address direction of effect. • Poor reliability of maternal PC measure. • No consideration of paternal PC. 	++
12. Conger, Conger & Scaramella (1997)	A three-wave, three-year longitudinal study of parental PC, adolescent depression and externalising behaviour (Depressed Mood and Hostility subscales SCL-90-R; Derogatis, 1983; $\alpha \geq .73$).	388 American students. Mean age at first wave 13.2 years, 46% male.	A 9-item measure based on the work of Barber (1992, 1996) was devised. Adolescents were asked to rate how often a parent had behaved in a certain way (e.g., threaten to do something that would upset you if you didn't do what they wanted). $\alpha = .84, .82$ for mothers and fathers respectively.	<ul style="list-style-type: none"> • Predominantly white, low- to middle-class sample from small towns or rural areas. • Adolescent self-report measure of PC. • Potential shared method bias. • Stability of PC was not controlled for; does not address direction of effect. • No analysis of subject attrition. 	+

Study	Description of study	Sample	Measure of PC	Methodological concerns	Rating
13. Mason, Cauce, Gonzales & Hiraga (1996)	A two-wave, one-year longitudinal study investigating maternal PC and adolescent externalising (Problem Behavior Scale, devised by authors; $\alpha \geq .79$).	106 African American adolescents and their mothers. Age range at first assessment 12-14 years, 36% male.	Maternal reports of PC were measured with the Restrictiveness scale (Rickel & Biasatti, 1982). 21 items (e.g., "I believe my child should be aware of how much I sacrifice for him/her"). $\alpha = .79$ to $.93$ (no α for PC reported, however, all measures are reported as being within this range).	<ul style="list-style-type: none"> • Small sample. • Only maternal PC is measured. • No adolescent measure of parent PC. • PC only measured at first assessment; does not address direction of effect. 	+
14. Barber (1996)	Study 3: A two-wave, one-year longitudinal study investigating parental PC, adolescent depression (CDI; Kovacs, 1992; $\alpha = .78$), and externalising (CBCL-YSR; Achenbach & Edelbrock, 1987; $\alpha = .75$).	933 American students. Age range at first assessment 10-11 years (cohort 1) and 13-14 years (cohort 2), 50% male.	PCS-YSR (Barber, 1996). $\alpha = .72$ to $.86$.	<ul style="list-style-type: none"> • Adolescent self-report measure of PC. • Potential shared method bias. • PC from T1 not included in the longitudinal test of model; does not test direction of effect. • No analysis of subject attrition. 	+

Parental psychological control and adolescent externalising problems

Of the 14 studies reviewed here, 11 report on the relationship between parental psychological control and adolescent externalising problems. Two of these studies considered externalising behaviour in early adolescence only (Mason et al., 1996; Rogers et al., 2003). Six studies considered early and mid adolescence (Barber, 1996; Conger et al., 1997; Doyle & Markiewicz, 2005; Galambos et al., 2003; Kemp et al., 2006; Pettit & Laird, 2002) and the remaining three studies included the whole span (Albrecht et al., 2007; Barber et al., 2005; Walker-Barnes & Mason, 2004).

Typically these 11 studies have measured externalising problems by asking the adolescents to self-report the frequency of minor and major delinquent acts they have engaged in. Minor delinquent acts include theft of a low value item, truancy, lying, swearing, fighting and using alcohol. Major delinquent acts include setting fires, carrying a weapon, using a weapon, stealing a vehicle or high value item, and using or selling drugs. Two studies also asked about gang activity such as wearing gang colours, using gang hand signals and associating with members of gangs (Mason et al., 1996; Walker-Barnes & Mason, 2004). Only two studies did not measure externalising problems with a checklist of delinquent acts. Albrecht et al. (2007) measured the frequency of physical (yell, hit, push/shove) and relational aggression (lie, exclude others from group, saying mean things about others) in relation to peers. Conger et al. (1997) measured antisocial feelings and behaviours.

As well as the use of adolescent self-report, three studies had an additional informant (e.g. parent or teacher) of externalising behaviour (Mason et al., 1996; Pettit & Laird, 2002; Rogers et al., 2003). All other studies relied exclusively on adolescent self-report. In addition, only the paper by Galambos et al. (2003) does not rely on adolescent report for a measure of parent psychological control. Only four articles (Galambos et al., 2003; Mason et al., 1996; Pettit & Laird, 2002; Rogers et al., 2003), therefore avoid the problem of shared method bias. For the remaining papers under review any results, which suggest a link between adolescent externalising behaviour and perceived parental psychological control, might be inflated. This exaggeration could occur, for example, if adolescents who self-report engaging in more externalising behaviour are more likely also to rate their parents as intrusive.

Of the studies being discussed in this section, only one reports a negative relationship between adolescent externalising behaviour and parental psychological control so that a higher level of psychological control was associated with a lower level of major delinquency (Walker-Barnes & Mason, 2004). Walker-Barnes and Mason (2004) explain this counterintuitive finding by suggesting that there may be a curvilinear interaction between parent psychological control and delinquency, so that modest levels of psychological control may reduce the impact of delinquent peers (Mason et al., 1996). Another suggestion they make is that the impact of psychological control may be different for ethnic minority youth so that it is viewed as an indicator of love and concern and is not, therefore, detrimental (Mason et al., 2004). These explanations, however, are not supported by other research and the curvilinear interaction they cite as evidence was not observed when initial levels of externalising behaviour were controlled for (Mason et al., 1996). A final issue with this piece of evidence is that, in terms of quality, this study was rated as poor; the methodological problems with this research were judged to be sufficient to reject the conclusions presented.

Two of the studies being reviewed report no relationship between parent psychological control and adolescent externalising problems (Doyle & Markiewicz, 2005; Mason et al., 1996). As mentioned above, Mason et al. (1996) reported a curvilinear interaction that disappeared when they controlled for initial levels of problem behaviour. As it is generally considered methodologically unsound not to include autoregressive effects (Gollob & Reichardt, 1987), the lack of association between parent psychological control and adolescent externalising problems is taken as the main finding. Doyle and Markiewicz (2005) also failed to observe a relationship between psychological control and externalising problems. They considered that, as found by Pettit and Laird (2002), this relationship might be mediated by parental warmth or parental behavioural control, however, Doyle and Markiewicz (2005) did not observe this to be the case with their data.

Considering the remaining eight papers that reported a positive association between parental psychological control and adolescent externalising behaviour, only three studies avoid possible shared method bias. The studies by Pettit and Laird (2002), Galambos et al. (2003) and Rogers et al. (2003) use multiple informants and thus avoid the potential problem that adolescents who engage or self-report higher levels of externalising might also report higher levels of parental psychological control.

Although Pettit and Laird (2002) found that a higher level of parental psychological control was associated with adolescent delinquency, this was only the case when there was no history of childhood adjustment problems and when parental involvement was low. Pettit and Laird (2002) found that early proactive parenting and low level of childhood problems predicted later maternal psychological control suggesting that, proactive parenting in a well-adjusted child may indicate “overmanagement” which in later years may translate into intrusive, psychologically controlling parenting. When early childhood problems are present, proactive parenting may be appropriate and in later years this may be translated into further age appropriate parenting: monitoring and supervision. Pettit and Laird (2002) suggest, therefore, that having psychologically controlling parents may be a pathway through which relatively well adjusted young people with uninvolved parents might start to exhibit delinquent behaviour.

Galambos et al. (2003) also found evidence for a relationship between parental psychological control and adolescent delinquency, however, this association was only observed when there was also a high level of parental behavioural control. In families with a low level of behavioural control, no relationship between parental psychological control and adolescent externalising problems was found. This is an interesting finding because a high level of parental behavioural control is typically related with a lower level of delinquent type behaviour. This finding by Galambos et al. (2003), however is similar to the finding above by Pettit and Laird (2002) which suggests that parental ‘overmanagement’ is intrusive and detrimental to adjustment so that the positive outcomes often associated with behavioural control are absent when this strategy is combined with psychological control.

Pettit and Laird (2002) also reported a gender difference: psychological control was associated with more delinquency for girls. Rogers et al. (2003) and Conger et al. (1997) also report specific gender effects. Rogers et al. (2003) found that paternal psychological control predicted daughter externalising problems but only when mother psychological control was also high; for boys, the use of psychological control by either parent did not impact externalising. Conger et al. (1997) found that although boys and girls externalising behaviour was positively associated with parental psychological control, once boys reached mid adolescence parental psychological control was no

longer an influence. For boys, therefore, if they perceived that their parents reduced their use of this strategy this did not correspond to a decrease in externalising. Girls, on the other hand, were sensitive to the contemporary behaviour of their parents and a decrease in perceived parental psychological control was matched by a decrease in externalising behaviour. Conger et al. (1997) suggest that these findings indicate that parental use of psychological control is particularly detrimental for boys in early adolescence and that the use of this strategy might have long term consequences for adjustment which may not be susceptible to a parenting style modification by mid adolescence. The findings by Rogers et al. (2003) and Pettit and Laird (2002) that male externalising was not influenced by parental psychological control could be further support for this.

Barber (1996) and Barber et al. (2005) also found that perceived parental psychological control was associated with externalising behaviour, and reported that, although behavioural control was a better predictor, psychological control made a unique and reliable contribution. Barber (1996), similar to Conger et al. (2003), also reported some age and gender effects; for boys the association between perceived psychological control and externalising increased from ages 10/11 to 13/14 and then decreased by age 15/16. Barber (1996), however, also found that these age and gender effects were not evident when tested specifically with Structural Equation Modelling (SEM). In addition, a further seven studies investigated adolescent gender effects and also failed to find an interaction (Albrecht et al., 2007; Barber, 1996; Barber et al., 2005; Doyle & Markiewicz, 2005; Galambos et al., 2003; Kemp et al., 2006; Mason et al., 1996).

The two final studies to be reviewed in this section, Kemp et al. (2006) and Albrecht et al. (2007) also provide evidence that supports a positive relationship between adolescent perceived parental psychological control and externalising behaviour. Kemp et al. (2006) found that parental psychological control was a better predictor of delinquency than best friend delinquency. They tested the idea that parental psychological control might lead to delinquency by placing an adolescent at higher risk for having a delinquent friend, however, they did not find support for this. Albrecht et al. (2007) also found a positive relationship between perceived parental psychological control and relational and physical aggression. This was the only study to investigate relational aggression, which has a behavioural overlap with psychological control (e.g., love withdrawal), although other studies

have found a link between parent psychological control and relational aggression in younger children (Nelson & Crick, 2002).

Parental psychological control and adolescent internalising problems

Of the studies that met the review criteria, 11 report on the relationship between parental psychological control and adolescent internalising problems. Two of these studies considered internalising only in the early years of adolescence (Rogers et al., 2003; Wang et al., 2007). Five studies considered early and mid adolescence (Barber 1996; Conger et al., 1997; Doyle & Markiewicz, 2005; Galambos et al., 2003; Pettit & Laird, 2002). One study investigated mid and late adolescence (Soenens et al., 2008) and the remaining three covered the whole span (Albrecht et al., 2007; Barber et al., 2005; Shek, 2007).

All of the studies considered here have measured internalising problems by asking adolescents to self-report internalising symptoms (either depressive and anxious symptoms or depressive symptoms alone). Only two studies also collected data on internalising from another source; Rogers et al. (2003) asked mothers and fathers to report on adolescent depressive symptoms and Pettit and Laird (2002) collected data on anxious and depressive symptoms from mothers and teachers. In addition, only the paper by Galambos et al. (2003) does not rely on the adolescent for a measure of parent psychological control. These three studies, therefore, are the only articles being reviewed in this section that can avoid the potential confound of shared method bias which could potentially exaggerate findings. For example, if adolescents who tend to self-report more internalising symptoms are more likely to report a high level of parental psychological control this could inflate the level of association observed. Five of the studies investigated internalising behaviour by measuring frequency of depressive and anxious symptoms (Albrecht et al., 2007; Doyle and Markiewicz, 2005; Galambos et al., 2003; Pettit and Laird, 2002; Wang et al., 2007) and six have measured depressive symptoms (Barber, 1996; Barber et al., 2005; Conger et al., 1997; Rogers et al., 2003; Shek, 2007; Soenens et al., 2008)

Of the eleven studies to be discussed, nine report a positive relationship between perceived parent psychological control and adolescent internalising behaviour so that a high level of one is associated with a high level of the other. Interestingly, however, the remaining two studies are also two of the three which do not have the potential confound of shared method bias (Galambos et al., 2003; Rogers et al., 2003). Further, Rogers et al. (2003) do report a positive relationship when they analyse adolescent self-report of depressive symptoms but this relationship is not evident with parent report of adolescent depressive symptoms. Galambos et al. (2003) discuss their surprise at not finding a link between parental psychological control and adolescent anxious and depressive symptoms and suggest that their 'normal' sample may have been too 'problem-free' to observe this relationship.

