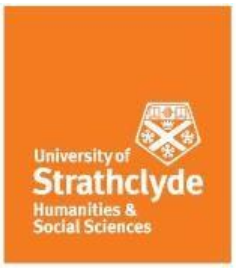

The development and validation of the Strathclyde Family Wellbeing Scale (SFWS)

Edward McGee

A thesis presented in part-fulfilment of the requirement for the Award of Doctorate in Educational Psychology

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Declaration of Authenticity and Author's Rights

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I also wish to thank Professors John DeFrain and Nick Stinnet for giving me permission to adapt the American Family Strengths Inventory.
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ABSTRACT

Families are the foundation on which children's psychological development is built. Family wellbeing is crucial to a nurturing environment. Consequently, measuring family wellbeing is essential to enable caregivers to reflect on their wellbeing and seek support if necessary. This thesis aimed to develop a scale to measure family wellbeing, by adapting the American Family Strengths Inventory (Defrain and Stinnet, 2008), and to investigate the utility of the Strathclyde Family Wellbeing Scale to measure the impact of family-based interventions.

The 16 items of the Strathclyde Family Wellbeing Scale were administered to a sample of 238 families by the Family First Service. Principal Components Analysis yielded a 10-item scale with three dimensions *(Interaction, Cohesion* and *Communication*), accounting for 67% of the variance with McDonald's Omega (MO) and Cronbach's Alpha (CA) coefficient indicating good internal consistency reliability for total score (MO = .862, CA= .861), and for subscale scores.

A three-way analysis of variance (ANOVA) found no statistically significant main effects or interaction effects at time-point 1, for location, age and number of family members, on Interaction and Communication, or interaction effects on Cohesion. There was a significant main effect for location on Cohesion, but the effect size was small. A repeated ANOVA found a large main effect of time on Interaction, Cohesion and Communication, indicating that time factor had a significant effect on them. Hence, the means of the dependent variables changed significantly at time-point 2.

Cross validation of findings in study 1 and 2 via thematic analysis of parental interviews and a focus group of professionals, found the Strathclyde Family Wellbeing Scale resonated with them, regarding validity, reliability, and measurement of change in wellbeing.

The Strathclyde Family Wellbeing Scale makes an original contribution to family psychology by providing a new assessment tool for professionals. Implications for future research on families and methodological limitations are discussed.

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CHAPTER 1 INTRODUCTION

The role of the family has long been central to the study of human psychological development (Benson, Scales, Hamilton, & Sesma, 2006; Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000). The family provides children with their earliest and enduring experience of relationships and promotion of cognitive development. A recent study in Scotland, found that increased mother-child conflict and lower parental knowledge of the child's activities or relationships when absent from school were factors associated with both child mental health problems and low subjective well-being (Parkes, Sweeting & Wight, 2014). Consequently, the family can promote or distort development and behaviour (Cox & Paley, 1997). Therefore, understanding how families function is crucial, not only from a developmental perspective, but as a precursor to know how wellbeing can be generated within families.

Hence, family systems theory is explored, because a core theoretical concept, is that family relationships are symbiotic and regulated by intrinsic procedures that have developed within the family, which guide how care and provisions are obtained, such as warmth and support, (Sturge-Apple, Davies & Cummings, 2010). Family systems theory is the basis and driver of family therapy models (Priest, 2021) and is derived from general systems theory (von Bertalanffy, 1969). Furthermore, learning from these theories has enabled a typology of family functioning to be identified. Three different, stable categories of family relationships have been found by family systems theorists, which are defined by harmony, disengagement, and enmeshment (Minuchin, 1974). This typology of families is reassessed by reviewing a more recent study to see if they are still valid (Sturge-Apple, Davies & Cummings, 2010). Family functioning under the stress of domestic violence is also examined in *Implementing a Strengths-Based Approach to Intimate Partner Violence Worldwide* (Asay, DeFrain, Metzger & Moyer, 2015).

Chapters two and three of this study will contribute further to our understanding of these issues and provide additional information about the context of this thesis, which took place in Council X, Scotland.

"Family strengths are those relationship qualities that contribute to the emotional health and well-being of the family" (DeFrain & Stinnett, 2002, p. 637). Research on family strengths originated with classic studies (Woodhouse, 1930) and (Gabler & Otto, 1964; Otto, 1962, 1963), which were followed up by extensive studies by a cohort of leading researchers in the field (DeFrain, DeFrain, & Lepard, 1994; DeFrain & Stinnett, 2002; Olson & DeFrain, 2006; Stinnett & DeFrain, 1985; Stinnett & O'Donnell, 1996; Stinnett & Sauer, 1977; Xie, DeFrain, Meredith, & Combs, 1996). The purpose of this thesis was to continue the research by investigating family functioning from a strengths perspective, because problems are solved by families who utilise their strengths effectively (DeFrain & Asay, 2007a). Hence, if, we can help families to become strong, they are more likely to be able to cope with and overcome the challenges they encounter (DeFrain & Asay, (2007a). Statistics reveal some of these challenges, for example, an estimated 872,000 children in the USA were victims of abuse and neglect in 2004 (Administration on Children, Youth and Families, 2006).

Chapter 2 will critique the long-established Family Strengths Model developed by DeFrain and Stinnet (1985), by evaluating it from different perspectives, such as replication of its findings, comparison with another contemporary model of family functioning, the Circumplex Model, and against theories of family functioning and wellbeing. The Family Strengths Model (DeFrain & Stinnet, 1985) and the subsequent American Family Strengths Inventory (DeFrain, 2002; DeFrain & Stinnet, 2008), derived from it, have not been applied in Scotland. This study confirms the validity of the Family Strengths Model and consequently contributes new empirical data, based on Scottish families, to the field.

This study also reviews the concept of family strengths through the contemporary lens of wellbeing to demonstrate the connection between family wellbeing and family strengths. Wellbeing is about developing as a person physically, emotionally and socially. A child or young person's wellbeing is influenced by all the experiences and needs they have at different times in their lives. Studies have shown that child wellbeing is influenced by family wellbeing and the quality of parenting (McKeown, Pratschke, & Haase, 2003; Rafferty., Griffin, & Robokos, 2010). Hence, family wellbeing provides the basis for positive parenting

and child wellbeing (Newland, 2014). Families are thus crucial to the development of wellbeing in children and therefore both individual and family wellbeing are interconnected. A meta-analytic investigation of the relationships between different dimensions of family strengths and personal and family well-being, concluded that different dimensions of family strengths are significant predictors of personal and family well-being (Dunst, 2021). Chapter two will explore this meta-analysis in detail and consider other definitions and theories of family functioning and family wellbeing, specifically, Ecological theory (Bronfenbrenner, 1979, 1989), and classic approaches to defining wellbeing: hedonic wellbeing (Diener , Suh, Lucas & Smith, 1999; Gurin, Veroff, & Feld, 1960) and eudaimonic wellbeing (Jahoda, 1959; Keyes, 1998; Ryff, 1989; Ryff & Keyes, 1995).

Scottish Government policy also explicitly recognises the importance of wellbeing via Getting It Right For Every Child (GIRFEC), (Coles, Cheyne, Rankin & Daniel, 2016), which is the national approach to improving the wellbeing of children and young people. Through policy and the delivery of services at both national and local level, the GIRFEC approach puts the best interests of the child at the heart of decision making. Crucially, it takes a holistic approach to the wellbeing of children (Coles, Cheyne, Rankin & Daniel, 2016). Family wellbeing is further acknowledged by the Early Years Framework (2008) and its aim of maximising positive opportunities for children to get the best start in life (Scottish Government, 2008). The issue of poverty and inequality, which also impacts on wellbeing is also addressed via the Scottish Attainment Challenge, launched by the Scottish Government in 2015, which focuses on equity, raising attainment, and closing the poverty related attainment. Chapter 3 adds further context to this study by exploring the current policy landscape on wellbeing at national and local authority level.

Family wellbeing is the common thread, which links family functioning and future outcomes of individuals, together with government policy and practise. Hence, research, measurement and the evaluation of interventions to support family wellbeing is vitally important. This thesis contributes to the field of family wellbeing through the development and validation of a new scale to measure family wellbeing by adapting the American Family Strengths Inventory ((DeFrain & Stinnet, 2008), which was derived from the Family Strengths Model (DeFrain & Stinnet, 1985). A

strength-based approach also aligns with the development process of the Warwick-Edinburgh Mental Well-being Scale (WEMWBS) (Tennant et al., 2007), the WHO (five) Well-being Index (Bech, 2004) and the Stirling Children's Well-being Scale (Liddle & Carter, 2015). Chapter 4 will review some of the scales developed to measure aspects of family wellbeing.

