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The Relationship Between Parent and Child Mental Health:
Taking a Family Systems Perspective in Support Services

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CFRE respectfully acknowledges the Kulin Nation as Traditional Owners of the land where we deliver our services. We acknowledge Aboriginal and Torres Strait Islanders as the first people of Australia. Sovereignty was never ceded, and they remain strong in their connection to land, culture and in resisting colonisation.

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Abstract

The purpose of this research was to explore the relationship between parent and child mental health with the role of family adjustment across all ages of child development except for infancy. The 399 adult participants commencing support at drummond street services (Victoria, Australia) completed the General Health Questionnaire to assess their levels of mental health distress, a Strengths and Difficulties Questionnaire about their child's mental health distress, and the Parenting and Family Adjustment Scale. Parental mental health predicted child mental health at all ages. The direction of this relationship was unable to be determined by the cross-sectional design of the study. Analyses showed this relationship was mediated by parental adjustment. Overall, children's conduct problems and hyperactivity were most consistently related to either parental mental health or family adjustment. In age 2 – 4 years there was no evidence of mediation and only parenting style factors were associated with mental health. At 5 – 17 years, both the parenting style factors and relationship dynamics predicted child mental health. For children 5 – 10 years, only the family relationship mediated the relationship between parent and child mental health, whilst for 11 – 17 years, several relationship dynamics played a mediating role. A greater number of associations overall (both direct and indirect effects) occurred in the 11 – 17 age group. The results provide support for situating interventions within a family system, particularly to not disregard these relationships occurring with 11 – 17 year-olds and their families and additionally targeting families early. Organisations that value evidence building are paving the way through collecting and analysing client data to inform an evidence base for practice and service delivery.

Introduction

The Family as a Setting for Intervention

Drummond street (ds) is a service agency based in Victoria, Australia, across multiple site locations. As an organisation, ds recognises the importance of situating individual issues within contextual backgrounds. A major part of which is the role of family relationships in providing a strong and early influence on the mental health and wellbeing of the developing child as well as the wellbeing of adults.

Programs at ds include family based services such as the Family Mental Health Support Service (FMHSS) program and the Family and Relationship Services program (FaRS), which are funded by the Department of Social Services. These programs focus on building family capability to improve outcomes for children and their family members.

Despite increasing knowledge and awareness of the role of the family in individual mental health and wellbeing, the family as a setting for public health intervention can still be overlooked by social research, government policies and services, across sectors and prevention efforts.

Family Systems Theory

The concept of family influence on individual mental health originates primarily from the family systems theory (Bowen, 1966) and has influenced the practice of family and relationship support services. In this theory, the family contributes to both a relationship system and an emotional

system. Through these systems, family members influence and are influenced by one another, so that the higher the degree of distress in one generation, the greater the vulnerability to dysfunction by an individual in another generation (Titelman, 1998, p. 232). The tendency for one generation to transmit affective distress to the next describes interactions of the family emotional system as a result of the relationship system (Titelman, 1998). As such, cross generational transmission of affective distress may be dependent on how family members relate to one another. The theory speaks to the importance of a whole-of-family approach in support services. The purpose of this study is to examine the relationship between parent and child mental health and the influence of the family relationship system.

Intergenerational Transmission

Prevalence rates of mental health disorders suggest environmental and genetic predispositions to mental health risk in families where a mental health disorder is present (e.g. O'Hara, 1992; Silberg, 2002; Zimmerman, McGlinchey, Young, & Chelminski, 2006). There is limited research on the relationship between mental health distress between parents and children. Research has often focused on the prevalence of diagnosed child mental health disorders and has shown a relationship between these disorders and higher rates of parental mental health distress (Bennett, Brewer, & Rankin, 2012; Office for National Statistics, 2000; Silberg, 2002, p. 14). For example, in a British sample of 10,252 parents, it was found that parents who scored above the mental health distress cut-off on the General Health Questionnaire (GHQ-12), were three times more likely to have a child with a mental health disorder than parents without signs of mental health distress (Office for National Statistics, 2000).

Parent and child distress are generally measured using varied scales or questionnaires which focus on mental health competency, externalising and internalising behaviour and subjective wellbeing. There is little consistency over how child mental health and wellbeing is measured. Additionally, most studies only involve children aged under 12, with a stronger focus on the preschool years. Longitudinal studies have shown how both maternal and paternal mental health at the infancy period is related to a form of child distress at preschool age (Essex et al., 2006; Ramchandani, Stein, Evans, & Connor, 2005). However, contrary to these findings, Goldberg et al. (2014) demonstrated that only concurrent maternal psychological distress (rather than perinatal) was related to children's mental health competency scores at preschool (average age: 4.7 years). Additionally, Australian longitudinal data of children 0 – 5 years old until aged 4 – 9 (Bayer et al., 2011) found that, amongst a series of predictors, parents' harsh use of discipline was a consistent predictor of externalising behaviour and maternal emotional distress was a consistent predictor of children's internalising symptoms. Another longitudinal study (Powdthavee & Vignoles, 2007) investigated mental health distress of parents and subjective wellbeing of their 11-year old children. They found that parental distress was an important determinant for the child's life satisfaction in the same year and just paternal distress predicted the child's life satisfaction in the following year.