The majority of the studies reviewed here, however, do report a significant positive relationship. Indeed, six of these studies have compared the influence of several parenting variables (e.g., behavioural control, warmth, attachment anxiety, marital conflict, parental responsiveness) and have reported that psychological control has a unique and significant association with adolescent symptoms of anxiety (Doyle & Markiewicz, 2005; Petit & Laird, 2002; Wang et al., 2007) and depression (Barber, 1996; Barber et al., 2005; Doyle & Markiewicz, 2005; Petit & Laird, 2002; Soenens et al., 2008; Wang et al., 2007)

With one exception (Wang et al., 2007), all studies considered adolescent gender in their analysis. Seven studies report that no effect was observed but four report some interactions (Conger et al., 2003; Pettit & Laird, 2002; Rogers et al., 2003; Soenens et al., 2008). Conger et al. (2003) observed similar findings to those reported for externalising problems; symptoms of depression in males were influenced early on by parental psychological control but later on this was not the case so that a subsequent decrease in perceived psychological control was not associated with a decrease in depressive symptoms. The relationship between girls and perceived psychological control, however, continued to be positively associated at later age points. Rogers et al. (2003) observed an effect of gender but only when parent report of depressive symptoms was analysed. An increased association was then observed in the mother/daughter dyad (however, as mentioned above, no significant association was observed overall when parent report of depressive symptoms and adolescent report of psychological control were investigated).

Pettit and Laird (2002) also report a stronger positive relationship between mother psychological control (father psychological control was not assessed) and daughter depression and anxiety symptoms but only when there was a history of adolescent adjustment problems. This relationship was only found between mother reported internalising and daughter perception of psychological control, however, teacher reported internalising symptoms was also related in this study; a high level of daughter perceived parental control was linked to high levels of mother and teacher rated anxiety and depression. Taken together these findings suggest a closer association between mother psychological control and daughter internalising in adolescence, however, Soenens et al. (2008) report an opposite result. Soenens et al. (2008) observed a positive relationship between perceived parental psychological control and adolescent depressive symptoms in all parent/offspring dyads except the mother/daughter pairing. With such divergent findings it is difficult to provide coherent interpretations and further investigations are necessary to clarify these conflicting findings. One explanation might be that a stronger relationship between mother psychological control and daughter internalising is only evident in more severe cases where internalising problems are clearly demonstrated and, therefore, are observed by a parent or a teacher. The majority of the articles reviewed here, however, did not find any evidence of an adolescent gender effect.

Although no adolescent gender effect was observed in Shek's (2007) large sample of Chinese adolescents he does report a difference between mother and father psychological control. Maternal psychological control had a stronger relationship than paternal psychological control, though, psychological adjustment was poorest among those adolescents with two parents exerting a high level of psychological control. The idea of a cumulative effect of psychological control is supported by other studies reviewed here (e.g., Rogers et al., 2003) and, Conger et al. (1997) demonstrated the further detrimental additive effect of psychologically controlling siblings.

None of the studies report any marked difference between the different adolescent age periods; across all the age groups tested, the majority of studies found a significant positive relationship. Barber's (1996) initial results did suggest that the association between parental psychological control and internalising might increase with age but this finding disappeared when tested out with SEM.

Direction of relationship between parent psychological control and adolescent adjustment

Eight of the papers reviewed here specifically tested the direction of effect between parent psychological control and adolescent adjustment (Albrecht et al., 2007; Barber et al., 2005; Doyle & Markiewicz, 2005; Kemp et al., 2006; Rogers et al., 2003; Shek, 2007; Soenens et al., 2008; Wang et al., 2007). There are essentially three competing models, which attempt to explain the link between parent psychological control and adolescent adjustment: a psychological control effects model, an adolescent adjustment effects model and a reciprocal model. In brief, the psychological control effects model has historically been the assumed explanation for any link between parenting and child outcome with the parenting variable assumed to be the risk factor or antecedent to the problem. To counter this the adolescent adjustment effects model was borne out of the increasing recognition that child behaviour can also elicit parent behaviour and in the current example this model would suggest that parental psychological control is a response to adolescent adjustment problems. Finally, the reciprocal model (or bidirectional model) acknowledges both of these pathways and, borne out of transactional models of development (e.g., Sameroff, 1991), recognises the continuous and dynamic interaction between child and parent behaviour and characteristics over time.

Doyle and Markiewicz (2005) and Wang et al. (2007) present evidence for the psychological control effects model. Doyle and Markiewicz (2005) report that adolescent adjustment (externalising and internalising) is predicted by parent psychological control but not the other way round. Wang et al. (2007) also report this to be the case with internalising symptoms in samples from both the US and China. Kemp et al. (2006) present a more complex picture of direction of influence where different models take precedence over time. They suggest that for externalising behaviour, a psychological control effects model is evident from around age 12 but that by age 13 both parent and child effects are evident.

Albrecht et al. (2007), however, provide evidence which they report is “consistently in favour of child effects” (p680). They suggest that for internalising and externalising behaviour it is these behaviours which predict the subsequent perception of parental psychological control. They report no evidence for the parental psychological control effects model; perceived parental psychological control did not predict externalising or internalising behaviours. They conclude that contexts and

relationships other than the parent-child relationship are more influential for the development of adjustment problems in adolescence. Albrecht et al. (2007) reject the idea that their results could be explained by a shared method and cognitive bias on the part of the adolescent. They suggest that this bias could not explain why they observed directional findings indicating child and not parent effects. However, one explanation might be that even if parents are being consistently controlling over time, this might not be perceived or reported as controlling until such time as the adolescent experiences adjustment problems.

Rogers et al. (2003) also suggest that an adolescent adjustment effects model best explains the link between parent psychological control and internalising problems, so that psychological control was a reaction to rather than a predictor of adjustment problems. However, the link between psychological control and adjustment was only evident when adolescents were the reporter of internalising symptoms and, therefore, Rogers et al. (2003) acknowledge that this finding might be due to a negative cognitive bias in the mind of the adolescent.

For externalising problems, Rogers et al. (2003) reported that a psychological control effects model explained their results the best. They report that a high level of parent psychological control, perhaps particularly paternal psychological control leads to a higher rate of externalising problems. They suggest also that this finding is particularly robust because it was evident despite a very high level of stability in externalising symptoms during the study.

Barber et al. (2005) conducted one of the most extensive longitudinal studies being reviewed here. They found evidence of cross-lagged effects of psychological control on depression and antisocial behaviour as well as cross-lagged effects of adjustment on subsequent perceptions of parental psychological control. These findings suggest that a reciprocal model best captured the relationship between psychological control and adjustment, however, Soenens et al. (2008) suggest that the findings from this study may be an artefact of the stability in each construct. This is because the methodology used by Barber et al. (2005) did not control for associations between the constructs within each wave of their data collection; at each data collection wave either psychological control or adjustment was measured, not both.

Despite criticisms of the Barber et al. (2005) findings, Soenens et al. (2008) also report evidence to support a reciprocal model. Significant cross-lagged paths were found between psychological control and depression. The evidence suggested, however, that the influence of the psychological control model was stronger because of weaker support for the adolescent adjustment effects model. Soenens et al. (2008) did find some age differences though and the adolescent adjustment effects model was better supported in mid (compared with late) adolescence. Support for the psychological control effects model was consistent across ages. Shek (2007), with by far the largest sample size of the studies being reviewed here, also found evidence to support the reciprocal model with internalising symptoms and psychological control influencing each other.

The picture, therefore, is somewhat confusing. Overall, three studies cite evidence in support of a psychological control effects model for internalising symptoms (Doyle & Markiewicz, 2005; Wang et al., 2007) and for externalising symptoms (Doyle & Markiewicz, 2005; Rogers et al., 2003). Two studies support the adolescent adjustment effects model (Albrecht et al., 2007: internalising and externalising; Rogers et al., 2003: internalising). Finally, five studies support a reciprocal model of influence for externalising symptoms (Barber et al., 2005; Kemp et al., 2006) and for internalising symptoms (Barber et al., 200; Shek, 2007; Soenens et al., 2008).

Considering the weight and comparing the quality of this evidence, the papers reviewed here best support the reciprocal model. There are three studies with a good quality rating which support the reciprocal model and these studies include the investigations which have covered the longest time span and have the largest sample size of the studies reviewed (Barber et al., 200; Shek, 2007; Soenens et al., 2008). There is also good quality evidence, however, which supports the adolescent effects model and the psychological control effects model. To understand better the relationship between parental psychological control and adolescent adjustment, it would seem that further longitudinal studies of this nature are unlikely to provide answers and what is needed are experimental intervention studies. Studies, for example, that compared adolescent adjustment and parental psychological control before and after an intervention aimed to address either adolescent adjustment or psychological control would help demonstrate how these factors influence each other.

Discussion

The evidence reviewed here suggests that there is a positive relationship between parental psychological control and adolescent externalising behaviour. Although there is evidence for a link, some studies did not observe this (e.g., Doyle & Markiewicz, 2005) and the most robust evidence, which used multiple informants, only found a link under certain conditions (e.g., if behavioural control was also high; Galambos et al., 2003). Therefore, it seems that parent psychological control and adolescent externalising behaviour may be moderated by other factors. Although it was not the purpose of this review to consider the role of parental behavioural control and externalising, this more robust link was clearly evident from these studies. An interesting finding, however, is that although the presence of behavioural control is typically linked to a reduction in delinquent behaviour, when it is present in addition to psychological control this positive outcome becomes negated. In this scenario behavioural control becomes a component of parental 'overmanagement' which has a detrimental effect.

Some of the evidence suggests that age and gender might warrant further consideration in terms of the relationship between parent psychological control and externalising symptoms. For example, the finding that boys might be susceptible to psychological control in early adolescence but are unaffected later on (Conger et al., 1997) could suggest that early intervention is critical for male adolescents, especially if an intervention package plans to address parenting. This finding, however, needs replication and investigation with multiple data sources as other studies have failed to find this gender effect.

In consideration of adolescent internalising problems, the evidence reviewed here suggests that there is a positive relationship with parental psychological control. Comparing with the findings for externalising behaviour the results appear more emphatic and psychological control is reported as having the strongest relationship with internalising when it has been compared with other parenting variables. However, as for externalising problems, the evidence is not without discrepancies and again, the evidence which does not support this link comes from those studies where the method has used different informants and avoids the problem of potentially inflated findings associated with this methodology.

Again, similar to externalising problems, the papers reviewed suggest that there may be specific gender effects in the association between parent psychological control and adolescent internalising. Again, however, the picture is very confusing because whilst some report a stronger relationship between mother psychological control and daughter internalising, Soenens et al. (2008) found a relationship in every dyad pairing except this one. Again, the different results are linked to different methods and the mother daughter link is strongest when mother report of internalising symptoms is analysed. Clarification from future research is needed to establish if this finding is an artefact of the method or evidence that the link between mother psychological control and daughter internalising is present or more pronounced only in more extreme cases (i.e., when adolescent internalising is clearly evident to an external observer such as a parent or teacher).

In terms of explaining the direction of influence between adolescents and parents, the evidence overall suggests that a reciprocal model offers the best fit of the data. However, the problem of shared method once again confuses the results. Considering the direction of effect, there is only one study here that avoids this potential problem by not relying solely on adolescent report. This study by Rogers et al. (2003) finds evidence in support of the psychological effects model for externalising symptoms. For internalising symptoms, however, there is only a link with paternal psychological control when adolescent self-report is used (i.e., when there is potentially a shared method bias). This finding though is only from one study and this result needs replication. The reciprocal model, therefore, which incorporates adolescent adjustment and psychological control effects, is the best-supported model here with five longitudinal studies citing evidence in its favour.