Initial research by the author, indicated that a variety of scales has been developed to assess families, such as the Family Assessment Measure (FAM) (Skinner, Steinhauer & Santa Barbara, 1995), the Family Assessment Device (FAD), (Epstein, Baldwin & Bishop, 1983 and the Family Functioning Style Scale (Trivette, Dunst, Deal & Propst,1990). However, these are detailed, often quite lengthy and problem-focused and not designed with the widely used contemporary concept of wellbeing as the primary focus/basis for the tool. In a systematic review of questionnaires of measures of family functioning for use in clinical practice and research (Pritchett, Kemp, Wilson, Minnis, Bryce & Gillberg, 2010), 107 were reported and the most commonly used ones identified, which included the FAD and FAM, cited above. While some of scales measured or contained items that could certainly be linked to wellbeing, for example, the Family Apgar (Smilkstein, 1978) along with the FAM and FAD, none of the scales specifically referred to 'wellbeing'. In the systematic review, the search terms employed also did not include 'wellbeing'.

This systematic review of measures of family relationships concluded that while there are numerous measures available demonstrating characteristics, which make them suitable for continued use, future research is needed to explore the more holistic measure of family functioning using multi-informant data (Pritchett, Kemp, Wilson, Minnis, Bryce & Gillberg, 2010). This view supports the aims of this study, to develop a new scale to measure family wellbeing by focusing on the holistic concept of 'wellbeing' and collating and evaluating the views of both families and practitioners on family wellbeing. Hence, the creation of a short, robust, strength-based scale to measure wellbeing in families in Scotland would be a valuable contribution to the field. Chapter 4 will review the tools that have been developed to measure Family Wellbeing detailed above, as well as the systematic review by Pritchett, Kemp, Wilson, Minnis, Bryce and Gillberg (2010). Chapter 5 will

consolidate the content of all previous chapters of the literature review by reviewing the essential principles of scale design.

The central focus of this study, therefore, is the development and validation of a new scale to measure family wellbeing and to explore how reliably, a short-form validated scale of family wellbeing, can measure the impact of early family-based intervention. The aims of the study are to:

1. Explore and determine the underlying dimensions of the Strathclyde Family Wellbeing Scale (SFWS) using Principal Components Analysis (PCA) / Principal Axis analysis.

2. Investigate the utility of the Strathclyde Family Wellbeing Scale using factor scores from the Principal Component Analysis as a measure of outcome and impact and as a measure of its utility to measure outcome and impact of family-based interventions.

3. Investigate further the validity of the scores derived from the Strathclyde Family Wellbeing Scale by cross-validating findings with the pilot sample of families and the Family First Service who will be involved in interviews. Data will be collected by semi-structured interviews and focus groups and analysed by thematic analysis (Braun & Clarke, 2006).

1.1 Organisation of thesis

Part A Literature Review: Chapters 2-5

The literature review of the thesis is divided into four discrete chapters, each of which covers a key aspect of the development and validation of the Strathclyde Family Wellbeing Scale. The chapters provide a concise, logical narrative, which links each topic by firstly focusing broadly on the origins of the scale in chapter 2, to show that the Strathclyde Family Wellbeing Scale is formed from a strong theoretical model based on empirical research evidence. The focus then narrows in chapter 3 to demonstrate the context in which theoretical models of family functioning operate and their impact on family wellbeing. This chapter also provides further evidence of the need for a scale to measure family wellbeing. Chapter 4 continues to narrow the focus by reviewing a selection of papers, which critique existing instruments designed to measure family wellbeing. This chapter consequently reveals a gap for a

new scale to be developed and the structure and format it may take. Finally, chapter 5 concentrates exclusively on the principles on which scales are based. This chapter demonstrates that the Strathclyde Family Wellbeing Scale is closely constructed on these principles and that they informed all aspects of its design.

Thus, the literature review integrates the content of each of the chapters, starting from a high-level theoretical perspective, then progressively reducing to focus on scale context and applications, followed by an examination of specific, existing instruments, then finally synthesising the knowledge obtained to converge on the principles underpinning the development of the Strathclyde Family Wellbeing Scale. Hence, the chapters of this thesis begin with Chapter 2, comprising a critique of the Family Strengths Model (Stinnet & DeFrain, 1985), including discussion of the development and evolution of the model and theories of family functioning and family wellbeing. Subsequent chapters include Chapter 3, which presents the social, political and wider research context in which the Strathclyde Family Wellbeing Scale was developed. Chapter 4 reviews published scales developed to measure family wellbeing, and Chapter 5 concludes the literature review with a review of the principles of scale design.

Part B Methodology, Results, Conclusions and Implications: Chapters 6 - 10

Chapter 6 presents the Methodology for the selected research design and research questions, and Chapter 7, Chapter 8 and Chapter 9 present the results and findings of Study 1, 2 and 3 respectively, which address each of the three aims of the thesis. Chapter 10 concludes the thesis with a discussion of the main research findings and implications for future research.

Part A Literature Review: Chapters 2-5

CHAPTER 2 CRITIQUE OF THE FAMILY STRENGTHS MODEL

Introduction

The purpose of this literature review is to critique the Family Strengths Model (Stinnet and DeFrain, 1985), to evaluate its validity and integrity, because a principal aim of this thesis is the development and validation of a new scale to measure family wellbeing. The Family Strengths Model (Stinnet & DeFrain, 1985) underpinned the development of the proposed Family Wellbeing Scale, which was developed and derived from the American Family Strengths Inventory (Stinnet & DeFrain, 2008). Critique of the model is via its original methodology, replication of results from other studies and comparison with the Circumplex Model (Olson, Waldvogel & Schlieff, 2019), and its evolution and ability to remain relevant over time. Additionally, the link between family strengths and family wellbeing is explored via a meta-analytic investigation of the relationships between different dimensions of family strengths and personal and family well-being (Dunst, 2021). Finally, its compatibility with theories of wellbeing and family functioning are explored.

2.1 Literature Review Search Methodology

An extensive database search was undertaken to gain access to published sources using EBSCO, APA Psyc Articles, APA PSyinfo, Google Scholar, Web of Science, APA Psyc Books, Science Direct (Elsevier), SCOPUS, Sage Research Methods, based on pre-specified criteria. Articles were restricted to English language and included peer-reviewed publications and 'grey' literature.

Chapter 2, which specifically critiques the Family Strengths Model, employed keywords in the search and included the authors' names: 'DeFrain', 'Stinnet' and the combination 'DeFrain and Stinnet', which then generated additional relevant, associated authors and papers. Specific search terms included: 'Family Strengths Model' and 'American Family Strengths Inventory'. No restrictions on the dates of papers were applied to maximise the search using these key terms. This

strategy was utilised to identify papers, which could provide details on the origins of the Family Strengths Model, to facilitate a rigorous critique of the model.

In addition, the following terms, related variations, and their plural versions using Boolean combinations of them were also utilised in Chapters 2 and 3: 'Wellbeing', 'family', 'strengths' and 'function'. Scottish Government policies were also used as search terms, including 'Whole Family Wellbeing Fund' and 'Growing Up in Scotland'.

Chapter 4 reviews published tools that measured family wellbeing. Given the potential for many tools to be identified, a scoping review method was adopted. A scoping review is an appropriate method to identify early evaluations of a compilation of research when an area of interest, such as family wellbeing is developing and has a range of definitions and measurements (Arksey& O'Malley, 2005). Scoping reviews can be differentiated from systematic reviews by their rigorous method of combining research findings and then explaining and developing thinking in the subject, as well as identifying any gaps in the field (Arksey & O'Malley, 2005).

This search methodology was a good fit given the aim of this chapter and the thesis word restriction. Hence, inclusion criteria included focusing on identification of systematic reviews and scoping reviews on instruments that measured family wellbeing and related areas. This ensured that a large sample of well-established tools could be reviewed in an efficient manner, via a small, but highly specific selection of papers. Studies were filtered to include only papers published from the year 2000 onwards in peer reviewed journals, unless the content was of particular interest. This excluded any older papers to ensure only relatively recent studies were identified. Search terms, their plurals and Boolean combinations included: 'family wellbeing', 'strength-based',' inventory', 'checklist', 'scales', 'questionnaire', 'design', 'development', 'tool', 'instrument', 'measure' and 'assessment'.

Chapter 5 explores the 'principles of scale design' and hence this title was used as a search term along with key words and their variations such as: 'validity', 'reliability', 'psychometric ', and 'dimensions'. These were sometimes combined with words utilised in Chapter 4 and listed above. No dates were used to filter results.

2.2 The origin and development of the Family Strengths Model Stinnet (1979) and (Defrain & Stinnet, 1985)

The theoretical basis for the development of the Family Strengths Model (Defrain & Stinnet, 1985) can be distinguished from other theories about family functioning, which were often developed from observations by researchers external to the family (Fitzpatrick, 1988; Olson, 1977). However, (DeFrain & Stinnett, 1992; Stinnett, 1979; Stinnett & DeFrain, 1985), challenged this approach in the late 1970s, by concentrating on the views of family members, in contrast to existing research that had focused mainly on "problems and pathology in family life" (Stinnett, 1979, p. 23). Research by Stinnett (1979) and Stinnett and DeFrain (1985), employed a different methodology, which utilised the perceptions of family members by seeking their views of 'strong' families, regarding the behaviour of individuals in their family, in relation to constructs such as communication, conflict and power (Stinnet, 1979). This methodology elicited new perspectives and information on how families function (DeFrain & Stinnett, 1992). Stinnett, suggested that a successful or strong family "creates a sense of positive family identity, promotes satisfying and fulfilling interaction among members, encourages the development of family group and individual members, and is able to deal with stress" (Stinnett, 1979).