Recent research has also demonstrated that the relationship between parent and child mental health distress and wellbeing may persist into adulthood. This study found that negative internalised cognitions, which are strongly related to mental health distress and psychopathology, were shown to be associated with their parents' similar negative cognitions formed in childhood in mother-daughter dyads (Gibson & Francis, 2019). There was limited evidence that parenting styles in childhood mediated this relationship and further research was suggested to be undertaken on more complex parent and family relationship dynamics to help explain the relationships found.

Family Adjustment

A variety of parent behaviours and family relationship dynamics have been associated with

negative or positive outcomes for children's mental health and wellbeing. For example, conflict in co-parenting, the closeness of the parent-child relationship, harsh parenting and parental inconsistency all have been shown to be related to negative mental health and wellbeing outcomes for children (Størksen, Røysamb, Moum, & Tambs, 2005; Ackard, Neumark-Sztainer, Story, & Perry, 2006; Dwairy, 2010; Newland, 2015; Stallman & Ohan, 2016; Bayer et al., 2011). For example, Stallman and Ohan (2016) examined child outcomes for children aged 4-17 with parents who were divorced. The results showed that parental distress and co-parent conflict predicted emotional and behavioural problems. It has been proposed that family adjustment factors (such as parenting practices or parent-child interactions) explain the relationship between child wellbeing and parental experiences, including: parental depression, stress, interparental conflict, or other similar factors (Newland, 2015).

Current Study

This study will examine important elements of family systems theory for parent and child mental health distress transmission and the role of family adjustment. Studies have established a relationship between child and adult well-being and psychopathology however, little research has been undertaken on the nature of this relationship. When child mental health rather than diagnosed disorders has been researched, studies have commonly used scales that are not always comparable or widely used. Although the importance of different developmental stages has been well established (see Bjorklund, 2013), the research between child and adult mental health has not been examined for differences amongst age groups and relatively ignored for children over 11 years of age. Additionally, the relationship between parent practices or family dynamics and child mental health supports the role of the impact of the family on child mental health. It is commonly hypothesised that family adjustment plays a role in the transmission of mental health, yet to our knowledge the mediation of family adjustment across child age groups has not been explored.

The current study aims to determine the relationships between concurrent parent and child mental health distress across all ages of child development (aside from infancy) using a widely used measure of child mental health, within the relevant context of accessing a support service. Based on previous findings it is hypothesised that (1) there will be significant positive relationships between parent and child mental health distress. Additionally, (2) family adjustment will be significantly and positively associated to parent and child mental health distress. Finally, it is hypothesised that (3) family adjustment will mediate the relationship between parent and child mental health distress. Differences between age groups at each hypothesis will be explored.

Method

Client Participation and Consent

In 2016 ds services commenced collecting pre- and post- evaluation measures to assess the impact of support services for each program. The main programs involved in this study included FMHSS (67%) and FaRS (26%). Prospective participants were invited to take part in the study during the standard ds intake assessment process (conducted by telephone or face to face). The nature and the purpose of the research was explained verbally during the intake assessment. The evaluation was explained in more detail by the practitioner when the first appointment was made. Informed consent to participate was then confirmed in writing at the first session with the ds Client Consent Form. The questionnaires were collected only after signed consent was obtained for the use of de-identified data for research and evaluation purposes. Questionnaires were completed individually without the aid of the practitioner. To reduce client bias, the questionnaires remained confidential even from the practitioner. All questionnaires outlined purpose, voluntary participation and

confidentiality at the introduction. All participants in the following study have consented to the use of their results for research.

Measures

The FMHSS and FaRS programs place important emphasis on the impact of families on child development and their future wellbeing in addition to the impact of families on the wellbeing of adults. To measure outcomes for these programs, questionnaires were developed to include measures on adult and child mental health as well as family adjustment. To ensure appropriateness, these questionnaires vary across each program type, age of client, or age of the client's child. As such, the sample sizes across the measures used in the current study will differ. The current study measured participants' results from three measures: the 12-item General Health Questionnaire (GHQ), the Strengths and Difficulties Questionnaire (SDQ) and the Parenting and Family Adjustment Scale (PAFAS).

The GHQ is a self-report measure of psychological morbidity, intended to detect psychiatric disorders in community settings and non-psychiatric settings. It is widely used in clinical practice, epidemiological research and for research in psychology. Each item is rated on a four-point scale (less than usual, no more than usual, rather more than usual, or much more than usual). The Likert scoring method (0-1-2-3) was used for this study. A higher score indicates a greater degree of psychological distress. The test author provides suggested default thresholds being a score of 11 or less indicating absence of a mental disorder and a score of 12 or more indicating the presence of a mental disorder.