Overall, this review is unable to draw any firm conclusions about any of the questions addressed because of the persistent problem posed by shared method bias. Only four studies under review managed to avoid this difficulty by ensuring that the variables being investigated were not measured from a single informant. The remaining studies all relied exclusively on adolescent self-report. Despite assertions from some authors that this is not a problem (e.g., Barber et al., 2005) and reassurances that this could not have inflated results that were observed (e.g., Albrecht et al., 2007), this review highlights the fact that different associations are found when exclusive adolescent self-report is compared with data from multiple informants. It is also beyond the scope of authors to rule

out this problem simply because a direction of effect is observed going one way and not the other (e.g., Albrecht et al., 2007). Indeed, it is not difficult to understand why using only adolescent self-report is potentially confounding especially when considering internalising problems. For example, according to Beck (1976) individuals who are depressed will be biased towards making negative interpretations of themselves, others, the environment and the future. One would expect, therefore, that adolescents who are depressed might well have a more negative view of the parenting they are experiencing than young people who are not depressed might. Similarly for externalising symptoms, it is not difficult to imagine that adolescents who are engaging in antisocial behaviour might be more likely to perceive their parents as more controlling than adolescents who are not engaging in such externalising. Given that this type of behaviour might incur punishment, young people who are externalising might be likely to perceive any parenting style or method as intrusive.

A major conclusion from this review, therefore, is that future research in this area should not rely exclusively on adolescent self-report and should use multiple sources of information. Any study failing to do this would be very unlikely to add anything further to our understanding about parental psychological control and its association with adolescent adjustment. Future research should still collect adolescent report of internalising and externalising symptoms but data from parents, teachers, peers or siblings would enable the problem of shared method bias to be avoided. Considering, therefore, the NICE rating system that was used to indicate methodological quality in this review, it is suggested that, rather than equal weighting being given to items on the checklist (Table 2), the measurement of psychological control from more than one source (item 8) should be a necessary fulfilled criteria for a study to be considered of good quality.

Future research would also be improved if alternative methods of measuring parent psychological control could be devised. This, however, is a trickier proposition and, as pointed out by Barber (1996), adolescents themselves are probably the best source of information about parenting. Parent or sibling report, however, might help clarify if or when significant findings are likely to be the result of a biased adolescent perspective. In addition, intervention studies which manipulate either parent psychological control or adolescent adjustment would enhance greatly our understanding in this area.

Better understanding of the direct and indirect effects of psychological control on adolescent adjustment is desirable as this could inform clinical practice and shed light on family dynamics (Salafia, Gondoli, Corning, Bucchianeri & Godinez, 2009). If, for example, parental psychological control is a response to an existing adolescent adjustment problem then it might be unhelpful and costly to intervene with parenting classes or workshops. If parenting effects are relevant, however, classes that inform parents about normal adolescent development and encourage use of alternative parenting strategies (i.e., more behavioural control and less psychological control) might be very helpful.

Although more research might allow stronger conclusions to be drawn, the results from this review do suggest that the relationship between parental psychological control and adolescent adjustment is reciprocal. Indeed, whether or not the starting point for an adjustment problem is the parent, the child or an external factor, the parent-child dyad is undoubtedly a reciprocal relationship (Maccoby, 1992). If, therefore, clinicians are aware of parental psychological control in the context of an adolescent adjustment problem, they should consider that it is possible that these factors maintain and are maintained by each other. The parent of a depressed or antisocial adolescent may feel compelled to use controlling tactics to try and address the problem but a depressed or antisocial adolescent may be disturbed even further by such intrusive parenting strategies. A clinical approach such as family therapy, therefore, which recognises the repetitive sequences of interactions between family members which maintain and are maintained by the problem (Burnham, 1986) could provide a useful intervention.

Conclusion

Although fourteen longitudinal studies have been considered here, the problem of shared method bias has made it difficult to draw firm conclusion because only four studies have avoided this problem. Overall, however, the evidence suggests that there is a bidirectional link between adolescent adjustment and parental psychological control. The data also indicates that this link might be relevant for male adjustment in early adolescence and throughout development for female adolescents,

however, further research, particularly with multiple informants, is needed to clarify the interactions between gender, psychological control and adjustment.

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Empirical Paper

An investigation of irrational beliefs in parents and adolescent offspring

(Prepared for submission to Journal of Rational-Emotive & Cognitive-Behavior Therapy)

An Investigation of Irrational Beliefs in Parents and Adolescent Offspring

Abstract

Rational Emotive Behaviour Therapy asserts that rigid 'irrational beliefs' are at the root of individual psychological distress and Ellis (1994) suggested that an individual would learn their irrational beliefs primarily from their parents. The aim of the current study was to test whether adolescents resemble their parents in terms of their irrational beliefs and experience of psychological distress. Data were collected from 172 individuals who were members of 69 family groups and analysis was conducted to compare association across all dyad pairings. Overall there was more evidence of difference between parents and adolescents' beliefs than of similarity. There was, however, a significant correlation between father and sons for self-downing beliefs and symptoms of distress suggesting that fathers might model self-deprecating beliefs to male offspring.

Key words: Intergenerational Transmission, Adolescents, Parents, Irrational Beliefs

Introduction

Rational Emotive Behaviour Therapy (REBT) was the first form of Cognitive Behaviour Therapy (CBT) and it was created by Albert Ellis in 1955 (Dryden, 1990). Ellis was influenced by the views of, amongst others, the Roman philosopher, Epictetus, who stated that “men are disturbed not by the things which happen, but by the opinions about the things” (Epictetus, 2004/c90, p.3) and “Seek not that the things which happen should happen as you wish; but wish the things which happen to be as they are, and you will have a tranquil flow of life” (Epictetus, 2004/c90, p.4). REBT asserts, therefore, that psychological distress is caused by people’s beliefs. Ellis (1957) uses the euphemism Irrational Beliefs to denote the cognitions that lead to emotional and behavioural disturbance. Irrational beliefs are evaluative cognitions, which are illogical, inconsistent with reality and, orient people to seek short-term benefits instead of working towards long-term goals. Rigid irrational beliefs are suggested to result in inappropriate/dysfunctional negative feelings, which are associated with psychological problems.

Where, however, do these irrational beliefs come from? An individual’s beliefs and knowledge begin to develop during childhood and initially children often have quite simple epistemologies (Ellis & Bernard, 2006), for example, they may believe that something is true because they have thought it (a narcissistic epistemology; DiGiuseppe, 1991). Children may also believe something simply because their parents tell them it is so. This intergenerational transmission of attitudes and beliefs from parent to offspring is an example of an authoritarian epistemology (DiGiuseppe, 1991). An authoritarian personal epistemology occurs when an individual takes on beliefs from what they believe is a higher source; this could be a social or religious institution as well as a parent, however, Ellis suggested that an individual’s irrational beliefs are influenced foremost by their family (Ellis, 1994). “Children, adolescents, and adults learn both preferences and values as well as antipathies and distastes from their parents... they are gullible to and seriously influenced by their parents’ absolutistic musts, shoulds, oughts, demands and commands” (p13-14, Ellis, 1994).

Despite this assertion that our parents are the main source of our irrational beliefs, Ellis and the REBT community have not formally investigated this and a main aim of the current study was to test the similarity between parent and late adolescent irrational beliefs. Unlike younger children who might believe what their parents tell them, adolescents might be influenced more by other sources (e.g., peers; Stevens & Prinstein, 2005) and, therefore, there may be little resemblance between their own irrational beliefs and those of their parents. Parental views, however, might influence an adolescent both directly through communication within the family, and indirectly through the social status of the family (Vollebergh, Iedma & Raaijmakers, 2001). Therefore, although peers and the media might play an increasing part in the development of an adolescent's worldview, it might be the case that whilst still living at home it is the views of their parents that are the primary influence.

Although no previous research has tested the intergenerational transmission of REBT irrational beliefs, the wider cognitive psychology research community has investigated parent and child cognition with a view to understanding the development of family cognitions and the origins of psychological distress (for a review see Bugental & Johnston, 2000). There are a number of hypothesised mechanisms for how a parent might influence a child to develop a maladaptive cognitive style that promotes vulnerability. Two mechanisms which have received support are modeling and parental inferential feedback. Most research that has tested these mechanisms has come from the perspective of the hopelessness theory of depression (Abramson, Metalsky, & Alloy, 1989). According to the hopelessness theory of depression individuals who attribute negative events to stable, internal and global causes, and who also tend to assume negative consequences and negative self-characteristics following negative events, are at an increased risk for developing depression (Abramson et al., 1989).

The modeling hypothesis suggests that children will develop their cognitive styles in part by observing and then copying significant others (Bandura & Walters, 1963; Kovacs & Beck, 1978). If this is true, then the cognitive styles of children should correlate with those of their parents, parents who attribute negative events to stable, internal, and global causes will have children who do the same. For example, parent and offspring should resemble each other

on item responses for the Dysfunctional Attitudes Scale (DAS; Weissman & Beck, 1978; e.g., If I fail at school or work, then I am a failure as a person).

The majority of studies that have tested this hypothesis have found evidence in favour of the modeling hypothesis particularly between mothers and offspring (e.g., Alloy et al., 2001; Garber & Flynn, 2001). For example, Seligman, Peterson, Kaslow, Tanenbaum, Alloy, and Abramson (1984) report that the depressive attributional style of children correlated with that of their mothers. Alloy et al. (2001) also found support for the modeling hypothesis with a sample of undergraduates; their cognitive style was modeled to some extent on the cognitive styles of their mothers. There is much less evidence to support the hypothesis that father cognitive style is also modeled to offspring, although, generally within the psychopathology literature the role of fathers has been investigated much less frequently than that of mothers (Phares & Compas, 1992). Seligman et al. (1984) and Alloy et al. (2001), however, both failed to find evidence of modeling between fathers and offspring. This may reflect that mothers are likely to be the primary caretakers and that, therefore, offspring may have been exposed to more mother modeling of cognitive style than father modeling of cognitive style (Seligman et al., 1984).

The parental inferential feedback hypothesis is a variation on the modeling hypothesis and it suggests that children develop cognitive vulnerability by internalising the inferential feedback parents' model to them about the causes and consequences of negative events in their own lives (Alloy et al., 2001). For example, using the Parental Attributions for Children's Events Questionnaire (PACE; Berrebi, Tashman, Alloy, & Abramson, 2000), for the scenario "Everyone in your class is invited to a party but you/your child", the selection of the response "of course you weren't invited, you aren't easy to get along with" is an internal global, and stable attribution. The parental inferential feedback hypothesis would suggest that the offspring of parents who make internal, global, and stable attributions would also attribute in this way.

Generally research has supported this hypothesis; Jaenicke et al. (1987) for example found a significant association between mother verbal criticism and child self-blame

attributions for negative events. Alloy et al. (2001) with a sample of adolescents also found support for the parent inferential feedback hypothesis with significant associations between mother or father attributions about negative child-focused events (e.g., failing an exam) and the child's attributions for those events. Many studies have reported similar findings to these (e.g., Fincham & Cain, 1986; Garber & Flynn, 2001; Turk & Bry, 1992). Alloy et al. (2001) suggest that this consistency indicates a robust relationship and that the inferences that parents make about negative events are a powerful influence on offspring cognitive vulnerability more so than modeling.

Within the literature on depression and the theory of hopelessness there is, therefore, evidence of cognitive similarity between parents and offspring, however, there is also evidence of similarity reported for other cognitions. For example, intergenerational similarity has been observed for fear of failure, perfectionism, and 'anxious cognitions' (Cresswell, O'Connor & Brewin, 2006; Elliot & Thrash, 2004; Soenens et al., 2005). There is also a large body of literature in the social and political sciences, which considers the transmission of attitudes and beliefs between parents and offspring. Typically, this research has considered political, religious and/or cultural attitudes across generations. Glass, Bengston and Dunham (1986) investigated these types of attitude across three generations and suggest that there is moderate to high parent-child agreement on religious ideology, moderate transmission for political beliefs and low transmission of gender role attitudes.

There is, therefore, a substantial body of literature from a variety of disciplines and perspectives which would suggest that offspring will tend to resemble their parents in how they think and what they believe. If cognitive theories such as REBT are correct in their assumption that irrational thoughts and beliefs are at the root of emotional and behavioural disturbance then one would also expect that offspring should resemble their parents in terms of their psychological well-being. Indeed, evidence does suggest that parent and adolescent distress is related but this may only be the case in opposite gender dyads (i.e., between mothers and sons, and fathers and daughters; Ge, Conger, Lorenz, Shanahan & Elder, 1995). This finding is counter to what might be predicted from social learning theory; that a child is

most likely to identify with and be influenced by the same sex parent (Bandura, 1965).

Therefore, the associations observed by Ge et al. (1995), might suggest that in adolescence, parent distress might create particular problems for the opposite sex offspring.

Given that research has suggested there may be specific gender interactions between parent and offspring relationships (Ge et al., 1995; Russell & Saebel, 1997) the current investigation considered all four potential dyad pairings within the analysis. A separate analysis was also conducted with dyads where at least one parent was identified as within a clinical range of distress. This is because intergenerational transmission of irrational beliefs may be most likely to occur in families where parents have high levels of psychological disturbance. The more distressed the parents are, the more likely it is that their irrational beliefs might be modelled to their offspring and, therefore, the offspring of distressed parents will have had more exposure to irrational beliefs than offspring of parents who are not disturbed (Alloy et al., 2001).