Stinnet (1979) adopted a qualitative methodology to conduct the research, using questionnaires and interviews to explore and categorise participants' views of their relationships in the family. Stinnet (1979) concentrated research on family communication and systems that had developed around conflict and power within the family. The concept of "Strong families" was defined and utilised in the research to recruit families based on marital satisfaction, parent child relationship satisfaction, and identification by family experts. Hence, selection of strong families was based on three assumptions*: 1) "they would have a high degree of marital happiness;" 2) "they would have satisfying parent-child relationships;" and 3) "family members would do a good job of meeting each other's needs"* (Stinnett and DeFrain, 1985, p. 9).

In the first study, subjects were nominated for the project by family life and home economics specialists, who recommended families that they believed,

functioned well (Stinnett & DeFrain, 1988). The original study sample comprised two-parent families with at least one child at home. Recruitment was based, as detailed, on parental reports of high marriage satisfaction and parent-child relationships (Stinnett & DeFrain, 1988). This resulted in 130 families drawn from rural and urban locations of various sizes. Interview and extensive questionnaire data were collected, together with research on a range of features of family life. These covered communication styles (Ball, 1976), marriage relationships (Ammons & Stinnett, 1980), personality traits and commitment (Leland, 1977); religious faith (Matthews, 1977; management of conflict (McCumber, 1977), patterns of behaviour (Stinnett & Sauer, 1977), and power structure (Tomlinson, 1977). The original data from the responses of 130 strong families who completed the Family Strengths Inventory, was then analysed. This resulted in the identification of six characteristics of strong families: *appreciation, spending time together, good communication patterns, commitment, high degree of religious orientation, and the ability to deal with crises in a positive manner* (Kelley & Sequeira, 1997).

The majority of subjects for the second project were families who answered a newspaper advertisement seeking participants for a research project on strong families. Participants, once again completed in depth questionnaires on their family relationships (Stinnett, Sanders, & DeFrain, 1981), such as a self-report and family and marital satisfaction scale (Krysan, Moore, Zill, 1990). Those who scored very highly were included in the study. Subsequently, many other studies were conducted: strengths of black families (King, 1980); leisure in high-strength, middle-strength, and low-strength families (Lynn, 1983); religiosity and purpose in life (Rampey, 1983); the strengths and stresses of executive families (Stinnett, Smith, Tucker, and Schell, 1985); family strengths and personal well-being (Stinnett, Lynn, Kimmons, Fuenning, & DeFrain, 1984); strengths of remarried families (Knaub, Hanna, & Stinnett, 1984); family strengths concepts and marriage enrichment programs (Gütz, 1980; Johnson, 1984); an analysis of the characteristics of strong families and the effectiveness of marriage and family life education (Luetchens, 1981); and parent-child relationships in strong families (Strand, 1979).

One study, (Abbott & Meredith, 1988) investigated family strengths across five groups, comprising 210 white parents, 105 Chicano parents, 103 black parents,

80 Hmong parents, and 57 American Indian parents. The research aims were to: 1) identify qualities considered vital to good family functioning; and 2) evaluate the level of family strengths across the groups. Family strengths inventories developed by Stinnett and DeFrain (1985) and others, were used to collect data. The results confirmed there was a general consensus in parents across all five groups on the traits of well-functioning families. However, the rank order of groups according to the scores on the inventories, were that the white and Hmong families obtained the highest scores, followed by blacks, Chicanos, and American Indians, respectively.

2.2.1 Critique of the original model

Criticisms of the original model include that it was partly based on a narrow selection criterion, and rather dated constructs applied to sample selection, which prevailed at the time, such as religious orientation. Similarly, somewhat outdated, marital satisfaction was also used as selection criteria for recruiting participants, which presumably meant only married, heterosexual couples were recruited to take part. Recruitment was based on self-identification or by others, as being strong, well-functioning families, which might also be a potential weakness in the methodology.

The sample size is possibly rather small. Recommendations of an appropriate sample size, for example, to develop a new scale, based on ratios of questionnaire items to subjects, have ranged from 2 to 20 items per subject (Hair, Anderson, Tatham and Black, 1995; Kline, 1979), 5:1 (Gorusch, 1983), 10:1 (Nunnally, 1978; Schwab, 1980) and 15:1 (Mertens, 1998). A further limitation of the methodology was that it also restricted participants' responses to a pre-determined set of features on which to give feedback (Kelley & Sequeira, 1997). Additionally, the focus on 'strong families', while deliberate because much research on families previously concentrated on the problems or weaknesses of families (DeFrain & Asay, 2007a), nevertheless excluded dysfunctional families and their perceptions of strong families. The inclusion of dysfunctional families may have revealed other characteristics than the six identified originally (Kelley & Sequeira, 1997).

However, there was diversity within the 130 families who met the criteria, because they were drawn from different kinds of rural locations, such as farms and ranches, as well as a mixture of towns and cities. A later study also explored single-parent families (Stinnett & DeFrain, 1988). In addition, a vast number of later

studies were conducted on many different types of families such as: strengths of black families (King, 1980); the strengths and stresses of executive families (Stinnett, Smith, Tucker & Schell, 1985); family strengths and personal well-being (Stinnett, Lynn, Kimmons, Fuenning, & DeFrain, 1984) and strengths of remarried families (Knaub, Hanna, & Stinnett, 1984). However, the limitations of the original model are most strongly counterbalanced or even refuted by the extensive research of the model over decades, in many different countries and with thousands of diverse families, which will be explored in the following sections.

Stinnett and DeFrain (1985) also repeated the Family Strengths Inventory, but with a larger sample of three thousand 'strong' families in the USA and discovered the same results as in the original study. The items and questions in the Family Strengths Inventory were developed from a literature review of professional material and reviewed by a panel of family experts (Kelley & Sequeira, 1997). Further American and international studies have demonstrated that the six qualities identified by Stinnett (1979) are highly discriminating between families high in family strength and those low in family strength (DeFrain & Stinnett, 1992; Stinnett & DeFrain, 1985). However, Stinnett & DeFrain, (1988) explicitly recognised the risk of overgeneralising when reporting on the qualities of strong families and acknowledged the sheer complexity and variety of families. Nevertheless, they concluded that six major qualities were present in strong families in the USA and in other countries, following the findings of 30 different studies with 3,000 families in every state of the United States and several foreign countries (Stinnett & DeFrain, 1988).

Further validation of the Family Strengths model can be derived from a later study (Kelley & Sequeira, 1997), which aimed to validate and extend Stinnett's (1979; DeFrain & Stinnett, 1992; Stinnett & DeFrain, 1985) categorisation of strong family traits. However, (Kelley & Sequeira, 1997) deliberately tried to address three possible methodological weaknesses in the study by Stinnett & DeFrain (1985). Firstly, data from dysfunctional as well as functional families was obtained. Secondly, recruitment was not based on marital or parent-child satisfaction, thus widening the selection criteria. Finally, the methodology was less structured than Stinnett's (1979) original study and the Family Strengths Inventory (Stinnett & DeFrain, 1985). The

primary purpose underlying this study was that: *"*the changing nature of the American family calls for continued re-evaluation of research, such as Stinnett's, in order to examine the stability of family traits over time." (Kelley & Sequeira, 1997, p.96).

The methodology used by (Kelley & Sequeira, 1997) included open-ended questions to elicit participants' verbal and written responses with reference to functional and dysfunctional family experience. Such an approach, it was asserted, should allow for "more detailed, differentiated data" (Burnett, 1991, p. 123). This replicated the methodology of Stinnett (1979) by collecting data in written responses and face-to-face interviews. Hence, the study was a qualitative investigation of family members' accounts of their experiences, both good and bad and their attitudes and feelings (Braithwaite, 1995).

The findings were based on a thematic analysis of 206 written responses and 10 in-depth oral interviews, which resulted in the emergence of eight themes: abuse, loving-supportive environment, communication, family rituals/togetherness, stability, parental roles and responsibilities, individual issues, and external factors (Kelley & Sequeira, 1997). These eight themes were compared with the categories developed by Stinnett (1979) and demonstrated significant correspondence between constructs identified as pertinent to family functioning. The conclusion was that the themes supported and extended Stinnett's traits of strong families (Kelley & Sequeira, 1997).

2.2.2 The Six Qualities of strong families

The six qualities are briefly summarised (DeFrain, Cook & Gonzales-Kruger, 2004) as:

Appreciation and Affection

Members of strong families care intensely for each other and clearly and consistently communicate this to one another.