The SDQ is one of the most widely and internationally used measures of child and young person's mental health (Goodman & Goodman, 2009; Klein, Otto, Fuchs, Zenger, & Von Klitzing, 2013) and consists of 25 items with 5 scales, of 5 items each. This study used the parent version of the SDQ. The scales include emotional symptoms, conduct problems, peer relationship problems, hyperactivity/inattention and pro-social behaviour and provides a total-difficulties score which is generated by summing 4 of the scales. This questionnaire has been found to be an acceptable measure of child mental health due to the strong association of total difficulty scores with psychopathology (Goodman & Goodman, 2009). This study utilised the parent report version of the measure.

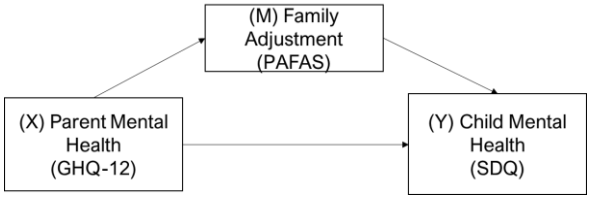
The PAFAS was designed to assess parenting practices and parental adjustment in both public health and parenting interventions and reports good internal consistency, as well as construct and predictive validity (Sanders, Morawska, Haslam, Filus, & Fletcher, 2014). This measure uses a four-point Likert scale from: 0 = not true of my child at all, 1 = true of me a little, or some of the time, 2 = true of me quite a lot, or a good part of the time, 3 = true of me very much, or most of the time. For each subscale the items are summed to provide scores, with higher scores indicating higher levels of parenting dysfunction. Six subscales from the PAFAS were included in the evaluation: parental inconsistency, coercive parenting, positive encouragement, parent-child relationship, family relationships, and parental teamwork. Three of the PAFAS subscales related to parenting styles: parental inconsistency, coercive parenting and positive encouragement; whilst the remainder related to dynamics in the family relationship, including: the parent-child relationship, family relationships, and parental teamwork.

Analyses

Descriptive statistics and Pearson's correlations between variables will be explored, see Figure 1. A mediated model will be examined using a bootstrapping method (Hayes, 2009; Hayes, 2013) to determine whether parental mental health influences child mental health scores indirectly through family adjustment. All analyses are conducted in SPSS v25 (IBM corporation, Armonk, New York) and mediation tested with the use of PROCESS V3.4 (Hayes, 2019). In this method, a total effect of the independent variable (variable X in Figure 1) on the dependent variable (Y) is

composed of a direct effect of X on Y (controlling for M) and the indirect effect of X on Y through M (the mediator).

Figure 1. Variables and relationships analysed



Additionally, these variables were measured across different child age groups (2-4, 5-10, and 11-17 years), child mental health subscales (Emotional Problems, Prosocial, Behaviour, Conduct Problems, Hyperactivity and Peer Relationship Issues) as well as family adjustment subscales (Inconsistency, Coercive Parenting, Parental Encouragement, Parent-Child Relationship, Family Relationship, and Parental Teamwork).

Results

Participants

A total of 399 parents had completed both the GHQ and SDQ at their first session. Of the total participants, 315 had basic demographic information available. Of these, 74% of parents were female and 26% were male. Almost a quarter of participants (22%) were born overseas and 1% identified as Aboriginal. The majority (96%) of participants were heterosexual. Additionally, 61% had a tertiary education and only 37% stated employment was their main source of income. The average age of parents was 40 years. As determining demographic differences was not the purposes of analysis, all participants (with or without demographic data available) were included in the results.

Testing Assumptions

Missing data was previously screened and removed as part of the data cleaning process, so that incomplete subscales were not considered in the data set used for this research. Skewness and kurtosis ranged from –.07 to 1.06 and –.81 to 1.57, respectively. However, the analyses were considered to be robust against violations of normality (Norman, 2010).

Relationship between Parent (GHQ) and Child (SDQ) Mental Health Distress

Pearson's correlations were conducted for the relationship between adult and child mental health. The results are displayed in Table 1.

Table 1. GHQ and SDQ Pearson's Correlations by Age (years)

	All Ages	2 - 4	5 - 10	11 - 17
r	.247***	.212*	.229**	.277**
n	399	86	169	133

*significant at $\alpha < .05$, **significant at $\alpha < .01$, ***significant at $\alpha < .001$.

There was a positive and significant correlation between parent and child mental health distress scores ($r = .247$, $p < .001$, $n = 399$). Across each child's age group, parents' GHQ scores were positively and significantly correlated to SDQ scores. Correlations were slightly stronger for older age groups.