In summary, there are five research questions that the current study aims to investigate. First, as would be predicted by REBT theory, is endorsement of irrational beliefs associated with psychological distress? Second, do psychologically distressed parents have psychologically distressed offspring? Third, do parents with irrational beliefs have offspring with irrational beliefs? Fourth, are results more marked in families where the parents evidence a high level of distress? Fifth, and finally, is there evidence for greater similarity in same sex versus opposite sex dyads?

Method

Participants

The participants were 171 individuals from 69 family groups. In this context, a family group consisted of at least one parent and at least one adolescent offspring that were living at the same address. Non-biological parents were not excluded but only one father indicated he was an adoptive parent. Three family groups included a mother, father, son, and daughter; 27 family groups consisted of a father, mother, and a son or daughter; 39 groups consisted of a father or mother, and a son or daughter.

The mean age of the 'fathers' ($n = 50$) was 51 years ($SD = 5.0$), the 'mothers' ($n=48$) had a mean age of 48 years ($SD = 4.3$), the 'sons' ($n=27$) and the 'daughters' ($n=46$) both had a mean age of 17 years ($SD = 0.3$; $SD = 0.9$). The majority of the sample ($n=164$; 95%) described their ethnicity as 'White British', the remainder described themselves as 'Black British' ($n=5$; 3%) or 'British Asian' ($n=3$; 2%).

Measures

Two measures and a short demographics questionnaire were administered to each participant. The demographics questionnaire (see Appendix 1) asked participants to indicate age, family position (i.e., 'father', 'mother', etc.) and to describe their ethnicity. The measures administered were the Outcome Questionnaire (OQ-45.2, see Appendix 2; Lambert, Morton, Hatfield, Hamilton, Shimokawa, Christensen et al., 2003) and the Shortened General Attitude and Belief Scale (see Appendix 3; Lindner, Kirkby, Wertheim, & Birch, 1999).

The OQ-45.2 was chosen because it measures a number of areas of functioning that are relevant to mental health (symptoms, interpersonal problems, social role functioning and quality of life). It was designed to be used as a baseline screening instrument and as such it is quick and easy to administer and has good psychometric properties.

To investigate REBT type irrational beliefs the General Attitude and Belief Scale (GABS; Bernard, 1990) has been used in a wide range of studies and its internal consistency and validity have been established by independent investigators (Lindner et al., 1999). It has

been criticised, however, for being too long as repetitive and Lindner et al. (1999) report that respondents often fail to complete this instrument. Lindner et al. (1999), therefore, set out to develop and validate a briefer version, the Shortened General Attitude and Belief Scale (SGABS). As an aim of this study was to analyse data from family groups, complete sets of data were desirable and, therefore, the SGABS was chosen for the measurement of irrational beliefs.

The Outcome Questionnaire (OQ-45.2). The OQ-45.2 is a 45-item measure, which assesses psychological distress, interpersonal relationships and social role. The questionnaire, therefore, seeks to assess how an individual is feeling inside, how they are getting on with their significant others and how they are getting on with important life tasks (i.e., work or school). Subjects are asked to rate the frequency (never, rarely, sometimes, frequently, almost always) that they have experienced items (e.g., 'I feel lonely', 'I like myself') over the last week. The total score (OQ Total) range is 0-180 with a higher score indicating greater distress, a score above 63 indicates a clinical level of disturbance. The Symptom Distress score (SD), 25 items (e.g., I tire quickly) has a range 0-100 with a cut-off of 36; the Interpersonal Relations score (IR), 11 items (e.g., I get along well with others) has a range 0-44 with a cut-off of 15; the Social Role score (SR), 9 items (e.g., I feel stressed at school/work) has a range 0-36 with a cut-off of 12.

The OQ-45.2 has good psychometric properties; test-retest reliability for the subscale scores has been reported to range from .78 to .82 (Lambert et al., 2003) and the internal consistency alpha coefficient was .93 in non-clinical and clinical subject groups. The concurrent validity of the OQ-45.2 was measured by calculating Pearson Product moment correlation coefficients with ten diagnostic instruments (e.g., Beck Depression Inventory (BDI), Beck, Ward, Mendelson, Mock & Erbaugh, 1961; Symptom Checklist-90-R, Derogatis, 1977; State-Trait Anxiety Inventory, Spielberger, 1983). All of the concurrent validity estimates are reported as being significant beyond the .01 level of confidence (Lambert et al., 2003). Lambert et al. (2003) provide normative data for a number of groups

including an undergraduate sample (N = 285; mean OQ Total score = 42.15; SD = 16.61) and a community sample of adults (N = 815; mean OQ Total score = 45.19; SD = 18.57).

The Shortened General Attitude and Belief Scale (SGABS). The SGABS is a 26-item measure, which was designed to provide a brief assessment of irrational thinking in accordance with ideas from REBT theory. There are seven subscales for this measure, one subscale measures rational thinking (4 items) and the other six examine aspects of irrational thinking: Self-Downing (4 items), Need for Achievement (4 items), Need for Approval (3 items), Need for Comfort (4 items), Demand for Fairness (4 items), and Other downing (3 items). Table 1 provides an example statement for each subscale (Bernard, 1990).

Table 1 *Example of statements from the subscales of the GABS*

Subscale	Subscale statement example
Rationality	I have worth as a person even if I do not perform well at tasks that are important to me
Self-Downing	If important people dislike me, it is because I am an unlikable, bad person
Need for Achievement	It's unbearable to fail at important things, and I can't stand not succeeding at them
Need for Approval	When people who I want to like me disapprove of me or reject me, I can't bear their disliking me
Need for Comfort	It's unbearable being uncomfortable, tense, or nervous and I can't stand it when I am
Demand for Fairness	I cannot stand being treated unfairly, and I think unfairness is unbearable
Other Downing	If people treat me without respect, it goes to show how bad they really are

For each item participants are asked to indicate the extent of their agreement with the statement on a 5-point scale: 1, strongly disagree; 2, disagree; 3, neutral; 4, agree; 5, strongly agree. A Total Irrationality score can be calculated by summing all of the irrational subscales. High scores for the irrational subscales indicate irrational thinking and high scores for the rationality subscale indicate rational thinking.

Lindner et al. (1999) report that the SGABS has moderate to high test-retest reliability for all the subscales (.65-.87) and a high test-retest reliability for Total Irrationality. Validity was investigated by measuring the association between the SGABS, the Irrational Beliefs Scale (Malouff & Schutte, 1986) and the BDI; moderate associations were reported. There is, however, no previously published research which uses this measure with adolescent populations.

Procedure

The School of Psychology Ethics Committee gave ethical approval for the study (see Appendix 4) and data collection was carried out at a University open day event. At the open day in the School of Psychology, a number of studies were conducting data collection with an aim to demonstrate aspects of psychological research to potential students and their parents. Visitors to the open day who came along to look at the research were approached and asked if they would like to participate in an 'An investigation of family attitudes and beliefs'. Interested parties were provided with an information sheet (see Appendix 5) and were given an opportunity to ask any questions they might have about the study. It was made clear to potential participants that there was no obligation to take part and that if they did decide to participate they could withdraw at any time. Those who agreed to participate were taken to a section with tables and chairs and asked to complete the measures individually, without discussion, and then return them to the experimenter.

Results

Reliability analyses to check the internal consistency of the scales were performed on the OQ-45.2 and the SGABS (see Table 2). The OQ Total and the SD and IR subscales had Cronbach's α values of .79 or greater. The SR subscale, however, had weak reliability. For the SGABS, moderate internal consistency was found for Self-Downing, Need for Achievement, Need for Comfort and Total Irrationality. The Need for Approval, Demand for Fairness, Other Downing and Rationality subscales had poor internal consistency.

Table 2 *Coefficient α Values for the OQ-45.2 and the SGABS*

Scale	α Coefficient (n=172)
OQ-45.2	
Symptom Distress	.870
Interpersonal Relations	.792
Social Role	.578
OQ Total	.915
SGABS	
Rationality	.476
Self-Downing	.770
Need for Achievement	.825
Need for Approval	.667
Need for Comfort	.726
Demand for Fairness	.696
Other Downing	.620
Total Irrationality	.872

Kolmogorov-Smirnov tests revealed that four of the scales from the OQ-45.2 and the SGABS were distributed normally (OQ Total, SD, Need for Comfort and Total Irrationality: see Table 3), whereas the other scales in the OQ SGABS evidence some deviation from normality. In subsequent analyses non-parametric tests have been used for all subscales found not to be normally distributed and parametric tests for those scales showing normality.

Table 3 *Kolmogorov-Smirnov test results for the OQ-45.2 and the SGABS*

Scale	Kolmogorov-Smirnov Z	p
OQ-45.2		
Symptom Distress	1.03	.236
Interpersonal Relations	1.45	.031
Social Role	1.83	.002
OQ Total	1.08	.192
SGABS		
Rationality	1.68	.007
Self-Downing	1.69	.007
Need for Achievement	1.62	.010
Need for Approval	1.77	.004
Need for Comfort	1.23	.099
Demand for Fairness	1.70	.006
Other Downing	1.41	.037
Total Irrationality	0.80	.540

The results relating to each research question are now presented under separate headings. To address these questions regression analysis has been used to investigate whether variables are predictive and correlation has been used to measure association between variables. Because correlation has been used to make multiple comparisons, a conservative probability level of 0.01 has been selected to minimise the likelihood of Type 1 errors.

Is endorsement of irrational beliefs associated with psychological distress?

The association between the OQ-45.2 and the SGABS was investigated with Pearson Product moment correlation coefficients and also with Spearman's Rho correlation coefficients (see Table 4).

Table 4 *Correlation[~] between the OQ-45.2 and the SGABS*

	OQ Total	SD	IR	SR
SGABS				
Rationality	-.197**	-.164*	-.253**	-.171*
Self-Downing	.357**	.358**	.335**	.210**
Need for Achievement	.126	.134	.072	.156*
Need for Approval	.284**	.296**	.253**	.171*
Need for Comfort	(.225**)	(.213**)	.184*	.206**
Demand for Fairness	.116	.135	.059	.061
Other Downning	.166*	.176*	.110	.135
Total Irrationality	(.345**)	(.346**)	.246**	.255**

** = Correlation is significant at the 0.01 level * = Correlation is significant at the 0.05 level

[~]Spearman's Rho correlation (results in brackets are Pearson Product moment correlation coefficients)

Significant associations were found between distress, as measured by the OQ-45.2, and Rationality, Self-Downing, Need for Approval, Need for Comfort, Other Downing and Total Irrationality. According to Cohen's (1988) conventions for describing effect sizes, the correlations between the OQ-Total and Self-Downing, Total Irrationality and Need for Approval would be described as medium. The shared variance between the OQ-Total and Self-Downing was 13 per cent with Total Irrationality this was 12 per cent and with Need for Approval this was 8 per cent. The correlations between the OQ-45.2, and Rationality, Need for Approval, Need for Comfort, and Other Downing would be described as small.

A stepwise regression analysis was undertaken in order to establish whether the endorsement of irrational beliefs (i.e., subscales of the SGABS) is predictive of psychological distress (i.e., OQ Total). In order to reduce the problem of collinearity (that is, was covariance within the predictor variables results in biased estimated of the unique contribution of each individual predictor variable to the prediction of the dependent variable) a backward elimination method was employed. In this method all of the potential predictor variables are entered into the regression equation at step one. The overall sum of square explained is calculated and the individual contribution of each of the predictor variables as calculated. In step two the impact of removing a variable from the equation is calculated for each of the predictor variables. The variable that has the least impact on the overall explained sum of squares is then removed from the equation, the overall sum of square explained is again calculated and the individual contribution of each of the predictor variables is identified. This process is repeated until the removal of subsequent predictor variables has a significant and substantial effect upon the total sums of squares explained.

This stepwise regression (see Appendix 6) converged on a model with two predictor variables (Self-Downing and Need for approval). This model accounted for 18.7 per cent of the variance of the OQ Total ($F_{2,170} = 19.35, p < 0.01$). The beta coefficients for both Self-Downing (Beta = .30, $t = 3.84, p < 0.01$) and Need for Approval (Beta = 0.21, $t = 2.71, p$

<0.01) were significant, suggesting that each of these scales is providing a unique contribution to the prediction of psychological distress.