Commitment

Members of strong families are devoted to the well-being of each other, as well as spending together time, which is not significantly impacted by work responsibilities or other distractions This was explained as*:*

"Commitment ... goes in two directions. Each family member is valued; each is supported and sustained. At the same time, they are committed to the family as a unit. They have a sense of being a team; they have a family identity and unity. When outside pressures (work, for example) threaten to remove family from its top priority, members of strong families take action and make sacrifices if necessary to preserve family well-being" (Stinnett, 1986, p.48).

Positive Communication

Skilled communication is a crucial aspect of family relationships, which not only resolves disputes and problems or focused on tasks, but is leisurely, enjoyable and happy. Listening to each other is essential.

Enjoyable Time Together

This quality was identified while administering the American Family Strengths Inventory (DeFrain & Stinnet, 2008), by eliciting responses from families by conducting the activity called: 'A Journey of Happy Memories' (DeFrain, 2000). During the sessions, individual family members were asked to relax and recall their happiest childhood memories. These memories were then compiled under the title: 'A Journey of Happy Memories'. The great majority referred to good times with family, or friends, pets, or pastoral experiences, if they had an unhappy childhood.

Spiritual Well-Being

Members of strong families defined spirituality in a variety of ways, including belief in God, hope or an optimistic outlook in life and others as an attachment to moral causes. This was explained as:

"For many, the yearnings of their spiritual nature are expressed by membership in an organized religious body such their spiritual nature are expressed by membership in an organized religious body such as a church, synagogue, or temple. For others spirituality manifests a concern for others, involvement in worthy causes, or adherence to a moral code" (Stinnett, 1986, p. 48). Stinnett and DeFrain, in their American Family Strengths Inventory (2008) also assess this dimension.

Successful Management of Stress and Crises

Strong families encounter emergencies, pressure and worries like all families but they respond better by using creative strategies and through early intervention and prevention.

The Family Strengths Model is therefore a carefully constructed theory, predicated on a strong evidence base, developed over decades and supported by similar findings from many studies, resulting in a robust model of 'strong' families. The Family Strengths Model, based upon the six qualities of strong families, discovered through robust empirical research evidence, thus provided a strong theoretical base on which to develop a scale to measure Family Wellbeing. The next section consolidates this evidence base by considering how the Family Strengths Model continued to develop over time.

2.3 Evolution and development of tools of the Family Strengths Model (Defrain & Stinnet, 1985)

Despite some criticisms mentioned of the methodology used to develop the original Family Strengths Model, it may be commended for its flexibility and adaptability, as evidenced by subtle modifications over time. Additionally, an inventory of family strengths supported by checklists for each of the six major qualities was developed (DeFrain & Stinnet, 2008). The descriptions of the original six qualities of strong families have been slightly modified over the years, possibly adapting to contemporary norms and mores of the time.

For example, the strengths were restated as: *commitment to family wellbeing; spending time together as a family; family member appreciation of one another; positive communication among family members; spiritual wellness that includes love and compassion; effective coping strategies* (Stinnett & DeFrain, 1985). An example of a quality being revised and updated is Spiritual Wellness, which originally was defined by religiosity and reference to God. Later studies found that not all strong families believed in God, but instead link spirituality to mental health (DeFrain & Stinnett, 1992).

In a later study, (Stinnet & DeFrain, 1988) reported that their hypotheses were based on the results of 30 different studies with 3,000 families across the United States and some foreign countries resulting in qualities of: *Commitment, Appreciation, Communication, Time together, Spiritual wellness, the ability to cope with stress and crisis*. Later again, (DeFrain & Asay, 2007b) further summarised the qualities of strong families, following thirty years of combined research in the field to include sub-qualities as detailed in Table 2.1.

Table 2.1

Six Major qualities and sub-qualities of Strong families

Appreciation and Affection	**Commitment**	**Positive Communication**	**Enjoyable Time Together**	**The Ability to Manage Stress and Crisis Effectively**	**Spiritual Well-Being**
Caring for each other	Trust	Giving compliments	Quality time in great quantity	Adaptability	Hope
Friendship	Honesty	Sharing feelings	Good things take time	Seeing crises as challenges and opportunities	Faith
Honesty	Dependability	Avoiding blame	Enjoying each other's company	Growing through crises together	Compassion
Respect for Individuality	Faithfulness	Being able to compromise	Simple good times	Openness to change	Shared ethical values
Playfulness	Sharing	Agreeing to disagree	Sharing fun times	Resilience	Oneness with humankind
Humour					

Note. From Strong Families Around the World (DeFrain& Asay, 2007b)

The table is further evidence for a model of family strengths, built over many years and based on numerous studies by researchers, which has layers of qualities that can be subsumed within the six dimensions of the Family Strengths Model, resulting in an intricate and robust theoretical framework.

2.3.1 The development of self-assessment tools

The Family Strengths Model was augmented by the development of six checklists for each of the six qualities of strong families developed over a span of 30 years (DeFrain, Cook & Gonzales-Kruger, 2004). These were used with families to help them self-assess their family wellbeing. These checklists formed the American Family Strengths Inventory (DeFrain & Stinnet, 2008). An example of the checklist for Appreciation and Affection is reproduced below. Each person places an "S" (for strength) beside the qualities they feel their family has achieved, a "G" beside those qualities which are an area of potential growth, and "NA" if non-applicable.

American Family Strengths Inventory (DeFrain & Stinnet, 2008, p.3):
Checklist for Appreciation and Affection,

In our family...

- We appreciate each other and let each other know this.
- We enjoy helping each other.
- We like keeping our promises to each other.
- We like to show affection to each other.
- We feel close to each other.
- We like to be kind to each other.
- We like to hug each other.
- We enjoy being thoughtful of each other.
- We wait for each other without complaining.
- We give each other enough time to complete necessary tasks.
- We are able to forgive each other.
- We grow stronger because we love each other.
- All things considered, we have appreciation and affection for each other.

The title of the model also evolved to become ‘The International Family Strengths Model’, due to its thirty-year development by Stinnett, DeFrain, and their colleagues, and research base of more than 24,000 family members in all 50 states of the United States and 28 other countries (DeFrain & Asay, 2007a).

The continuous evolution of the Family Strengths Model, combined with self-assessment tools used with thousands of families, has resulted in a contemporary model, which resonates effectively with the current values and concerns of families. Consequently, the case is further strengthened for developing a Family Wellbeing Scale, by adapting the American Family Strengths Inventory (DeFrain & Stinnet, 2008) for use in a Scottish/UK context, which would be original research and contribute to the field of family wellbeing.

2.3.2 International studies of the Family Strengths Model

Studies of families in different cultures revealed that while they may have distinctive means of displaying their strengths, the qualities that enable families to function effectively are noticeably alike (DeFrain, DeFrain, & Lepard, 1994). Hence, DeFrain & Asay (2007b) claimed that while every family in all cultures, have distinctive traits and strengths, their strengths are significantly similar, more so than their differences. They concluded that the qualities of 'strong' families can be summarised into the six core concepts detailed above, which can be broken down further, to the sub qualities listed. Crucially, they emphasised that the components on which the Family Strengths Model was constructed were obtained by gathering data internally from the views of family members and externally from others such as professionals.

Consequently, a robust methodology was employed to build the model, based not only on a vast, international sample of families but also internal and external perspectives of the family. Such an approach was explicitly recommended, following a systematic review of questionnaire measures of family functioning used in practice and research (Pritchett, Kemp, Wilson, Minnis, Bryce & Gillberg, 2010). They concluded that future research should be directed towards utilising multi-informant data, because many of the measures identified based measurement on input from a single member of the family. Hence, merging the views of family members along with other relevant individuals such as teachers and carers would result in a holistic assessment of family functioning (Pritchett, Kemp, Wilson, Minnis, Bryce & Gillberg, 2010). The Strengths and Difficulties questionnaire (Goodman, 1997), exemplifies this multi-informant approach by seeking the views of the child, parent and teacher.

The quality of the research, which resulted in the Family Strengths Model has also been recognised by Trivette, Dunst, Deal, Hamer & Propst (1990), who asserted that the most ambitious work on identifying qualities, which distinguish strong families has been conducted by Stinnett and his colleagues (Lingren et al., 1987; Rowe et al., 1984; Stinnett, 1979; Stinnett, Chesser, & DeFrain, 1979; Stinnett, Chesser, DeFrain, & Knaub, 1980; Stinnett & DeFrain, 1985a; Stinnett, DeFrain, King, Knaub, & Rowe, 1981; Stinnett et al., 1982; Stinnett, Lynn, Kimmons, Fuenning, & DeFrain, 1984).

The Family Strengths Model, therefore, has established itself firmly in the field of family studies as a major contributor to understanding how strong families function, through years of continuous research and development. However, how does it compare with other models of family functioning? The next section addresses this question.