Parents with mental health distress were 3.5 times more likely to have a child with mental health distress than parents who had no signs of mental health distress (see Table 2). Additionally, the odds ratio for the values displayed in Table 2 were significant (OR = 2.14, $p = .002$).

Table 2. Number of Children and Parents with Mental Health Distress Cut-Offs at Baseline

	Child with MH distress	Child has no MH distress
Parent with MH distress	234	71
Parent has no MH distress	63	41

The correlations between parent and child mental health by SDQ subscale and age are presented in Table 3. Only significant correlations are

displayed for readability. At each of the age groups, parents' mental health distress significantly predicted the child's hyperactivity scores. Parents of children aged 11-17, had the strongest correlations with their mental health and the SDQ subscales, with all but emotional problems showing correlations to parental mental health scores. Emotional problems were only related to parental mental health for the 5 - 10 year-olds (r = .188, $p < .001$). Correlations for 5 – 10 year-olds were both at a small effect size (Cohen, 1992). For 2-4 year-olds, issues with conduct behaviour (r = .248, $p < .05$) and hyperactivity (r = .249, $p < .05$) were related to their parents' mental health scores. The strongest relationship occurred for 11-17 year-olds prosocial behaviour being negatively correlated to their parents' mental health (r = -.329, $p < .001$).

Table 3. GHQ and SDQ Pearson's Correlations by Subscale and Age (years)

		Emotional Problems	Prosocial Behaviour	Conduct Problems	Hyperactivity	Peer Relationship Issues
All Ages	r	.129**	-.192***	.166**	.216***	.148**
	n	402	403	401	400	401
2 - 4	r			.248*	.249*	
	n			86	86	
5 - 10	r	.188*			.155*	
	n	169			169	
11 - 17	r		-.329***	.220*	.286**	.187*
	n		133	133	133	133

*significant at $\alpha < .05$, **significant at $\alpha < .01$, ***significant at $\alpha < .001$.

Family Adjustment and Mental Health

Pearson's correlations were conducted between parent and family adjustment subscale scores (PAFAS) and parent and child mental health (SDQ and GHQ).

Child Mental Health

A number of significant correlations were found between family adjustment and child mental health, these are displayed in Table 4. The strongest correlation was the positive association between coercive parenting and child's conduct problems. This was followed by the positive associations between child's overall mental health score and both coercive parenting and the parent-child relationship.

There were no significant correlations between parental encouragement and child mental health. The majority of the significant relationships occurred with parent-child relationship scores, followed by the family relationship scores.

Table 4. PAFAS and SDQ Pearson's Correlations by Subscales

		Total SDQ	Emotional Problems	Prosocial Behaviour	Conduct Problems	Hyperactivity	Peer Relationship Issues
Inconsistency	r	.262***			.196**	.163**	.208**
	n	269			271	270	271
Coercive Parenting	r	.320***		-.231***	.387***	.277***	
	n	265		269	267	266	
Parental Encouragement	r						
	n						
Parent-Child Relationship	r	.303***	.160**	-.254***	.263***	.201**	.169**
	n	291	293	295	293	292	293
Family Relationship	r	.256***		-.229***	.234***	.209***	.172***
	n	431		434	432	431	433
Parental Teamwork	r	.256***			.113*	.149**	
	n	431			317	317	

* Significant at α < .05, **significant at α < .01, ***significant at α < .001. Only significant correlations are displayed.

Family adjustment subscales and their relationships to SDQ subscales have been broken down by the three age categories in Table 5.

2 – 4 Years

There were no significant associations between children's mental health at ages 2 – 4 years with relationship based factors, this included: the parent-child relationship, the family relationship and parental teamwork scores. The majority of significant relationships with child mental health occurred with inconsistent parenting and coercive parenting (parenting styles); whilst the majority of significant relationships between family adjustment occurred negatively with prosocial behaviour and positively with conduct problems and hyperactivity. The strongest association was the significant relationship between coercive parenting and the child's conduct problems at this age ($r = .487$, $p < .001$, $n = 78$).

5 – 10 Years

There were no significant relationships between child mental health and parental encouragement or parental teamwork at this age. The majority of relationships occurred between child mental health and a mix of parental practices and relationship dynamics: the parent-child relationship, the family relationship and coercive parenting. Similarly to the 2-4 age group, the strongest relationships occurred negatively with prosocial behaviour and positively with conduct problems and hyperactivity. In this age group however, peer relationship issues were shown to be significantly related to family adjustment.

11 – 17 Years

The mental health scores of the 11-17 year age group showed the highest number of significant correlations to family adjustment. The strongest relationships to adolescent mental health occurred for inconsistent parenting, coercive parenting, the parent-child relationship and the family relationship. There was no relationship between adolescent mental health and parental encouragement. Most of the correlations are of a medium effect size (Cohen, 1992).