The analyses carried out to investigate the remaining study hypotheses indicated that there were significant differences between the two generations being tested. The above analysis, therefore, was repeated for parents and for offspring to investigate whether the endorsement of irrational beliefs predicted distress in different ways for these groups.

Considering only the parent sample, there were medium associations between distress (i.e., OQ Total) and Need for Comfort (10 per cent shared variance), Self-Downing (9 per cent shared variance), and Total Irrationality (9 per cent shared variance) (See Table 5).

Table 5 *Correlation between the OQ-45.2 and the SGABS for parents*

	OQ Total	SD	IR	SR
SGABS				
Rationality	-.046	-.018	-.161	-.033
Self-Downing	.294**	.289**	.286**	.171
Need for Achievement	.056	.043	-.002	.124
Need for Approval	.247*	.247*	.225*	.187
Need for Comfort	(.316**)	(.316**)	.224*	.291**
Demand for Fairness	.127	.160	.025	.086
Other Downning	.091	.098	.068	.077
Total Irrationality	(.297**)	(.285**)	.207*	.264**

** = Correlation is significant at the 0.01 level * = Correlation is significant at the 0.05 level

~ Spearman's Rho correlation (results in brackets are Pearson Product moment correlation coefficients)

Regression analysis (see Appendix 6) was undertaken in order to establish whether parent endorsement of irrational beliefs is predictive of parent psychological distress. A stepwise regression analysis converged on a model with two predictor variables (Need for Comfort and Self-Downing). This model accounted for 14.8 per cent of the variance of the OQ Total ($F_{2,97} = 8.26, p < 0.01$). The beta coefficients for both Need for Comfort (Beta = .26, $t = 2.64, p = 0.01$) and Self-Downing (Beta = 0.23, $t = 2.30, p < 0.03$) were significant, suggesting that each of these scales is providing a unique contribution to the prediction of psychological distress.

Considering only the offspring sample a different pattern was observed; there were medium associations between distress (i.e., OQ Total) and Rationality (14 per cent shared variance), and Need for Approval (8 per cent shared variance) and large associations between OQ-Total and Self-Downing (20 per cent shared variance), and Total Irrationality (19 per cent shared variance) (See Table 6).

Regression analysis (see Appendix 6) was undertaken in order to establish whether offspring endorsement of irrational beliefs is predictive of offspring psychological distress. A stepwise regression analysis converged on a model with three predictor variables, Rationality (Beta = -.29, $t = -2.63, p = 0.011$), Need for Comfort (Beta = -.25, $t = -2.02, p < 0.05$), and Total Irrationality (Beta = .46, $t = 3.61, p = 0.001$). This model accounted for 29 per cent of the variance of the OQ Total ($F_{1,72} = 9.53, p < 0.001$).

Table 6 *Correlation between the OQ-45.2 and the SGABS for offspring*

	OQ Total	SD	IR	SR
SGABS				
Rationality	-.378**	-.363*	-.350**	-.348**
Self-Downing	.448**	.452**	.411**	.296*
Need for Achievement	.226	.191	.228	.250*
Need for Approval	.284**	.296**	.253**	.171*
Need for Comfort	(.086)	(.040)	.129	.078
Demand for Fairness	.078	.081	.096	.050
Other Downing	.272*	.299*	.169	.199
Total Irrationality	(.431**)	(.429**)	.350**	.287*

** = Correlation is significant at the 0.01 level * = Correlation is significant at the 0.05 level

~ Spearman's Rho correlation (results in brackets are Pearson Product moment correlation coefficients)

Do psychologically distressed parents have psychologically distressed offspring?

The mean and median scores for the OQ-45.2 and its subscales for each family member type are shown in Table 7. The OQ Total cut-off score was used to identify individuals in the clinical range; 11 fathers, seven mothers, six sons and nine daughters scored above 63.

Table 7 *Mean (standard deviation) and median scores for the OQ-45.2*

	Fathers	Mothers	Sons	Daughters
OQ Total	48.4 (18.0) 46.5	46.9 (16.4) 44.5	49.7 (18.3) 47.0	46.3 (16.8) 43.0
SD	25.8 (10.3) 24.5	26.2 (9.6) 26.0	26.9 (10.8) 25.0	26.7 (10.0) 24.0
IR	11.9 (6.1) 11.0	10.7 (5.9) 10.0	12.2 (5.8) 11.0	10.3 (4.7) 9.0
SR	10.7 (3.5) 10.0	10.4 (3.5) 10.0	10.6 (3.6) 10.0	9.3 (3.4) 9.0

In order to assess the association between parent and offspring distress (i.e., OQ Total, SD, IR, and SR) a Pearson or Spearman correlation coefficient was calculated between each parent/offspring dyad (e.g., father-son; father-daughter; mother-son; mother daughter). For the IR subscale there was a significant correlation between fathers and daughters ($r = .490, p < .01$).

In order to establish whether there was a difference in the objective level of distress in each member of the dyad then a series of paired t-tests (or Mann-Whitney tests) was undertaken. For the SR subscale a Mann-Whitney test indicated that fathers had significantly higher scores than daughters ($Z = -2.05, p < .05$).

Regression analyses were also carried out to investigate whether son or daughter distress could be predicted by father and/or mother distress. No significant findings were observed between son distress (i.e., OQ Total) and parent distress ($F_{2,14} = .04, p > .05$; Father OQ Total: Beta = $-.04, t = -.05, p > .05$; Mother OQ Total: Beta = $.11, t = .28, p > .05$). Nor were significant findings observed between daughter distress and parental distress ($F_{2,15} = .22, p > .05$; Father OQ Total: Beta = $-.09, t = .32, p > .05$; Mother OQ Total: Beta = $-.19, t = -.65, p > .05$).

Do parents with irrational beliefs have offspring with irrational beliefs?

The mean scores for the SGABS and its subscales for each family member type is shown in Table 8. In order to assess the association between parent and offspring irrational beliefs (i.e., the SGABS subscales) a Pearson or Spearman correlation coefficient was calculated between each parent/offspring dyad. The only significant correlation was between fathers and sons for Self-Downing ($r = .411, p = .046$).

Table 8 *Mean (standard deviation) and median scores for the SGABS*

	Fathers	Mothers	Sons	Daughters
Rationality	15.8 (2.2) 16.0	15.9 (1.8) 16.0	15.1 (2.3) 15.0	16.0 (1.9) 16.0
Self-Downing	6.5 (2.2) 6.0	6.9 (2.2) 6.5	6.7 (2.5) 6.0	7.5 (2.7) 7.0
Need for Achievement	10.3 (3.2) 10.0	9.6 (2.8) 9.0	12.0 (2.9) 12.0	12.0 (2.9) 12.0
Need for Approval	7.7 (2.1) 8.0	7.6 (2.0) 8.0	7.8 (2.5) 8.0	8.3 (2.1) 8.0
Need for Comfort	11.3 (2.9) 11.0	11.9 (2.8) 12.0	12.9 (2.5) 13.0	11.7 (2.3) 12.0
Demand for Fairness	13.1 (2.3) 14.0	13.3 (2.9) 13.0	13.7 (2.5) 14.0	13.8 (2.3) 14.0
Other Downning	7.9 (2.2) 8.0	7.8 (2.4) 8.0	7.7 (2.1) 8.0	7.7 (1.9) 8.0
Total Irrationality	56.8 (10.4) 57.0	57.0 (10.9) 56.0	60.6 (9.5) 62.0	61.0 (9.5) 61.0

In order to establish whether there was a difference in the objective level of irrational belief in each member of the dyad, a series of paired t-tests (or Mann-Whitney tests) was undertaken. Significant differences were found between the mean scores for mothers and sons for Rationality (mothers had higher scores: $Z = -1.96, p = .050$), and between mothers and daughters for Total Irrationality (daughters had higher scores: $t(31) = -2.58, p = .015$). There were significant differences between all dyad pairings for Need for Achievement. Parents had lower scores than offspring (fathers and sons: $Z = 2.38, p = .017$; fathers and daughters: $Z = -2.86, p = .004$; mothers and sons: $Z = -3.12, p = .002$; mothers and daughters: $Z = -3.88, p < .001$).

Regression analyses were also carried out to investigate whether son or daughter irrational beliefs could be predicted by father and/or mother irrational beliefs. No significant findings were observed between son irrational beliefs (i.e., Total Irrationality) and parental irrationality (i.e., father and mother Total Irrationality) or between daughter irrationality and parental irrationality ($F_{2,15} = .08, p > .05$; $F_{2,16} = 2.03, p > .05$).

Do the offspring of parents with a clinical level of distress have a similar level of distress or similar irrational beliefs?

A subsample of parents with a high level of psychological distress was identified for further analysis. Parents were identified as high distress (HD) if they scored above the OQ Total cut-off or if they scored above the cut-off for two of the three OQ subscales. This criterion yielded a high distress (HD) subsample of 12 fathers and nine mothers. The 12 HD fathers had seven sons and eight daughters between them. The nine HD mothers had six sons and five daughters.

In order to assess the association between HD parent and offspring distress a Pearson or Spearman correlation coefficient was calculated between each HD parent/offspring dyad for the OQ Total and all OQ-45.2 subscales. No significant correlation was found

In order to assess the association between HD parent and offspring irrational beliefs a Pearson or Spearman correlation coefficient was calculated between each HD parent/offspring dyad for the SGABS subscales. No significant associations were found.

Is there evidence for greater similarity in same-sex versus opposite-sex dyads?

In order to assess whether there was greater similarity between same-sex dyads compared with opposite-sex dyads a Pearson correlation coefficient was calculated between each parent/offspring dyad for families where data was available for both fathers and mothers ($n = 29$). Correlation was investigated for the OQ Total (see Table 9) and Total Irrationality from the SGABS (see Table 10). No significant association was observed between same-sex or opposite-sex parent /offspring dyads.

Table 9 *Correlation between parent/offspring dyads for OQ Total*

	Father	Mother
Son	$r = .028, p = .920$ $n = 15$	$r = .077, p = .786$ $n = 15$
Daughter	$r = .020, p = .942$ $n = 17$	$r = -.180, p = .489$ $n = 17$

Table 10

Correlation between parent/offspring dyads for Total Irrationality

	Father	Mother
Son	$r = -.004, p = .990$ $n = 15$	$r = -.050, p = .859$ $n = 15$
Daughter	$r = -.086, p = .742$ $n = 17$	$r = .433, p = .083$ $n = 17$

Discussion

The main research questions for this study sought to investigate intergenerational transmission, from parent to offspring, of irrational beliefs and psychological distress. Overall, however, there was more evidence of difference between parents and adolescents than similarity; parental distress or endorsement of irrational beliefs did not predict offspring distress or irrational beliefs. Some correlations were observed though, for example, between fathers and sons for psychological symptoms of distress and self-deprecating beliefs. One explanation for this result might be that the related symptom distress of fathers and sons comes about from fathers transmitting irrational beliefs about self-worth to their sons, for example by modeling these beliefs.

Overall, however, the evidence suggests that the adolescents in the current sample did not have authoritarian epistemologies that were derived from their parents' beliefs. The most significant difference observed was for beliefs about achievement (e.g., if I do not perform well at things which are important, it will be a catastrophe); both mothers and fathers had significantly fewer irrational beliefs about achievement than their sons and daughters. That offspring beliefs about achievement were significantly more irrational than their parents' is perhaps not surprising given the sample and the setting for the study. All of the adolescent participants in this sample were studying for A-Level examinations and considering application to higher education. During this period in their lives, academic achievement and exam performance is likely to be on the minds of these young people a great deal, and to be a major source of stress. In addition, visiting a University, and perhaps one they would like to attend, may have further heightened any anxiety about failure they may have had. It may be, therefore, that in another setting or at another time, a different result might have been observed and further research is needed to establish the state versus trait nature for this and all of the subscales of irrationality investigated here.

It was hypothesised that stronger links between parent and adolescent irrational beliefs might be observed in dyads where the parent was exhibiting a clinical level of distress. The rationale for this was that, if the central mechanism of intergenerational transmission is

social learning, then if the parent has a high level of distress their offspring will have more exposure to irrational beliefs and, therefore, be more likely to model them. The results provide some tentative support for this hypothesis but the available sample to test this was very small and, therefore, no regression analysis could be conducted meaningfully.

This study does provide support for the first hypothesis tested that, as would be predicted by REBT theory, the endorsement of irrational beliefs predicts psychological distress. For both parents and adolescents, endorsement of self-deprecating statements was associated with distress. This result is also in accordance with the hopelessness theory of depression (Abramson et al., 1989) as the self-downing statements on the SGABS attribute individual failure to global and stable attributes. Of the other irrational belief types measured by the SGABS, need for approval and need for comfort, were also strongly linked to distress. There was little or no support, however, for a link between demand for fairness, other downing, or need for achievement and distress.