2.4 Comparison with the Circumplex Model of Marital and Family Systems

Many other researchers and practitioners, other than Stinnett and DeFrain (1985) have also attempted to identify the qualities of strong families (e.g., Beavers & Hampson, 1990; Curran, 1983; Otto, 1962). Indeed, according to (DeFrain & Asay, 2007b), several other family models have been suggested over an extensive period of time, which have significantly similar features. In particular, the Circumplex Model of Marital and Family Systems (Olson, Waldvogel & Schlieff, 2019) is cited as complementing the International Family Strengths Model by Stinnett, DeFrain, and their colleagues (DeFrain & Asay, 2007b).

The Circumplex Model was developed over a similar timescale as the Family Strengths Model and comprises three major dimensions of cohesion, flexibility, and communication. The curvilinear dimensions of cohesion and flexibility were identified by collating and combining more than 200 concepts drawn from the field of family studies (Olson, Sprenkle, & Russell, 1979). The majority of concepts in family studies are linear, which means the higher the score obtained, the better result it is for that concept. For example, a high score for communication suggests communication in that family is strong, while a lower score would indicate that family communication is weaker for that construct.

However, a key finding was that cohesion and flexibility were curvilinear, which means very high and very low scores indicate difficulties with these constructs. Curvilinear may be explained for the Cohesion dimension, which is described as emotional intimacy to another person, as being problematic if excessive, and therefore suffocating for an individual. On the other hand, if Cohesion is extremely weak, this indicates distance and remoteness of feelings for that individual.

Subsequently, a third, linear dimension, communication was discovered (Olson, Waldvogel & Schlieff, 2019). The concepts were then grouped into the three dimensions of cohesion, flexibility, and communication. Consequently, the three dimensions were revealed theoretically, rather than empirically, which may be a criticism of the Circumplex Model. Such an approach is also in sharp contrast to the Family Strengths Model, which was based on data gathered from thousands of families in many different countries over decades.

However, despite the origins of the model being derived from theoretical concepts rather than empirical evidence, nonetheless, empirical evidence for the robustness of the Circumplex Model has been obtained through more than 1,200 studies conducted using the self-report family assessment instrument called FACES (Kouneski, 2000; Waldvogel & Schlieff, 2018). Consequently, it is one of the most scrutinised family models, according to Olson, Waldvogel and Schlieff (2019). There is also evidence that the model has, like the Family Strengths Model, continued to evolve over time, reflecting a sophisticated model and a dynamic quality of continuous development, which is described in the next section. Comparison with such a strong, established model of family functioning as the Circumplex Model, is therefore a useful strategy to critique, further, the Family Strengths Model.

2.4.1 The Circumplex Model dimensions: cohesion, flexibility and communication

The Cohesion dimension is described as feeling close, emotional proximity to another person (DeFrain & Asay, 2007b). Four levels of cohesion exist, ranging from *disengaged* (extremely low) to *separated* (low to moderate) to *connected* (moderate to high) to *enmeshed* (very high) (Olson, 2000). However, similar to the dynamic,

evolving Family Strengths Model (DeFrain & Asay, 2007b), the Circumplex Model has also changed over time. For example, the Cohesion dimension in a later paper is described as having five levels (Olson, Waldvogel & Schlieff, 2019).

The Flexibility dimension refers to the degree of modification in family leadership, role relationships and relationship rules. Similar to Cohesion, the four levels of flexibility range from rigid (very low) to structured (low to moderate) to flexible (moderate to high) to chaotic (very high) (Olson, 2000), but it has also now evolved into five levels (Olson, Waldvogel & Schlieff, 2019), further reinforcing the dynamic nature of the model. For both these curvilinear dimensions, the extreme ends are problematic for family functioning, whereas the middle levels are conceptualised as 'balanced'. For example, unbalanced marriages and families have a propensity to be either rigid or chaotic, resulting in a situation where one individual exerts excessive control and leadership, while chaotic families are defined by impulsivity and weak leadership (Olson, 2000). Six sub-dimensions underpin family communication: listening skills, speaking skills, self-disclosure, clarity, remaining on topic, and respect and regard (DeFrain & Asay, 2007b). Hence, the Communication dimension encompasses qualities of empathy, feedback and positive interaction.

Three key hypotheses developed from the Circumplex Model. Firstly, balanced couples and families tend to operate better and hence are happier and more successful than unbalanced systems. Secondly, balanced couples and families display more affirmative communication in contrast to unbalanced systems. Finally, balanced couples and families are more efficient at altering their levels of cohesion and flexibility to cope with stress and change, as compared to unbalanced systems (Olson, Waldvogel & Schlieff, 2019).

The constructs of cohesion, flexibility, and communication have been defined in a variety of different ways (Doherty & Hovander, 1990), but according to Olson, Waldvogel and Schlieff (2019), the significance of these dimensions has been consistently recognised in studies and seen as essential to understanding and supporting family systems. Table 2.2 reports these studies and provides evidence of research, which supports their assertion.

Table 2.2

Theoretical models using cohesion, flexibility and communication.

	Cohesion	Flexibility	Communication
Beavers & Hampson (1990)	Stylistic dimension	Adaptability	Affect
Benjamin (1977)	Affiliation	Interdependence	
Epstein et al. (1993)	Affective involvement	Behavior control Problem solving	Communication affective responsiveness
Gottman (1994)	Validation	Contrasting	
Kantor & Lehr (1975)	Affect	Power	
Leary (1975)	Affection hostility	Dominance submission	
Leff & Vaughn (1985)	Distance	Problem solving	
Parsons & Bales (1955)	Expressive role	Instrumental role	
Reiss (1981)	Coordination	Closure	
Walsh & Olson (1989)	Connectedness	Flexibility	Communication

Note. From (Olson, Waldvogel & Schlieff (2019, p. 201) Circumplex Model of Marital and Family Systems: An Update.

2.4.2 Integration of the Family Strengths Model with the Family Circumplex Model

DeFrain and Asay (2007b) combined the concepts from both the Family Circumplex Model and the International Family Strengths Model, to demonstrate their compatibility, which is illustrated in Table 2.3 below.

Table 2.3

Integration of the international family strengths model and the circumplex model

Family Circumplex Model

(3 Dimensions)

	1. Family Cohesion	**2. Family Flexibility**	**3.Family Communication**
International Family Strengths Model (6 qualities of 'strong' families)	Commitment	Successful management of stress and crisis	Appreciation and affection
	Enjoyable Time Together	Spiritual well-being	Positive communication

The top row in the table shows the three dimensions of the Circumplex Model integrated with the corresponding six dimensions of the International Family Strengths Model below them. For example, Family Cohesion is integrated with Commitment and Enjoyable Time Together. Similarly, Family Flexibility is integrated with Successful management of stress and crisis and Spiritual well-being.

So, there is compelling evidence that the Family Strengths Model can be integrated with the Circumplex Model. Hence, there is cross validation of the findings of two, highly refined models, despite their different methodological origins. This further strengthens the validity of the Family Strengths Model as a theory of how strong families function, and from which a scale that accurately measures family wellbeing can be derived.

2.5 The Family Strengths Model: connection and compatibility with family wellbeing and theories of family wellbeing and functioning

The focus of this thesis was the development and validation of a scale to measure family wellbeing (The Strathclyde Family Wellbeing Scale), by using the Family Strengths Model (Stinnet & DeFrain, 1985). It is therefore necessary to demonstrate the connection between family wellbeing and family strengths. This connection was made explicit by noting that "Family strengths are those relationship qualities that contribute to the emotional health and well-being of the family" (DeFrain & Stinnett, 2002, p. 637). However, Dunst (2021) noted that there was relatively small empirical evidence that showed a connection between the existence of different qualities of strong families and different dimensions of well-being. Consequently, Dunst (2021) conducted a meticulous meta-analytic investigation of the relationships between different dimensions of family strengths and personal and family well-being.

On the other hand, there is clear evidence of the similarity of qualities of strong and healthy families, which have been identified by different researchers in the field. These are illustrated in Table 2.4 below.

Table 2.4

Types of family strengths identified by noted experts as the qualities of strong families

Strong Families (Otto, 1962)	Strong Families (Stinnett & DeFrain, 1985)	Healthy Families (Curran, 1983)
Strong families have the ability to:	**Strong families have these qualities:**	**Healthy families do the following:**
Provide for the needs of a family	Commitment to family well-being	Communicate and listen
Be sensitive to family member needs	Spending time together as a family	Affirm and support one another
Communicative positively	Family member appreciation one another	Teach respect for others
Provide support and security	Positive communication among family members	Develop a sense of trust
Maintain growth-producing relationships	Spiritual wellness that includes love and compassion	Have a sense of play and humor
Create responsible community relationships	Effective coping strategies	Exhibit a sense of shared responsibility
Grow with and through children		Teach a sense of right and wrong
Engage in self-help and accept help		Have established rituals and traditions
Perform family roles flexibly		Establish a balance of family member interactions
Promote family unity and cohesion		Have a shared religious core
		Respect the privacy of one another
		Foster family time communication
		Share leisure time
		Admit to and seek help when needed

Note: The qualities of strong families are abbreviated descriptions of each expert's lists of family strengths.

Note. From (Dunst, 2021, p211) A meta-analytic investigation of the relationships between different dimensions of family strengths and personal and family well-being.