Table 5. PAFAS and SDQ Pearson's Correlations by Subscales and Age (years)

Age	PAFAS Subscale		Total SDQ	Emotional Problems	Prosocial Behaviour	Conduct Problems	Hyperactivity	Peer Relationship Issues
2 – 4 Years	Inconsistency	r	.344**			.349**	.272*	
		n	79			79	79	
	Coercive Parenting	r	.392**		-.290**	.487***	.342**	
		n	78		79	78	78	
	Parental Encouragement	r			-.234*			
		n			79			
5 – 10 Years	Inconsistency	r						.208**
		n						152
	Coercive Parenting	r	.271**		-.215**	.326**	.261**	
		n	150		151	151	150	
	Parent-Child Relationship	r	.349**		-.238**	.335***	.208**	.237**
		n	153		154	154	153	154
	Family Relationship	r	.334**		-.181*	.261***	.276***	.198**
		n	176		177	177	176	177
11 – 17 Years	Inconsistency	r	.435*	.380*	-.420*			
		n	28	28	28			
	Coercive Parenting	r		.419*		.442*		
		n		27		27		
	Parent-Child Relationship	r	.378**	.285*			.338*	
		n	48	48			48	
	Family Relationship	r	.272**		-.338***	.309***	.274**	.177*
		n	148		148	148	148	148
	Parental Teamwork	r	.266**			.268**	.283**	
		n	105			105	105	

*significant at α < .05, **significant at α < .01, ***significant at α < .001. Only significant correlations are displayed.

Parental Mental Health

The Pearson's correlation coefficients for family adjustment and parental mental health are displayed in Table 6. Parental encouragement was not significantly related to adult mental health. The strongest relationship to adult mental health occurred with parental teamwork ($r = .408$, $p < .001$) as well as the family relationship ($r = .343$, $p < .001$).

Table 6. PAFAS and GHQ Pearson's Correlations

		Inconsistency	Coercive Parenting	Parental Encouragement	Parent-Child Relationship	Family Relationship	Parental Teamwork
GHQ	r	.299***	.205**	-0.054	.148*	.343***	.408***
	n	244	240	247	259	386	295

* Significant at α < .05, **significant at α < .01, ***significant at α < .001.

Mediation of Family Adjustment Between Parent and Child Mental Health

All mediation was tested using 10,000 bootstrapped samples. Due to the absence of relationships with parental encouragement, this variable was not considered in mediation testing. Results are displayed in Table 7. There was evidence that inconsistency, coercive parenting, parent-child relationship, family relationship and parental teamwork all mediated the relationship between adult and child mental health.

Table 7. Mediation of PAFAS subscales for the relationship between parent and child mental health, by SDQ subscales.

		Mediator Variables				
Outcome Variable		**Inconsistency**	**Coercive Parenting**	**Parent-Child Relationship**	**Family Relationship**	**Parental Teamwork**
SDQ Total	DE	.22***	.21***	.23***	.17**	.14*
	IE	**.05 CI [.016, .095]**	**.05 CI [.014, .100]**	**.04 CI [.009, .070]**	**.06 CI [.025, .103]**	**.04 CI [.008, .083]**
	TE	.27***, r^2 = .10	.26***, r^2 = .09	.26***, r^2 = .09	.23**, r^2 = .06	.17***, r^2 = .04
Emotional Problems	DE	.05*	.05*	.04*	.05*	.02
	IE	.01 CI [-.01, .02]	.01 CI [-.004, .02]	**.01 CI [.001, .02]**	.004 CI [-.01, .02]	.01 CI [-.01, .03]
	TE	.06*, r^2 = .03	.06*, r^2 = .03	.05*, r^2 = .14	.05**, r^2 = .02	.03
Prosocial Behaviour	DE	-.04*	-.04	-.04*	-.04*	-.04*
	IE	-.01 CI[-.02,.002]	**-.01 CI [-.03, -.003]**	**-.01 CI [-.023,-.002**	**-.02 CI [-.04,-.01]**	-.01 CI [-.025, .011]
	TE	-.05**, r^2 = .17	-.05*, r^2 = .16	-.05**, r^2 = .03	-.06***, r^2 = .19	-.05**, r^2 = .16
Conduct Problems	DE	.05*	.04	.05**	.04*	.03
	IE	**.02 CI [.003, .03]**	**.02 CI [.007, .047]**	**.01 CI [.003, .023]**	**.02 CI [.007, .037]**	.01 CI [-.01, .03]
	TE	.06**, r^2 = .03	.06**, r^2 = .03	.06**, r^2 = .04	.06***, r^2 = .03	.04*, r^2 = .02
Hyper-activity	DE	.08***	.08***	.09**	.07**	.05*
	IE	.01 CI [-.001, .03]	**.02 CI [.005, .035]**	**.01 CI [.002, .02]**	**.02 CI [.002, .04]**	**.02 CI[-.001,-.037]**
	TE	.10***, r^2 = .27	**.**10***, r^2 = .07	.10**, r^2 = .07	.08***, r^2 = .04	.06**, r^2 = .03
Peer relationship issues	DE	.04**	.05*	.04**	.03*	.04
	IE	**.01 CI [.002, .03]**	.003 CI [-.05, .013]	**.01 CI [.001, .02]**	**.02 CI [.003, .03]**	-.001 CI [-.02, .02]
	TE	.05**, r^2 = .03	.05**, r^2 = .03	.05**, r^2 = .03	.05**, r^2 = .03	.04*, r^2 = .01