Although Ellis originally suggested that there were 11 types of Irrational Beliefs (Ellis, 1962), subsequent developments in CBT and REBT have pointed to four categories of dysfunctional cognitive processes (David, Szentagotai, Eva, & Macavei, 2005). These categories are demandingness, awfulizing/catastrophizing, global evaluation/self-downing, and frustration intolerance. In the current study, irrational beliefs were investigated using the SGABS, which measures six types of irrational belief. Of the SGABS subscales, only Self-Downing can easily be mapped onto one of these four dysfunctional processes (i.e., global evaluation/self-downing). If the current study had also included measures of demandingness, awfulizing and frustration intolerance, these may also have predicted distress and might have shown to be processes that are passed from one generation to the next. Therefore, although the SGABS is considered one of the 'new generation' of REBT instruments (David et al., 2005), ongoing research and development is needed to refine tools so that REBT can continue to evolve its understanding of the nature of irrational beliefs and determine which are the dysfunctional processes that research should focus on.

Overall this study provides tentative evidence that some REBT irrational beliefs might be transmitted from parent to child. The clearest link observed was between fathers and sons for self-downing irrational beliefs suggesting that beliefs like ‘If important people dislike me, it is because I am an unlikable bad person’ might be modeled across generations in male family members. This finding might suggest, therefore, that there could be something particularly relevant to sons about self-downing beliefs in fathers. Perhaps cultural pressure on males to be successful makes this type of irrational belief particularly salient, and being exposed to self-downing beliefs through modeling or through direct parental feedback might be particularly powerful when delivered by the same sex parent.

That fathers and sons resemble each other more than mothers and sons and fathers and daughters, is what would be predicted by social learning theory (Bandura, 1965), however, it would follow that mothers and daughters should resemble each other also, which they do not. It might be the case, therefore, that irrational beliefs are not transmitted by modeling within the family but indirectly by cultural means through the social status of the family (Vollebergh, Iedema & Raaijmakers, 2001). Unfortunately it was not possible to test this and a limitation of this study is that the demographic questionnaire did not include a measure of socioeconomic status. If this information had been collected it might have indicated that class status is a stronger predictor of adolescent irrational beliefs than parental beliefs are. It might also have been beneficial to have investigated the quality of the parent-child relationship which might be a mediating factor in whether or not beliefs are transmitted successfully from one generation to the next. In addition, the beliefs of siblings and friends might also be included for consideration in future research.

There are also other limitations of the study that highlight shortcomings of this research and suggest directions for future work. First, this study was cross-sectional and cannot inform us about direction of effect. Whilst, therefore, it has been assumed that similarity between parent and adolescent beliefs might suggest transmission of beliefs from the parent to the child, it could also be the case that adolescent beliefs influence parent beliefs or that there is a mutual influence. Second, this study relied exclusively on self-report

questionnaire measures rather than directly assessing irrational beliefs and communications between parents and adolescents. Any significant results, therefore, might be an artefact of other factors related to response style. Alternatively, genuine similarity between parents and adolescent irrational beliefs might not have been reported in a questionnaire format but might have been evident in a structured interview or a test of situation response.

Further criticism might also be directed at the choice of questionnaire measures. For example, the OQ-45.2 assessed a high proportion of this non-clinical sample to score higher than the clinical cut-off point: over one-fifth of fathers, sons and daughters. However, this measure was designed to be a screening tool in a clinical population and in this context was being used as a research tool to broadly identify individuals who were experiencing some form of psychological distress in a non-clinical population. Further research with different measures of psychological distress might, therefore, yield a different pattern of results. There are other limitations of this study which point to areas that future research might consider. For example, it might have been beneficial to have investigated the quality of the parent-child relationship which might be a mediating factor in whether or not beliefs are transmitted successfully from one generation to the next. In addition, the beliefs of siblings and friends might also be included for consideration in future research.

One strength of this study is that the adolescents in this sample were homogenous in terms of age, education level and ethnicity so that although the results are not generalisable to other populations, we might draw some conclusions about the irrational beliefs of White 17 year-old adolescents who are thinking about enrolment in higher education. Another strength is that this study has attempted to collect whole family data and not just data from one parent. Many studies that investigate parent and child factors only collect data from mothers and research that also considers the role of fathers is needed (Phares & Compas, 1992). However, although the present study collected data from fathers, there were very few data sets with information from both parents. Future research that collected information from both parents would enable researchers to address questions about whether having two parents with irrational beliefs might have a greater impact than if it was just one parent, or whether having

one parent with rational beliefs might serve to buffer an adolescent from developing irrational beliefs (Steinberg, 2001).

In conclusion, apart from the association between fathers and sons for self-downing beliefs, the main finding is that adolescents are more different to their parents than they are similar with regards to psychological distress and irrational beliefs. Within psychology, and indeed within broader circles, there is often an implicit assumption that early childhood experience is critical to adult outcome (Schaffer, 2000). Whilst this may or may not be true, the pathways from childhood to adulthood are undoubtedly complex; transactional models of development help illustrate the dynamic relationship between an individual and their environment and experiences over time (Sameroff & Chandler, 1975). Therefore, even if children do start out by simply believing and adopting those beliefs they observe in their parents, the results from the current study would suggest that by late adolescence an individual's irrational beliefs are not a simple replication of those they have been exposed to in the home.

The association between fathers and sons for self-downing beliefs, however, does have some clinical relevance and the discovery of factors that contribute to the development of irrational beliefs helps to provide clinicians with possible tools for identifying young people at risk for cognitive vulnerability to distress. In addition, the targeting of self-downing irrational beliefs in fathers might be a useful approach to treating or preventing the psychological distress arising from self-downing irrational beliefs in young men.

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Public Domain Briefing Paper

Intergenerational Aspects of Psychological Control and Irrational Beliefs
in Parents and Adolescents

Background

It is often assumed that parents are a major influence on their children's mental health. Research, however, has challenged this assumption and has also shown that when there is a link between the generations, the direction of effect is not always or only from parent to child. The aim of the current work was to consider two questions in relation to whether parents might be a relevant contributor to adolescent psychological distress. First, the relationship and direction of influence between parental psychological control and adolescent adjustment is considered in a review of the literature on this topic. Second, a research study considers whether parents and adolescents share similar irrational beliefs that underlie psychological distress.

Literature review

Over a decade ago Barber (1996) drew attention to parental psychological control as a 'neglected construct' that he suggested was very relevant to adolescent adjustment. Psychological control is an insidious method of parenting that manipulates and exploits the parent-child bond in order to pressure the child to conform to parent goals and norms. It is sometimes referred to as intrusive parenting. Psychologically controlling parents might engage in tactics such as guilt or anxiety induction, love withdrawal (e.g., giving the child the silent treatment), excessive personal control (e.g., using authority to restrict self-expression), or use of affect-laden expressions and criticisms (e.g., indications of disappointment and shame).

Although the direction of influence between this negative parenting practice and poor adolescent adjustment might intuitively seem to be from parent to child, some have suggested that this style of parenting might in fact be a response to poor adolescent adjustment. It has been suggested that, for example, faced with a depressed and withdrawn teenager or with an aggressive and antisocial young person, parents might engage in psychologically controlling strategies out of desperation when other tactics have failed. This line of argument suggests,

therefore, that the parent behaviour is a response to the adolescent rather than the other way around.

Since Barber's publication, and particularly in the last five years, a number of longitudinal studies have now been completed. Longitudinal studies are of particular importance because they mean that it is possible to consider the direction of influence between parent and offspring. The aim of the literature review, therefore, was to consider this body of evidence and to determine what conclusions could be drawn about the influence of this parenting method on adolescent well-being.

Unfortunately, however, most of the studies that have looked at this issue have been conducted in such a way that they are biased and likely to observe a positive relationship. A major conclusion of this review, therefore, was that future research should attempt to avoid this pitfall by making sure that data from both parents and adolescents is analysed. Overall though, the studies reviewed did provide evidence of a link between parental psychological control and adolescent adjustment. The weight of literature also supported the idea that the direction of influence was mutual with parents and adolescents influencing each other.

Research Study

Research Aims

The aim of this study was to explore whether adolescents and parents resemble each other in terms of irrational beliefs and psychological distress.

Research Background

Rational Emotive Behaviour Therapy (REBT) asserts that rigid 'irrational beliefs' are at the root of individual psychological distress and it has been suggested that we learn our irrational beliefs primarily from their parents (Ellis, 1994). Irrational beliefs are judgements that are illogical, inconsistent with reality and, lead people to seek short-term benefits instead of working towards long-term goals. An irrational belief, for example, could be 'It's unbearable to fail at important things and I can't stand not succeeding at them'.

Although the similarity between parents and adolescents has not previously been investigated in terms of REBT irrational beliefs, other research has suggested that there is similarity between parents and their offspring in how they think and make judgements about the world.

Participants

The participants were 172 individuals from 69 family groups. In this context, a family group consisted of at least one parent and at least one adolescent offspring that were living at the same address. The mean age of fathers was 51 years, mothers had a mean age of 48 years, and sons and daughters both had a mean age of 17 years. The majority of the sample (95%) described their ethnicity as 'White British'.

Research Method

Participants were given two questionnaires to complete. The first of these aimed to measure participant experience of psychological distress and satisfaction with interpersonal relationships and social role. Participants were asked to rate the frequency (never, rarely, sometimes, frequently, almost always) that they had experienced 45 items (e.g., 'I feel lonely', 'I like myself') over the last week.

The second questionnaire contained 26 items and was used to measure irrational thinking, in accordance with ideas from REBT theory. For each item participants were asked to indicate the extent of their agreement with the statement on a 5-point scale: 1, strongly disagree; 2, disagree; 3, neutral; 4, agree; 5, strongly agree. Example items: 'It's unbearable being uncomfortable, tense or nervous and I can't stand it when I am'; 'It's awful to be disliked by people who are important to me and it is a catastrophe if they don't like me'.

The statistical analysis of the questionnaire data used correlation analysis to measure the similarity between parents and offspring and regression analysis was used to investigate whether the endorsement of irrational beliefs was predictive of psychological.

Findings

Overall there was more evidence of difference between parents and adolescents than similarity; parent psychological distress or pattern of irrational beliefs did not predict distress or a similar pattern of beliefs in their adolescent children. There was, however, some similarity observed between fathers and sons for psychological symptoms of distress and 'self-downing beliefs'. This finding suggests that self-downing irrational beliefs, like 'If important people dislike me, it is because I am an unlikable bad person' might be passed across generations in male family members.

Implications of Findings and Future Directions

Overall this study provides tentative evidence that some REBT irrational beliefs may be transmitted from parent to child, especially self-downing beliefs from fathers to sons. This might be because cultural pressure on males to be successful makes them particularly susceptible to adopting this type of irrational belief if exposed to it. This finding, however, needs to be tested with different samples to see how robust this result is.

If this finding is robust then it might be possible to identify and offer early intervention to young men whose fathers are psychologically distressed and hold self-downing type irrational beliefs.

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Appendices

Appendix 1

Demographics questionnaire

Age_____

Ethnicity_____

Please identify your family position:
(Please tick box as appropriate)

- Son
- Daughter
- Mother
- Father
- Step-mother
- Step-father
- Adoptive-mother
- Adoptive father
- Other please state_____

Appendix 2

The Outcome Questionnaire (OQ-45.2)

The Outcome Questionnaire (OQ-45.2)

Instructions: Looking back over the last week, including today, help us understand how you have been feeling. Read each item carefully and mark the box under the category which best describes your current situation. For this questionnaire, work is defined as employment, school, housework, volunteer work, and so forth.

	Never	Rarely	Some- times	Freq- uently	Almost Always
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
18	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
25	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
26	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
27	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
28	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
29	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
37	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
38	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
39	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
40	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
41	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
42	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
43	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
44	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
45	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix 3

The Shortened General Attitude and Belief Scale (SGABS)

Here are a set of statements which describe what some people think and believe. Read each statement carefully and decide how much you agree or disagree with it.

- If you **STRONGLY AGREE** with the statement circle number **5**
 If you **AGREE** **4**
 If you are **NEUTRAL** **3**
 If you **DISAGREE** **2**
 If you **STRONGLY DISAGREE** **1**

There are no right or wrong answers. Only you can tell what you really believe so please mark the way you really think. Circle the number which shows your agreement or disagreement with each statement. Please try to answer each question.