Table 2.4 confirms the assertion that "researchers around the world have found remarkable similarities in families in different cultures. Families that describe themselves as strong commonly share a number of broad qualities or traits" (p. 639). (DeFrain & Stinnett, 2002). This is all the more remarkable given the different methodologies used to identify the qualities of strong families and reinforces the validity and credibility of the Family Strengths Model (Defrain & Stinnet, 1985).

2.5.1 The relationship between family wellbeing and family strengths

A range of scales have been developed to measure the qualities of strong families Dunst (2021), including the Family Functioning Style Scale (Deal, Trivette, & Dunst, 1988). While conducting the meta-analytic review, Dunst (2021), identified 33 studies, which used the Family Functioning Style Scale (FFSS) and found evidence to connect family strengths to personal, family, and child well-being. The 33 studies were extensive, involving 12 countries and more than 7000 participants, which included biological parents, foster parents, adoptive parents, graduate students, and adolescents. Hence, there is robust evidence of a link between family strengths and family wellbeing.

The independent variable was the total FFSS score, and the findings were meta-analyzed to explore the effect sizes between the total family strength scores and the different types of well-being (Dunst, Serrano, Mas, & Espe-Sherwindt, in press). The dependent variables comprised five dimensions of well-being: Personal well-being (e.g., Abidin, 1997; Bradburn, 1969), personal belief appraisals (e.g., Gibaud-Wallston & Wandersman, 2001), positive parenting practices (e.g., Buri, 1991; Groza, Ryan, & Cash, 2003), family well-being (e.g., H. I. McCubbin, Comeau, & Harkins, 1981; Summers et al., 2005), and child well-being (e.g., Achenbach & Ruffle, 2000; Epstein & Sharma, 1998).

The effect size between family strengths and well-being were based on the weighted average correlations between the total FFSS scores and each dimension of well-being. Family strengths were connected to each dimension of well-being with a range of between r = .26 (95% CI = .18, .33, p = .0000) for child well-being and r = .54 (95% CI = .43, .63, p = .0000) for family well-being. The findings demonstrated that family strengths were linked to well-being confirming the hypothesis of DeFrain and Stinnett (2002b) and others (e.g., Greeff & le Roux, 1999; Lingren et al., 1987). They were also comparable to findings in other meta-analyses of strengths-related family functioning measures (e.g., Leeman et al., 2016; Van Schoors et al., 2017). Hence, there is robust evidence of a link between family strengths and family wellbeing, based on strong, detailed research results.

2.5.2 Compatibility with definitions and theories of family wellbeing and family functioning

Dunst (2021) deepened the search for empirical evidence of the link between family strengths and family wellbeing by analysing 14 of the 33 studies in the meta-analysis to identify the effect sizes between different family strengths dimensions and both parent and family well-being. The 14 studies consisted of 3,491 participants, carried out in 10 countries.

The results revealed that each of the family strengths dimensions was significantly related to both individual and family well-being. Of particular note, was that the effect size for the relationship between family strengths and family well-being was larger than that for personal well-being. Analyses of the between type of family strengths dimension showed that the effect size between family competence and personal and family well-being was smaller than those for each of the other family strengths dimensions. The results are reported below.

The mean effect size for the connection between family strengths and personal well-being was r = .28, 95% CI = .25, .31, Z = 18.00, p = .0000, and the mean effect size for the connection between family strengths and family well-being was r = .44, 95% CI = .38, .48, Z = 16.19, p = .0000. The comparison between type of well-being comparison was significant, QB = 24.25, df = 1,80, p = .0000, suggesting that the connection between family strengths and personal wellbeing and family wellbeing constructs were different. The effect size for the relationship between family strengths and family well-being was greater compared to the size of effect between family strengths.

The results confirmed the hypothesis that different dimensions of family strengths are key predictors of personal and family well-being, and the strength of the association between family strengths and well-being was different between the five family strengths dimensions Dunst (2021). Hence, this rigorous meta-analytic investigation of the relationships between different dimensions of family strengths and personal and family well-being (Dunst, 2021), provided robust evidence of a strong relationship between family strengths and family wellbeing. Consequently, the aim of this thesis: to develop and validate a scale to measure family wellbeing (The

Strathclyde Family Wellbeing Scale), by using the Family Strengths Model (Stinnet & DeFrain, 1985), is strongly supported.

Following on from the identification of empirical evidence linking qualities of strong families and different dimensions of well-being (Dunst, 2021), there is still the complex issue of defining wellbeing (Dodge, Daly, Huyton & Sanders, 2012). They argue that the focus has largely been on dimensions of wellbeing, which is reflected in 2.4.2, rather than on definition that is recognised 'as a complex, multi-faceted construct that has continued to elude researchers' attempts to define and measure' (Pollard & Lee, 2003, p. 60). How does the Family Strengths Model (Stinnet & DeFrain, 1985) fit with a recognised definition of family wellbeing?

Well-being encompasses assets, strengths, and other positive qualities (Frisch, 2000; Keyes, 1998), not just a lack of dysfunctionality. This definition resonates well with the Family Strengths Model (Stinnet & DeFrain, 1985), and the six qualities of strong families they identified, and their assertion that: ''By looking only at a family's problems and a family's failings, we ignore the fact that it takes a positive approach to be successful. In the case of a family in crisis, professionals sometimes seem to spend so much time focusing their fascination on the intricate details of the problem that they forget that problems are solved by a family using its own strengths effectively'' (DeFrain & Asay, 2007a, p. 295).

Family wellbeing has also been defined and derived from the family resilience framework, (Walsh, 2015), where family well-being is defined by three central processes:

(a) communication (clear information, emotional sharing, collaborative problem-solving, dyadic and family coping),

(b) organization (adaptability, connectedness, and access to social and economic resources)

(c) belief systems (meaning making, hope, and spirituality).

(Prime, Wade and Browne, 2022, p. 634 in Risk and Resilience in Family Well-Being During the COVID-19 Pandemic)

'Communication' and 'Belief systems' map directly on to two of the six qualities of strong families: *Positive Communication* and *Spiritual Well-Being*, and

their sub-qualities in the International Family Strengths Model (DeFrain & Asay, 2007b). While 'Organisation' articulates with the quality of The *Ability to Manage Stress and Crisis Effectively.* Consequently, the International Family Strengths Model is highly compatible with at least two contemporary definitions of wellbeing, with the latter also directly defining family wellbeing.

What about compatibility with two historic, primary approaches to defining wellbeing, that have consistently been debated: the hedonic tradition, which emphasised constructs such as happiness, positive and low negative affect, and satisfaction with life (e.g., Bradburn, 1969; Diener, 1984; Kahneman, Diener, & Schwarz, 1999; Lyubomirsky & Lepper, 1999); and the eudaimonic convention, which stressed positive psychological functioning and human development (e.g., Rogers, 1961; Ryff, 1989; Waterman, 1993). The six qualities of strong families, *(Appreciation and Affection, Commitment, Positive Communication, Enjoyable Time Together, The Ability to Manage Stress and Crisis Effectively, Spiritual Well-Being)* have been repeatedly discussed and expanded upon (Stinnet & DeFrain, 1985; Stinnet & DeFrain, 1988, DeFrain, 2002; DeFrain & Asay, 2007a) to include sub-qualities of strengths and explain how they underpin and define wellbeing from a family perspective. It is argued, they may also be applied to the hedonic and eudaimonic traditions, even though they refer to individual wellbeing.

For example, the quality of *Appreciation and affection*, is explained as members of strong families caring deeply for one another, and consistently and explicitly communicating that sentiment to each other (DeFrain & Asay, 2007a). Such a quality, expressed by the family individually or collectively to other members of the family, would almost certainly boost happiness and positive affect, as encapsulated by the hedonic viewpoint. However, it is argued that it would also impact positively on psychological functioning and development, following the eudaimonic approach. The other qualities may also be similarly, applied to both traditions.

However, the majority of researchers now believe that wellbeing constitutes a multi-dimensional construct (e.g., Diener, 2009; Michaelson, Abdallah, Steuer, Thompson, & Marks, 2009; Stiglitz, Sen, & Fitoussi 2009). Perhaps this is reflected in the view that what binds all family strengths together is mutual awareness of

positive emotional bonds, resulting in strong families feeling good about each other and supportive of each other's well-being (DeFrain & Asay, 2007a).

Continuing the critique, how well does the Family Strengths Model articulate with the concept and classic theories of wellbeing and family functioning?

Family functioning is often defined as relational processes within a family (Walsh, 1998). Hence, it describes the mechanism by which a family operates successfully (Patterson, 2002). Trivette, Dunst, Deal, Hamer, and Propst (1990) stress how essential it is to understand and evaluate family strengths and then offer support to strengthen family functioning, particularly for practitioners in the early years. This suggests that family functioning and family strengths are closely interlinked and interdependent concepts. This assertion is reinforced, given that families have a range of strengths and capabilities that characterise how their family functions, which in turn shape their development and progress (Trivette, Dunst, Deal, Hamer & Propst, 1990).