*10,000 bootstrapped samples, X variable = GHQ-12. DE = Direct Effect, IE = Indirect Effect, TE = Total Effect.

*significant at α < .05, **significant at α < .01, ***significant at α < .001. Confidence Intervals of the unadjusted indirect effect are at 95%, bold indirect effect represents significance. For readability, significant mediation models have been shaded grey.

The majority of significant mediations from family adjustment occurred with adult mental health and the child's conduct problems or hyperactivity. There was evidence to suggest that the parent-child relationship mediated the relationship between adult mental health and child mental health on all SDQ subscales and the family relationship mediated parent and child mental health on all SDQ subscales but emotional problems.

There was no evidence that parental mental health influenced their child's conduct problems independent of its effect with coercive parenting (DE = .04, p = .07). Similarly, there was no evidence that parental mental health influenced their child's prosocial behaviour independent of its effect with coercive parenting (DE = -.04, p = .07). The strongest model involved the mediation of parent mental health and child prosocial behaviour by the family relationship, this model accounted for almost 20% of the variance in child's mental health scores (r^2 = .19, p < .001).

Mediation by Age

Bootstrapping analyses were re-run for each age group to test for mediation for PAFAS subscales that were previously shown to be significantly correlated to SDQ subscales to minimise superfluous research.

2 – 4 Years

There was no evidence that family adjustment was involved in the relationship between adult and child mental health in children aged 2 to 4 years as all 95% confidence intervals of the indirect effects captured zero.

5 – 10 Years

In ages 5-10, only the family relationship had evidence of a mediating role in the relationship between parent and child mental health at this age. The family relationship helped to explain the association between adult mental health and total child mental health (DE = .14, p = .047; IE = .07, 95% CI [.02, .13]) as well as their child's prosocial behaviour (DE = -.07, p = .015; IE = -.03, 95% CI [-.056, -.013]).

Additionally, the family relationship mediated the relationship between adult mental health and their child's conduct problems (IE = .021, 95% CI [.002, .044]), as well as between adult mental health and their child's hyperactivity (IE = .02, 95% CI [.01, .05]) with no evidence of the effect on the child's conduct problems (DE = . 01, *p* = .73) or hyperactivity (DE = .03, *p* = .35) independent of the family relationship.

11 – 17 Years

For children aged 11 – 17, relationship factors including the parent-child relationship, the family relationship and parental teamwork all showed evidence for mediating the relationship between parental mental health and a subscale of child mental health. Due to the larger volume of significant mediations, adolescent bootstrapping results are displayed in Table 9. There was no evidence to suggest parental inconsistency or coercive parenting played a mediating role. The effect of parent mental health on child total mental health scores were mediated only by the parent-child relationship, the family relationship and parental teamwork.

The results indicated that parental teamwork mediated the relationship between adult mental health and their child's conduct problems (DE = .035, *p* = .31; IE = .03, 95% CI [.004, .07]) as well as their child's hyperactivity (DE = .07, *p* = .08; IE = .04, 95% CI [.01, .08]) with no evidence of adult mental health impacting the child's conduct problems or hyperactivity independent of the effect of parental teamwork. Additionally, the family relationship mediated the relationship between adult mental health and their child's conduct problems (IE = .03, 95% CI [.008, .06]) with no evidence of adult mental health impacting the child's conduct problems independent of the effect of the family relationship (DE = .04, *p* = .192).

The strongest model was the mediation of total adult and child mental health with the parent-child relationship, this model accounted for 31% of the variance in child mental health scores (r^2 =.31, *p* < .01). Followed by the mediation of adult mental health and child hyperactivity scores with the parent-child relationship, this model accounted for 26% of the variance in child mental health scores (r^2 =.26, *p* < .01).

Table 9. Age 11 – 17: Mediation of PAFAS subscales for the relationship between parent and child mental health, by SDQ subscales.