Example:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
People should never break a promise	1	2	3	④	5

This person has shown that s/he agree with this statement by circling number 4. If this person had strongly agreed with the statement s/he would have circled number 5.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
It's unbearable to fail at important things and I can't stand not succeeding at them.	1	2	3	4	5
I can't stand a lack of consideration from other people and I can't bear the possibility of their unfairness.	1	2	3	4	5
It's unbearable being uncomfortable, tense or nervous and I can't stand it when I am.	1	2	3	4	5
I have worth as a person even if I do not perform well at tasks that are important to me.	1	2	3	4	5
I can't stand being tense or nervous and I think tension is unbearable.	1	2	3	4	5
It's awful to be disliked by people who are important to me and it is a catastrophe if they don't like me.	1	2	3	4	5
If important people dislike me it is because I am an unlikable bad person.	1	2	3	4	5
When I am treated inconsiderately I think it shows what kind of bad and hopeless people there are in the world.	1	2	3	4	5
If I am rejected by someone I like, I can accept myself and still recognise my worth as a human being.	1	2	3	4	5
If I do not perform well at tasks that are important to me it is because I am a worthless bad person.	1	2	3	4	5

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
It's awful to do poorly at some important things and I think it is a catastrophe if I do poorly.	1	2	3	4	5
I think it is terribly bad when people treat me with disrespect.	1	2	3	4	5
When people I like reject me or dislike me it is because I am a bad or worthless person.	1	2	3	4	5
I cannot stand being treated unfairly and I think unfairness is unbearable.	1	2	3	4	5
I believe that if a person treats me very unfairly they are bad and worthless.	1	2	3	4	5
I can't stand hassles in my life.	1	2	3	4	5
It's awful to have hassles in one's life and it is a catastrophe to be hassled.	1	2	3	4	5
I cannot tolerate not doing well at important tasks and it is unbearable to fail.	1	2	3	4	5
It is important that people treat me fairly most of the time, however, I realise I do not have to be treated fairly just because I want to be.	1	2	3	4	5
If I do not perform well at things which are important it will be a catastrophe.	1	2	3	4	5
It is unbearable to not have respect from people and I can't stand their disrespect.	1	2	3	4	5
If important people dislike me, it goes to show what a worthless person I am.	1	2	3	4	5
I must be liked and accepted by people I want to like me and I will not accept their not liking me.	1	2	3	4	5
I want to be liked and accepted by people whom I like, but I realise they don't have to like me just because I want them to.	1	2	3	4	5
When people who I want to like me disapprove or me or reject me, I can't bear their disliking me.	1	2	3	4	5
If people treat me without respect, it goes to show how bad they really are.	1	2	3	4	5

PLEASE CHECK THAT ALL QUESTIONS HAVE BEEN ANSWERED

THANK YOU

Appendix 4

Ethical approval from the School of Psychology Ethics Committee

January 29, 2010

App 17/07

Dear Rebecca,

This letter confirms that we received an ethical application for the project, *An investigation of parent and adolescent attitudes and beliefs*, 17 August, 2007. Requests for modifications were sent by the ethics committee October 5, 2007 and a response was received October 16, 2007. The application was approved October 16, 2007.

Do let me know if you need further information or details regarding this approval.

Yours sincerely,



Stuart WG Derbyshire.
Chair, School of Psychology Ethics Committee

Appendix 5

Information sheet for participants

Participant Information Sheet
An investigation of family attitudes and beliefs

Please ask if there is anything that is not clear or if you would like more information.

What is the purpose of the study?

The purpose of this study is to investigate the patterns of beliefs and attitudes between family members and also to look at whether individual patterns of beliefs and attitudes relate to

- How a person feels inside
- How they are getting along with other people
- How they are doing in important life tasks (e.g. at school or at work)

Do I have to take part?

No. It is up to you whether or not to take part. If you do, you will be given this information sheet to keep and will then be asked to complete some questionnaires. You are still free to withdraw at any time and without giving a reason.

What do I have to do?

If you decide to take part you will be given three short questionnaires:

- A questionnaire which will ask for information about you (e.g. age, ethnic group, family position)
- A questionnaire asking about beliefs and attitudes
- A questionnaire asking about how you have been feeling

At any point you are welcome to ask questions.

What are the possible disadvantages and risks of taking part?

There are no risks associated with this study. It is possible, however, that some of the questionnaire items might raise questions for you. If this occurs then please talk to the people carrying out this study. These Individuals are Clinical Psychologists in Training and they will be able to talk to you about your questions and if necessary suggest sources of support.

What are the possible benefits of taking part?

It is hoped that this study will help improve our understanding of the links between beliefs and attitudes and personal distress and, therefore, inform therapies that aim to help people in distress.

Will my taking part in the study be kept confidential?

Yes, all information is anonymous and confidential. There is no need to put your name or any personal identifying information on any of the questionnaires.

Who is organising and funding the research?

This study is part of a student research project that is being carried out in partnership with local services. The research is sponsored by the University of Birmingham and is being conducted as part of an academic qualification known as a Clinical Psychology Doctorate. The outcome from this research will be available to the public in the British Library and it may also be published in a journal for professionals.

Who has reviewed the study?

The University of Birmingham School Human Research Ethics Committee reviewed this research.

Thank you for taking the time to read this information

Appendix 6

Regression analyses

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	Total Irrationality, Rationality, Self Downing, Other Downing, Comfort, Approval ^a , Fairness		Enter
2		Other Downing	Backward (criterion: Probability of F-to-remove >= .100).
3		Fairness	Backward (criterion: Probability of F-to-remove >= .100).
4		Total Irrationality	Backward (criterion: Probability of F-to-remove >= .100).
5		Comfort	Backward (criterion: Probability of F-to-remove >= .100).
6		Rationality	Backward (criterion: Probability of F-to-remove >= .100).

a. Tolerance = .000 limits reached.

b. Dependent Variable: Range 0-180

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.452 ^a	.205	.171	15.625
2	.452 ^b	.205	.175	15.578
3	.452 ^c	.204	.180	15.534
4	.450 ^d	.203	.184	15.501
5	.445 ^e	.198	.184	15.498
6	.433 ^f	.187	.178	15.559

a. Predictors: (Constant), TotalIrrationality , Rationality , Self Downing, OtherDowning, Comfort, Approval, Fairness

b. Predictors: (Constant), TotalIrrationality , Rationality , Self Downing, Comfort, Approval, Fairness

c. Predictors: (Constant), TotalIrrationality , Rationality , Self Downing, Comfort, Approval

d. Predictors: (Constant), Rationality , Self Downing, Comfort, Approval

e. Predictors: (Constant), Rationality , Self Downing, Approval

f. Predictors: (Constant), Self Downing, Approval

ANOVA^g

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10241.106	7	1463.015	5.992	.000 ^a
	Residual	39795.853	163	244.146		
	Total	50036.959	170			
2	Regression	10236.134	6	1706.022	7.030	.000 ^b
	Residual	39800.825	164	242.688		
	Total	50036.959	170			
3	Regression	10223.363	5	2044.673	8.474	.000 ^c
	Residual	39813.596	165	241.295		
	Total	50036.959	170			
4	Regression	10151.424	4	2537.856	10.562	.000 ^d
	Residual	39885.535	166	240.274		
	Total	50036.959	170			
5	Regression	9925.678	3	3308.559	13.775	.000 ^e
	Residual	40111.281	167	240.187		
	Total	50036.959	170			
6	Regression	9366.841	2	4683.421	19.346	.000 ^f
	Residual	40670.118	168	242.084		
	Total	50036.959	170			

a. Predictors: (Constant), TotalIrrationality, Rationality, SelfDowning, OtherDowning, Comfort, Approval, Fairness

b. Predictors: (Constant), TotalIrrationality, Rationality, SelfDowning, Comfort, Approval, Fairness

c.

Predictors: (Constant), TotalIrrationality, Rationality, SelfDowning, Comfort, Approval

d. Predictors: (Constant), Rationality, SelfDowning, Comfort, Approval

e. Predictors: (Constant), Rationality, SelfDowning, Approval

f. Predictors: (Constant), SelfDowning, Approval

g. Dependent Variable: Range 0-180

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	34.556	14.213		2.431	.016
	Rationality	-.957	.666	-.112	-1.437	.153
	Self Downing	2.011	.795	.282	2.529	.012
	Approval	1.955	.975	.245	2.006	.047
	Comfort	.809	.761	.127	1.063	.289
	Fairness	.224	.846	.033	.265	.791
	OtherDowning	.118	.824	.015	.143	.887
	TotalIrrationality	-.248	.473	-.148	-.524	.601
2	(Constant)	34.714	14.127		2.457	.015
	Rationality	-.959	.664	-.113	-1.445	.150
	Self Downing	1.973	.746	.276	2.644	.009
	Approval	1.930	.956	.242	2.019	.045
	Comfort	.769	.706	.121	1.090	.277
	Fairness	.180	.784	.026	.229	.819
	TotalIrrationality	-.208	.381	-.124	-.545	.586
	3	(Constant)	34.871	14.070		2.478
Rationality		-.935	.653	-.110	-1.431	.154
Self Downing		1.893	.659	.265	2.874	.005
Approval		1.863	.908	.234	2.053	.042
Comfort		.709	.654	.111	1.085	.280
TotalIrrationality		-.146	.267	-.087	-.546	.586
4	(Constant)	32.560	13.390		2.432	.016
	Rationality	-.917	.651	-.108	-1.408	.161
	Self Downing	1.747	.600	.245	2.909	.004
	Approval	1.522	.657	.191	2.316	.022
	Comfort	.471	.486	.074	.969	.334
5	(Constant)	37.417	12.415		3.014	.003
	Rationality	-.987	.647	-.116	-1.525	.129
	Self Downing	1.759	.600	.246	2.931	.004
	Approval	1.744	.616	.219	2.830	.005
6	(Constant)	19.952	4.817		4.142	.000
	Self Downing	2.124	.553	.298	3.843	.000
	Approval	1.669	.617	.210	2.707	.007

a. Dependent Variable: Range 0-180

Excluded Variables^g

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics	
					Tolerance	
1	Achievement	. ^a000
2	Achievement	-.021 ^b	-.143	.887	-.011	.218
	OtherDowning	.015 ^b	.143	.887	.011	.455
3	Achievement	-.031 ^c	-.245	.807	-.019	.310
	OtherDowning	.005 ^c	.048	.962	.004	.527
	Fairness	.026 ^c	.229	.819	.018	.370
4	Achievement	-.047 ^d	-.574	.567	-.045	.722
	OtherDowning	-.019 ^d	-.234	.815	-.018	.707
	Fairness	-.018 ^d	-.228	.820	-.018	.753
	TotalIrrationality	-.087 ^d	-.546	.586	-.042	.190
5	Achievement	-.025 ^e	-.315	.753	-.024	.770
	OtherDowning	-.006 ^e	-.071	.943	-.006	.727
	Fairness	.002 ^e	.025	.980	.002	.805
	TotalIrrationality	.028 ^e	.238	.812	.018	.342
	Comfort	.074 ^e	.969	.334	.075	.826
6	Achievement	-.012 ^f	-.148	.883	-.011	.779
	OtherDowning	.008 ^f	.103	.918	.008	.737
	Fairness	-.004 ^f	-.048	.962	-.004	.806
	TotalIrrationality	.048 ^f	.405	.686	.031	.346
	Comfort	.086 ^f	1.129	.260	.087	.836
	Rationality	-.116 ^f	-1.525	.129	-.117	.831

a. Predictors in the Model: (Constant), TotalIrrationality, Rationality, Self Downing, OtherDowning, Comfort, Approval, Fairness

b. Predictors in the Model: (Constant), TotalIrrationality, Rationality, Self Downing, Comfort, Approval, Fairness

c. Predictors in the Model: (Constant), TotalIrrationality, Rationality, Self Downing, Comfort, Approval

d. Predictors in the Model: (Constant), Rationality, SelfDowning, Comfort, Approval

e. Predictors in the Model: (Constant), Rationality, SelfDowning, Approval

f. Predictors in the Model: (Constant), SelfDowning, Approval

g. Dependent Variable: Range 0-180

Regression

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	Total Irrationality, Rationality, Self Downing, Other Downing, Approval, Comfort ^a , Fairness		Enter
2		Other Downing	Backward (criterion: Probability of F-to-remove >= .100).
3		Fairness	Backward (criterion: Probability of F-to-remove >= .100).
4		Rationality	Backward (criterion: Probability of F-to-remove >= .100).
5		Total Irrationality	Backward (criterion: Probability of F-to-remove >= .100).
6		Approval	Backward (criterion: Probability of F-to-remove >= .100).

a. Tolerance = .000 limits reached.