The International Family Strengths Model (DeFrain & Asay, 2007c) articulates strongly with the concept of family functioning described above. The six dimensions of strong families *(Appreciation and Affection, Commitment, Positive Communication, Enjoyable Time Together, Ability to Manage Stress and Crisis Effectively, Spiritual Well-Being)* are clearly linked to relational processes within the family. It is suggested that a 'strong' family will necessarily possess a strong mechanism to function successfully. However, does the model 'fit' with a classic theory of human development?

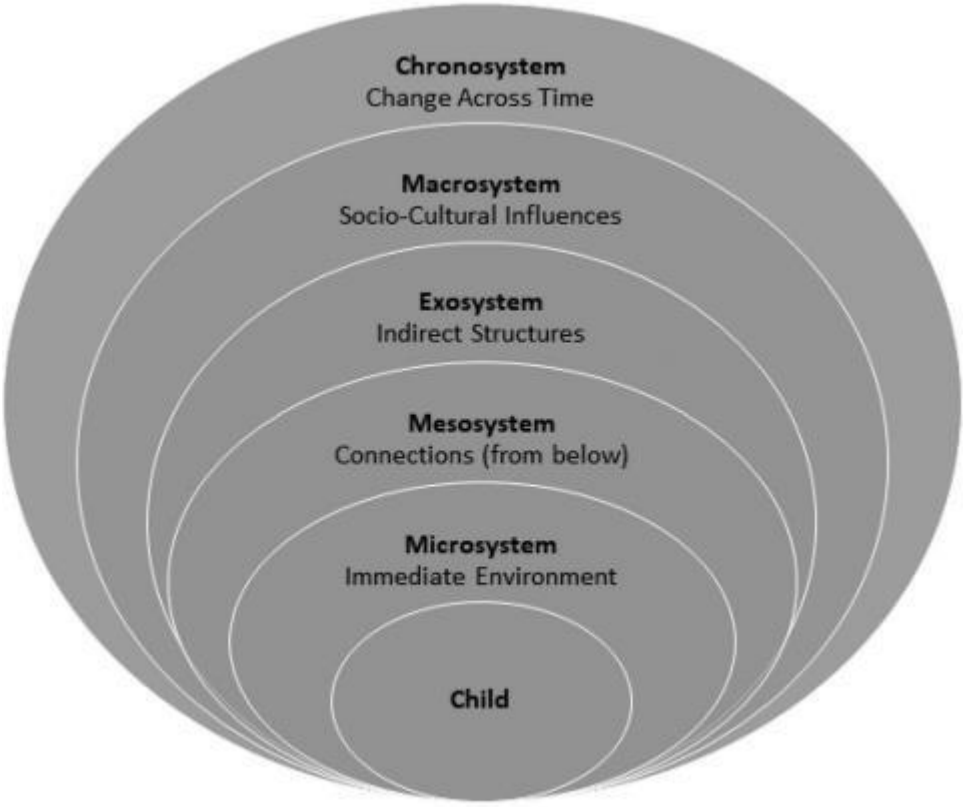
Bronfenbrenner (1979) developed the Ecological Model, which posited that humans can be viewed as located in various nested systems, and subsequently development is derived from the complex interactions between individuals and a range of systemic factors that influence each other (Kamenopoulou, 2016). The different systems that Bronfenbrenner proposed are illustrated in Figure 2.1 below.

Hence, children's social development can be conceptualised as incorporated within an array of environments and numerous relationships including the family, school, peers and community and into wider social and economic contexts (Bronfenbrenner, 1979, 1989). The child is located in the centre of these nested systems, which have an impact that is equal and unique in influence and importance

and extend outwards in proximity to the individual (Stormshak & Dishion, 2002). Figure 2.1 below illustrates Bronfenbrenner's Ecological Systems Theory and how individuals are located within these nested systems and the potential impact these systems have on people.

Figure 2.1

Ecological Systems Theory (Bronfenbrenner, 1979)

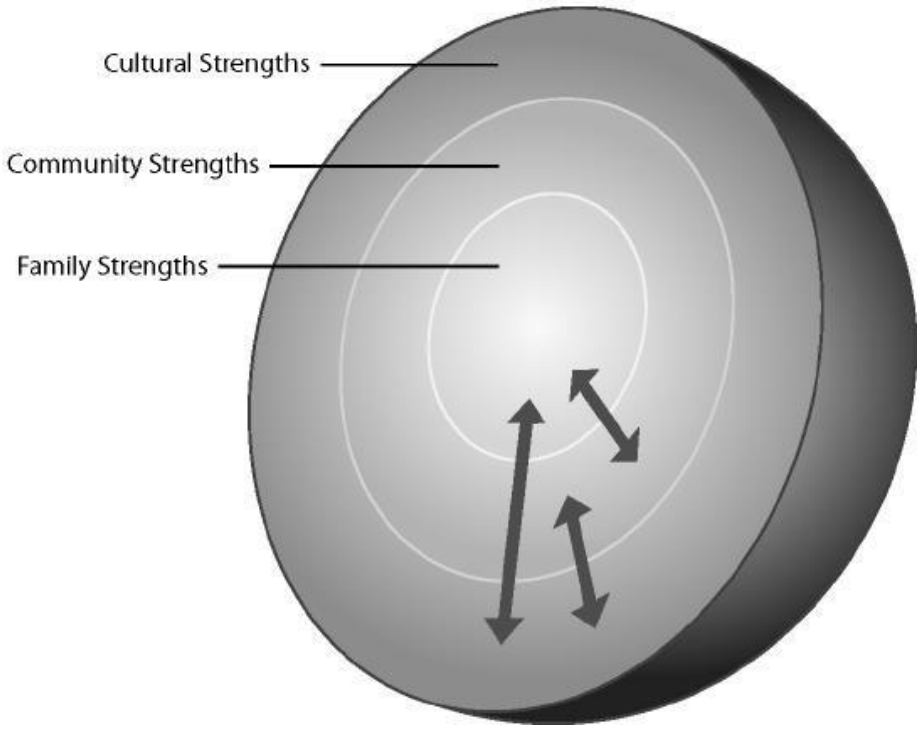


Note. From (Snyder & Duchschere, 2022, p235). Revisiting ecological systems theory: Practice implications for juvenile justice youth. *Translational Issues in Psychological Science*, *8*(2), 234.

Following the development of the International Family Strengths Model, DeFrain and Asay (2007b) explicitly referenced Ecological Systems Theory by exploring the integration of family, community and cultural strengths and how they combined and mutually influenced each other. They posit that nested systems (Bronfenbrenner, 1979) can visually capture the three areas of strengths with family strengths in the centre, then moving outwards to the broader cultural context. The three circles have depth as well as interaction, highlighting the different levels of interaction and complexity of their interface. (see Figure 2.2).

Figure 2.2

Family Strengths and Ecological Systems Model



Note. From Defrain and Asay (2007b, p461). Epilogue: A strengths-based conceptual framework for understanding families world-wide. *Marriage & Family Review*, *41*(3-4), 447-466.

Defrain and Asay (2007b) cite evidence to support the integration of the International Family Strengths Model with an ecological model, from a study they developed involving 43 distinguished professionals from 18 countries, reporting on the challenges families encountered and how they employed their strengths to tackle these problems. They used the International Family Strengths Model as a template and mapped the six dimensions on to the family strengths reported by the researchers. For example, families across the globe displayed their appreciation and affection (the first dimension) in different ways. In New Zealand, Maori families "exude a quality known as 'aroha'–or warm love, while" Koreans talk about "affection (love) and affinity, expression of positive feeling and gratitude and awareness of the family as the psychological nest." (p452, Epilogue: A Strengths-Based Conceptual Framework for Understanding Families World-Wide, Defrain & Asay (2007b).

An international example of the Meso-system and Exo-system cited in the study, was social services in China, where the researchers reported that, "Parents, schools, and communities work closely together to set up programs that ensure the proper development of children today." (p455, Epilogue: A Strengths-Based Conceptual Framework for Understanding Families World-Wide, Defrain & Asay (2007b).

The methodology for this study seemed qualitatively rather loosely structured, based on subjective reports, albeit from eminent researchers and within the parameters of the six dimensions of family strengths. However, Defrain & Asay (2007b) explicitly acknowledged that drawing conclusions about families on a global level was extremely difficult. Nevertheless, they claimed that evidence from decades of international studies of strong families, confirmed that the qualities of strong families are noticeably similar, regardless of culture, and illustrated this in detail by collating examples of studies. Table 2.6 provides details of these studies.