Outcome Variable		Mediator Variables: Inconsistency	Coercive Parenting	Parent-Child Relationship	Family Relationship	Parental Teamwork
SDQ Total	DE	.49**		.39*	.19*	.24
	IE	**.04 CI [-.106, .214]**		**.10 CI [.045, .261]**	**.07 CI [.002, .143]**	**.08 CI [.012, .172]**
	TE	.48***, r^2 = .43		.56**, r^2 = .31	.26**, r^2 = .09	.24*, r^2 = .07
Emotional Problems	DE	.03	.06	.03		
	IE	.06 CI [-.031, .130]	.02 CI [-.047, .102]	.02 CI [.004, .08]		
	TE	.09	.08	.06		
Prosocial Behaviour	DE	-.16**			-.07*	
	IE	**-.02 CI [-.112, .048]**			**-.03 CI [-.057,-.013]**	
	TE	-.18***, r^2 = .42			-.10***, r^2 = .10	
Conduct Problems	DE		.10*		.04	.04
	IE		**.01 CI [-.041, .092]**		**.03 CI [.007, .059]**	**.03 CI [.004,.068]**
	TE		.11*, r^2 = .19		.07*, r^2 = .05	.07*, r^2 = .04
Hyper-activity	DE			.15**	.07*	.07
	IE			**.03 CI [.001, .092]**	**.03 CI [.005, .055]**	**.04 CI [.01, .08]**
	TE			.18***, r^2 = .26	.08**, r^2 = .08	.10**, r^2 = .08
Peer relationship issues	DE				.04	
	IE				.02 CI [-.007, .044]	
	TE				.06*, r^2 = .04	

*10,000 bootstrapped samples, X variable = GHQ-12. DE = Direct Effect, IE = Indirect Effect, TE = Total Effect
* Significant at $\alpha < .05$, **significant at $\alpha < .01$, ***significant at $\alpha < .001$. Confidence Intervals of the unadjusted indirect effect are at 95%, bold indirect effect represents significance. For readability, significant mediation models have been shaded grey.

Discussion

The aim of this research was to explore the relationship between adult and child mental health where previous research has focused on the establishment of a relationship between the two. Our analyses demonstrated the involvement of family adjustment in the relationship between parent and child mental health and key differences were found between age groups. Support was gathered for all three hypotheses which contributed to the overall understanding of the relationship between parent and child mental health. This research has provided evidence in support of the family as a setting for intervention.

Associations with Parent and Child Mental Health

As expected, there was evidence of transference of mental health between parents and children. Similar to the Office for National Statistics study (2000), parents who scored above the mental health distress cut-off on the GHQ-12 were 3.5 times more likely to have a child with mental health distress than parents who had no signs of mental health distress. Adult mental health predicted SDQ scores at all subscales, but the degree and particular subscales differed across ages. At every age group hyperactivity was related to adult mental health and conduct disorders in the majority of the age groups.

Family Adjustment and Adult or Child Mental Health

Child mental health was related to all subscales of the PAFAS except the degree of parental encouragement received from the parent. The strongest relationships occurred with coercive parenting. The parent-child relationship (followed by the family relationship) was most influential across all subscales on the SDQ. Similar to child mental health, parental mental health was also related to all PAFAS subscales except for parental encouragement. Parental mental health was most strongly related to the family relationship and parental teamwork.

These results demonstrated the relationship of family adjustment to both parent and child mental health. Analysis of the relationship between PAFAS subscales and either parent or child mental health has not previously been undertaken. However, these results aligned with previous research that has shown relationships between parenting styles and mental health (e.g. Bayer et al., 2011; Stallman & Ohan, 2016) as well as family relationships and mental health (e.g. Ackard et al., 2006).

The Role of Family Adjustment

There was evidence that adult mental health indirectly predicted child mental health through the role of all subscales of family adjustment. This was a novel finding of this research. The indirect effect of the parent-child relationship was significant for all SDQ subscale outcomes, this showed the widespread influence of the parent-child relationship on the relationships between parent and child mental health. Similarly, the significant indirect effects of coercive parenting and the family relationship also revealed the importance of these elements of family adjustment in the relationships examined.

Difference Across Age Groups

These results collectively informed the relationship between adult and child mental health at different age groups.

At age 2 – 4 years, parental mental health was related to child mental health with no evidence of this relationship going through family adjustment. Adult mental health was related to the child's hyperactivity and conduct problems. However, family adjustment was still related to child mental health but only with the parenting style subscales (rather than relationship factors) including inconsistent parenting, coercive parenting and also parental encouragement to a lesser degree. The parenting style was related to conduct problems, hyperactivity and prosocial behaviour. This aligned with previous research where harsh discipline predicted negative child mental health outcomes in a similar age group (Bayer et al., 2011). However, the absence of a significant association between family relationship factors and child mental health was a new finding.

At age 5 – 10, parental mental health was related to child mental health with evidence of just the family relationship mediating this relationship. Adult mental health was related to child hyperactivity and emotional problems. Similarly to ages 2-4, parenting styles (namely coercive parenting and to a lesser degree inconsistent parenting) were also related to child mental health at this age but with the addition of two relationship factors: parent-child relationship and family relationship. Family adjustment overall was related to all areas of child mental health except emotional problems, including: prosocial behaviour, conduct problems, hyperactivity and peer relationship issues.