b. Dependent Variable: Range 0-180

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.429 ^a	.184	.119	16.165
2	.429 ^b	.184	.129	16.075
3	.426 ^c	.181	.136	16.012
4	.423 ^d	.179	.144	15.942
5	.403 ^e	.162	.135	16.020
6	.384 ^f	.148	.130	16.071

- a. Predictors: (Constant), TotalIrrationality, Rationality, Self Downning, OtherDownning, Approval, Comfort, Fairness
- b. Predictors: (Constant), TotalIrrationality, Rationality, Self Downning, Approval, Comfort, Fairness
- c. Predictors: (Constant), TotalIrrationality, Rationality, Self Downning, Approval, Comfort
- d. Predictors: (Constant), TotalIrrationality, Self Downning, Approval, Comfort
- e. Predictors: (Constant), Self Downning, Approval, Comfort
- f. Predictors: (Constant), Self Downning, Comfort

ANOVA^g

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5233.698	7	747.671	2.861	.010 ^a
	Residual	23257.024	89	261.315		
	Total	28490.722	96			
2	Regression	5233.593	6	872.265	3.375	.005 ^b
	Residual	23257.129	90	258.413		
	Total	28490.722	96			
3	Regression	5161.020	5	1032.204	4.026	.002 ^c
	Residual	23329.701	91	256.370		
	Total	28490.722	96			
4	Regression	5108.701	4	1277.175	5.025	.001 ^d
	Residual	23382.021	92	254.152		
	Total	28490.722	96			
5	Regression	4624.570	3	1541.523	6.007	.001 ^e
	Residual	23866.152	93	256.625		
	Total	28490.722	96			
6	Regression	4211.863	2	2105.931	8.153	.001 ^f
	Residual	24278.859	94	258.286		
	Total	28490.722	96			

a. Predictors: (Constant), TotalIrrationality, Rationality, SelfDowning, OtherDowning, Approval, Comfort, Fairness

b. Predictors: (Constant), TotalIrrationality, Rationality, SelfDowning, Approval, Comfort, Fairness

c.

Predictors: (Constant), TotalIrrationality, Rationality, SelfDowning, Approval, Comfort

d. Predictors: (Constant), TotalIrrationality, SelfDowning, Approval, Comfort

e. Predictors: (Constant), SelfDowning, Approval, Comfort

f. Predictors: (Constant), SelfDowning, Comfort

g. Dependent Variable: Range 0-180

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	27.177	18.641		1.458	.148
	Rationality	-.506	.939	-.057	-.539	.591
	Self Downing	2.171	1.115	.280	1.946	.055
	Approval	2.650	1.408	.322	1.881	.063
	Comfort	2.256	1.083	.374	2.082	.040
	Fairness	.560	1.251	.085	.448	.656
	OtherDowning	.025	1.232	.003	.020	.984
	TotalIrrationality	-.704	.721	-.434	-.976	.332
2	(Constant)	27.210	18.465		1.474	.144
	Rationality	-.506	.934	-.057	-.542	.589
	Self Downing	2.160	.978	.279	2.208	.030
	Approval	2.642	1.353	.321	1.953	.054
	Comfort	2.247	.971	.373	2.313	.023
	Fairness	.546	1.030	.083	.530	.597
	TotalIrrationality	-.693	.510	-.428	-1.360	.177
	3	(Constant)	27.336	18.390		1.486
Rationality		-.413	.913	-.046	-.452	.653
Self Downing		1.986	.918	.256	2.163	.033
Approval		2.349	1.230	.285	1.910	.059
Comfort		2.081	.916	.345	2.272	.025
TotalIrrationality		-.502	.358	-.309	-1.402	.164
4		(Constant)	20.084	8.934		2.248
	Self Downing	2.107	.875	.272	2.409	.018
	Approval	2.259	1.208	.274	1.870	.065
	Comfort	2.078	.912	.345	2.279	.025
	TotalIrrationality	-.491	.355	-.303	-1.380	.171
5	(Constant)	14.598	8.040		1.816	.073
	Self Downing	1.547	.779	.200	1.987	.050
	Approval	1.149	.906	.139	1.268	.208
	Comfort	1.198	.655	.199	1.829	.071
6	(Constant)	17.905	7.630		2.347	.021
	Self Downing	1.752	.764	.226	2.293	.024
	Comfort	1.552	.594	.258	2.611	.011

a. Dependent Variable: Range 0-180

Excluded Variables^g

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics	
					Tolerance	
1	Achievement	. ^a	.	.	.000	
2	Achievement	-.004 ^b	-.020	.984	-.002	.193
	OtherDowning	.003 ^b	.020	.984	.002	.336
3	Achievement	-.050 ^c	-.259	.796	-.027	.244
	OtherDowning	-.038 ^c	-.280	.780	-.030	.490
	Fairness	.083 ^c	.530	.597	.056	.368
4	Achievement	-.041 ^d	-.216	.829	-.023	.246
	OtherDowning	-.032 ^d	-.235	.815	-.025	.494
	Fairness	.067 ^d	.437	.663	.046	.381
	Rationality	-.046 ^d	-.452	.653	-.047	.860
5	Achievement	-.141 ^e	-1.232	.221	-.127	.682
	OtherDowning	-.105 ^e	-.908	.366	-.094	.673
	Fairness	-.071 ^e	-.646	.520	-.067	.746
	Rationality	-.036 ^e	-.354	.724	-.037	.864
	TotalIrrationality	-.303 ^e	-1.380	.171	-.142	.186
6	Achievement	-.078 ^f	-.720	.474	-.074	.771
	OtherDowning	-.032 ^f	-.305	.761	-.032	.810
	Fairness	-.038 ^f	-.350	.727	-.036	.785
	Rationality	-.015 ^f	-.152	.880	-.016	.886
	TotalIrrationality	-.030 ^f	-.179	.858	-.019	.333
	Approval	.139 ^f	1.268	.208	.130	.745

a. Predictors in the Model: (Constant), TotalIrrationality, Rationality, Self Downing, OtherDowning, Approval, Comfort, Fairness

b. Predictors in the Model: (Constant), TotalIrrationality, Rationality, Self Downing, Approval, Comfort, Fairness

c. Predictors in the Model: (Constant), TotalIrrationality, Rationality, Self Downing, Approval, Comfort

d. Predictors in the Model: (Constant), TotalIrrationality, Self Downing, Approval, Comfort

e. Predictors in the Model: (Constant), Self Downing, Approval, Comfort

f. Predictors in the Model: (Constant), Self Downing, Comfort

g. Dependent Variable: Range 0-180

Regression

Variables Entered/Removed^b

Model	Variables Entered	Variables Removed	Method
1	Total Irrationality, Rationality, Comfort, Fairness, Achievement, Other Downing ^a , Approval		Enter
2		Approval	Backward (criterion: Probability of F-to-remove >= .100).
3		Other Downing	Backward (criterion: Probability of F-to-remove >= .100).
4		Achievement	Backward (criterion: Probability of F-to-remove >= .100).
5		Fairness	Backward (criterion: Probability of F-to-remove >= .100).

a. Tolerance = .000 limits reached.

b. Dependent Variable: Range 0-180

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.569 ^a	.324	.252	14.856
2	.567 ^b	.322	.261	14.769
3	.562 ^c	.316	.266	14.718
4	.557 ^d	.311	.271	14.672
5	.539 ^e	.290	.260	14.783

a. Predictors: (Constant), TotalIrrationality , Rationality , Comfort, Fairness, Achievement, OtherDowning, Approval

b. Predictors: (Constant), TotalIrrationality , Rationality , Comfort, Fairness, Achievement, OtherDowning

c. Predictors: (Constant), TotalIrrationality , Rationality , Comfort, Fairness, Achievement

d. Predictors: (Constant), TotalIrrationality , Rationality , Comfort, Fairness

e. Predictors: (Constant), TotalIrrationality , Rationality , Comfort

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6979.151	7	997.022	4.517	.000 ^a
	Residual	14566.971	66	220.712		
	Total	21546.122	73			
2	Regression	6932.401	6	1155.400	5.297	.000 ^b
	Residual	14613.720	67	218.115		
	Total	21546.122	73			
3	Regression	6816.376	5	1363.275	6.294	.000 ^c
	Residual	14729.746	68	216.614		
	Total	21546.122	73			
4	Regression	6693.093	4	1673.273	7.773	.000 ^d
	Residual	14853.028	69	215.261		
	Total	21546.122	73			
5	Regression	6248.335	3	2082.778	9.530	.000 ^e
	Residual	15297.787	70	218.540		
	Total	21546.122	73			

a. Predictors: (Constant), TotalIrrationality , Rationality , Comfort, Fairness, Achievement, OtherDowning, Approval

b. Predictors: (Constant), TotalIrrationality , Rationality , Comfort, Fairness, Achievement, OtherDowning

c. Predictors: (Constant), TotalIrrationality , Rationality , Comfort, Fairness, Achievement

d. Predictors: (Constant), TotalIrrationality , Rationality , Comfort, Fairness

e. Predictors: (Constant), TotalIrrationality , Rationality , Comfort

f. Dependent Variable: Range 0-180

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	49.674	23.335		2.129	.037
	Rationality	-1.758	.962	-.218	-1.827	.072
	Achievement	-1.375	1.295	-.231	-1.062	.292
	Approval	-.896	1.946	-.116	-.460	.647
	Comfort	-2.709	1.249	-.386	-2.169	.034
	Fairness	-1.779	1.077	-.240	-1.652	.103
	OtherDowning	-1.558	1.818	-.176	-.857	.395
	TotalIrrationality	1.950	1.020	1.068	1.912	.060
2	(Constant)	52.943	22.096		2.396	.019
	Rationality	-1.833	.942	-.227	-1.946	.056
	Achievement	-.981	.966	-.165	-1.016	.313
	Comfort	-2.341	.954	-.334	-2.454	.017
	Fairness	-1.628	1.019	-.219	-1.597	.115
	OtherDowning	-1.062	1.456	-.120	-.729	.468
	TotalIrrationality	1.548	.524	.848	2.954	.004
	3	(Constant)	52.175	21.995		2.372
Rationality		-1.797	.938	-.223	-1.916	.060
Achievement		-.629	.833	-.105	-.754	.453
Comfort		-2.078	.880	-.296	-2.362	.021
Fairness		-1.591	1.015	-.214	-1.568	.121
TotalIrrationality		1.287	.382	.705	3.370	.001
4		(Constant)	52.922	21.904		2.416
	Rationality	-1.881	.928	-.233	-2.027	.047
	Comfort	-1.953	.861	-.278	-2.267	.027
	Fairness	-1.415	.984	-.191	-1.437	.155
	TotalIrrationality	1.108	.298	.607	3.715	.000
5	(Constant)	54.149	22.054		2.455	.017
	Rationality	-2.319	.883	-.288	-2.625	.011
	Comfort	-1.727	.853	-.246	-2.024	.047
	TotalIrrationality	.835	.232	.457	3.605	.001

a. Dependent Variable: Range 0-180

Excluded Variables

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics
					Tolerance
1	Self Downing	. ^a	.	.	.000
2	Self Downing	.136 ^b	.460	.647	.057
	Approval	-.116 ^b	-.460	.647	-.057
3	Self Downing	.195 ^c	.771	.444	.094
	Approval	.012 ^c	.059	.953	.007
	OtherDowning	-.120 ^c	-.729	.468	-.089
4	Self Downing	.210 ^d	1.081	.284	.130
	Approval	.069 ^d	.378	.707	.046
	OtherDowning	-.036 ^d	-.255	.799	-.031
	Achievement	-.105 ^d	-.754	.453	-.091
5	Self Downing	.254 ^e	1.779	.080	.209
	Approval	.096 ^e	.529	.598	.064
	OtherDowning	-.051 ^e	-.359	.721	-.043
	Achievement	-.055 ^e	-.399	.691	-.048
	Fairness	-.191 ^e	-1.437	.155	-.171

a. Predictors in the Model: (Constant), TotalIrrationality, Rationality, Comfort, Fairness, Achievement, OtherDowning, Approval

b. Predictors in the Model: (Constant), TotalIrrationality, Rationality, Comfort, Fairness, Achievement, OtherDowning

c. Predictors in the Model: (Constant), TotalIrrationality, Rationality, Comfort, Fairness, Achievement

d. Predictors in the Model: (Constant), TotalIrrationality, Rationality, Comfort, Fairness

e. Predictors in the Model: (Constant), TotalIrrationality, Rationality, Comfort

f. Dependent Variable: Range 0-180

Appendix 7

Instructions for authors from nominated journals