At age 11 – 17, parental mental health was related to a variety of child mental health issues and there was evidence of relationship factors mediating this relationship, including the parent-child relationship, family relationship and parental teamwork. Adult mental health was related to a much wider range of child mental health issues at this age than in the younger years, including prosocial behaviour, conduct problems, hyperactivity and peer relationship issues, but not emotional problems. Similar to 5-10 year-olds, family adjustment was related to

child mental health with both the parenting styles and relationship factors, however this was the only age group where parental teamwork was also related to child mental health. Additionally, this was the only age group where emotional problems were related to family adjustment.

These results differentiated the importance of the influence of parenting styles in age groups, and the greater impact of family relationship dynamics in older years (5 – 17). The overall strength of relationships occurring for 11 – 17 year-olds shows the key importance of family adjustment for the presence and potential influence of mental health distress across generations.

Limitations and Future Directions

One of the most important limitations of this research to note was that the parent was rating both their own mental health and their child's. However, the SDQ is designed minimise parental bias as the questions are centred around incidence of behaviour rather than parental opinion of mental health distress as a concept. It is also possible that higher parental distress may influence the perception of child behaviour and wellbeing.

An important limitation of this research was the inability to establish the direction of mental health transmission. Parents are also likely to be impacted by child mental health distress. The relationship examined may take effect in reverse. This research does not try to eliminate the possible bi-directional relationship of parent and child mental health. However, by showing the intergenerational relationship of mental health through the familial relationship, this research also speaks to the possible impact of child mental health on parent wellbeing due to the involvement of the family system in mental health.

This study was cross-sectional in design; as such, causality cannot be inferred. However, the design of this study benefited from the cross-section approach by being able to examine concurrent mental health which was the purpose of completing this research. It would be valuable to be able to determine how the relationship between parent and child mental health unfolds over attendance to support services. Additionally, longitudinal data could provide insight into the trajectory of the nature and type of disorders over time.

Mental health is a small contributor to the functionality of the family system. It is hypothesised that multiple issues and events experienced by the parent will drive poor mental health of parents and will similarly impact the mental health of the child. To understand the drivers of adult mental health and their impact on child mental health, further research may examine the correlations between adverse experiences and events and the mental health of the parent and child.

Conclusions and Implications

The results of this study provide support for a whole-of-family approach in improving the mental health and wellbeing of children and parents. As such, these findings support service intervention at a family level whilst informing differences across child development. This could help to shape interventions at different age levels to provide better outcomes for children and families. Practical interventions and social research on just child or just parent mental health alone may overlook understanding the family setting dimensions that drive poor mental health outcomes for children (including intergenerational transmission).

An important aspect of this research was the ability to differentiate across child age groups. A novel finding across all ages but particularly in the later age groups, was that 'problem behaviours' including conduct problems and hyperactivity, showed the most consistent relationship to family adjustment and parental mental health. Additionally, a greater number of correlations occurred (and to a stronger degree) in the 11-17 year age group. Based on these

findings, the influence of family and parental mental health on child behaviour may be particularly important for the later age group. As correlations were stronger at older ages than younger age groups, early and earlier in life family-based interventions targeted towards parenting and family dynamics may be the key to providing greater emotional and social outcomes for children and their families.

The implications of this research for service response are immensely important. Adolescent behaviour from a schooling, legal, and social perspective can often be treated as an issue of the individual. As found in this study, the relationship between parent and child mental health and family adjustment is a critical factor in determining child wellbeing, supporting our proposition that child mental health should be considered in the context of the family as a system, not the individual alone. As children age it is expected that there are additional influences on their emotional wellbeing such as community environments and peers. This research is showing the ongoing importance of the family environment across the age groups. It raises questions as to whether child and youth mental health systems that fail to address family and parental drivers of poor mental health for children and young people will be effective.

This study purposefully oversimplifies the experience of family mental health and wellbeing through the use of minimal variables. It is proposed that, for further research, a breadth of risk factors and adverse situations and events that drive poor mental health in parents will similarly impact the mental health of the child including absence of resources such as financial distress, secure housing, social isolation and events such as family violence.

Through demonstrating the relationships between family mental health, this study highlights the importance of understanding child mental health, including behavioural issues, within a family system. The results provide support for a wide range of services to ensure a focus on family systems. This involves applying this approach in initial assessments and family level interventions when responding to child mental health issues, including behavioural issues (such as conduct behaviour or hyperactivity). Organisations that see themselves as evidence builders, rather than just collecting baseline data, are paving the way with the ability to use data to inform an evidence base for practice and service delivery as reflected by this analysis.

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