TABLE 2.6

Dimensions of family strength as delineated by prominent researchers

Theorists and Countries	Dimensions
Beavers & Hampson (1990). U.S.A.	Centripetal/centrifugal interaction, closeness, parent coalitions, autonomy, adaptability, egalitarian power, goal-directed negotiation, ability to resolve conflict, clarity of expression, range of feelings, openness to others, empathic understanding
Billingsley (1986). U.S.A.	Strong family ties, strong religious orientation, educational aspirations/achievements
Curran (1983). U.S.A.	Togetherness, respect and trust, shared leisure, privacy valued, shared mealtime, shared responsibility, family rituals, communication, affirmation of each other, religious love, humor/play
Epstein, Bishop, Ryan, Miller, & Keitner (1993). Canada.	Affective involvement, behavior control, communication
Geggie, DeFrain, Hitchcock, & Silberberg (2000). Australia.	Communication (open, positive, honest, including humor), togetherness, sharing activities, affection, support, acceptance, commitment, resilience
Kantor & Lehr (1974). U.S.A.	Affect, power
Kryson, Moore, & Zill (1990). U.S.A.	Commitment to family, time together, encouragement of individuals, ability to adapt, clear roles, communication, religious orientation, social connectedness
Mberengwa & Johnson (2003). Botswana.	Consensus as a means of settling differences, anger management, concern for the welfare of one's kin, valuing their culture, respect toward others, *kgotla* (community development associations) for strengthening neighborhoods
Olson, McCubbin, Barnes, Larsen, Muxen, & Wilson (1989); Olson & DeFrain (2006); Olson & Olson (2000). U.S.A.	Strong marriage, high family cohesion, good family flexibility, effective coping with stress and crisis, positive couple and family communication
Otto (1962, 1963). U.S.A.	Shared religious and moral values; love, consideration and understanding; common interests, goals and purposes; love and happiness of children; working and playing together; sharing specific recreational activities
Reiss (1981). U.S.A.	Coordination, closure
Sani & Buhannad (2003). United Arab Emirates.	Patriarchal family structure; family-arranged marriages; gender-based rights, responsibilities and privileges; strong emotional family bonds (*muwada*); extended family (*dhurriyah*); living with or next extended family members; frequent consultation; elders as role models and advisors; crises are tests from Allah; Islamic beliefs (*taqwa*) and practices provide optimal guildeines; collectivism over individualism; the government is supportive of individual, couple and family well-being
Stinnett, DeFrain, & colleagues (1977, 1985, 2002). U.S.A.	Appreciation and affection, commitment, positive communication, enjoyable time together, spiritual well-being, effective management of stress and crisis
Xia, Xie, & Zhou (2004); Xie, DeFrain, Meredith, & Combs (1996); Xu, & Ye (2002). China.	Togetherness and time together across three generations; love, care, and commitment; communication; family support; spirituality (at peace with nature, at peace with oneself, at peace with others, at peace with the world); family oriented and harmonious
Yoo (2004); Yoo, DeFrain, Lee, Kim, Hong, Choi, & Ahn (2004). Korea.	Respect, commitment, appreciation and affection, positive communication, sharing values and goals, role performing, physical health, connectedness with social systems, economic stability, ability to solve problems

Note. From Defrain and Asay (2007b, p. 450) Epilogue: A Strengths-Based Conceptual Framework for Understanding Families World-Wide. *Marriage & Family Review, 41*(3-4), 447-466.

2.6 Summary

This chapter critiqued the Family Strengths Model (Stinnet & DeFrain, 1985), primarily to assess its robustness as a platform on which to construct a scale to measure family wellbeing, and to adapt the American Family Strengths Inventory (DeFrain & Stinnet, 2008), which was derived from the model. This literature review examined the origins of the model, the replication of findings in other studies on which it was based and how it evolved over time. The model was compared with the Circumplex Model of Marital and Family Systems (Olson, Waldvogel & Schlieff, 2019), and the transition in terminology from family strengths to family wellbeing was explored by reference to a meta-analytic investigation of the relationships between different dimensions of family strengths and personal and family wellbeing (Dunst, 2021. Finally, the compatibility of the model with theories of family wellbeing and functioning, such as Ecological Systems Theory (Bronfenbrenner, 1979), was evaluated.

Chapter 10 will discuss this critique in more detail. The next chapter draws on some of the knowledge obtained from this literature review and focuses on the context in which the proposed development of the Strathclyde Family Wellbeing Scale was developed.

CHAPTER 3 CONTEXT OF THE DEVELOPMENT OF THE FAMILY WELLBEING SCALE

Introduction

This section sets out the aims of the study and the context in which the Strathclyde Family Wellbeing Scale was developed, as well as the purpose and importance of measuring family wellbeing. This is illustrated by reference to selected studies, which highlight the influence of family functioning on family wellbeing and the challenges that families face. The studies also have a robust theoretical and empirical base. Satisfaction with family life is a key factor in measuring family wellbeing (Rudolph & Zacher, 2021). Hence, understanding how a family functions is necessary to explore and measure their levels of wellbeing. Indeed, evidence exists demonstrating a positive correlation between family cohesion, communication, and overall levels of family functioning (Poff et al., 2010). Consequently, the study: *Typologies of Family Functioning and Children's Adjustment During the Early School Years* (Sturge-Apple, Davies & Cummings, 2010), is analysed because it is guided by family systems theory and provides insight into how families operate, their potential categorisation and the context in which family wellbeing is measured.

How families function is explored further, in a stressful context, by examining how the International Family Strengths Model (DeFrain & Asay, 2007b) was applied via implementation of a strength-based approach (Asay, DeFrain, Metzger & Moyer, 2015), to mitigate violence in families. The current study took place in the unique context of the global Covid-19 pandemic, and the impact of stress on family wellbeing is investigated again by reviewing *Risk and Resilience in Family Well-Being During the COVID-19 Pandemic* (Prime, Wade & Browne, 2020). A common theme, which unites all of the papers discussed is the application of theoretical models to family functioning, including family stress theory, family systems theory and the international family strengths model. Consequently, there is a brief introduction to the key principles of family systems theory, because its principles can be identified in all the papers, before the critique and synthesis of relevant theoretical perspectives that underpin family functioning and wellbeing.

Finally, Scottish Government policies are discussed, focusing on the 'Growing Up in Scotland' (GUS, 2005) study and the Whole Family Wellbeing Fund

(Scottish Government, 2022). Local government policy is discussed, focusing on the development of services such as the Family First Service in Council X, which piloted the Strathclyde Family Wellbeing Scale during the development phase and operates on an early intervention basis to support family wellbeing.

3.1 Aims of this study:

The aims of this study are to:

1. Explore and determine the underlying dimensions of the Strathclyde Family Wellbeing Scale (SFWS) using Principal Components Analysis (PCA) / Principal Axis analysis.
2. Investigate the utility of the Strathclyde Family Wellbeing Scale using factor scores from the Principal Component Analysis as a measure of outcome and impact and as a measure of its utility to measure outcome and impact of family-based interventions.
3. Investigate further the validity of the scores derived from the Strathclyde Family Wellbeing Scale by cross-validating findings with the pilot sample of families and the Family First Service who will be involved in interviews. Data will be collected by semi-structured interviews and focus groups and analysed by thematic analysis (Braun & Clarke, 2006).

3.2 Family Systems Theory: an overview of key principles

Family psychology is constructed on the principles of systems theory, which postulates that a system is greater than the sum of its parts. A system has properties that cannot be identified merely by investigating its individual components and has a hierarchical structure. (von Bertalanfy, 1969). Systems are also defined by openness and respond actively to feedback from the environment (Cox & Paley, 1997). Hence, families need to be studied from a holistic perspective, recognising the different roles that members have, such as parent/child and how family members respond to stimulation in their environment. It is asserted that family functioning style therefore influences levels of family wellbeing.

Consequently, four key points that define the core aspects of contemporary family theory can be summarised as:

1. The family is configured in a unique format, which establishes the structure for the development of relationships between members.
2. Family interactions are governed by dynamic processes, which are evidenced by repeated styles of communication and behaviour among family members. A change in one relationship will impact on the existing relationships between all members within the family system.
3. Families endeavour to achieve an internal balance or a steady state, a state of homeostasis.
4. Feedback is the mechanism by which the family regulates, which occurs when it responds to an event, followed by a shift in the state of homeostasis. A shift from a state of equilibrium is controlled by either minimising these movements (negative feedback) or by increasing these movements (in situations of transitions, positive feedback) (Kreppner, 2005).

The study discussed in 3.3, *Typologies of Family Functioning and Children's Adjustment During the Early School Years* (Sturge-Apple, Davies & Cummings, 2010) incorporated these principles as the theoretical basis for their research.

3.3 How can family functioning styles be categorised?

Family wellbeing is challenged in homes defined by significant parental conflict, which is associated with an absence of emotional warmth (Sturge-Apple, Davies, & Cummings, 2006). Similarly, excessive discipline and weak boundaries for handling children's behaviour (Lorber & O'Leary, 2005; Stoneman, Brody, & Burke, 1989), are related to fractious parental relationships and difficulties with children achieving developmental milestones (Gonzales, Pitts, Hill, & Roosa, 2000; Sturge-Apple et al., 2006; Webster-Stratton & Hammond, 1999). Thus, how families function is intrinsically linked to family wellbeing and impacts on the future development of children. Therefore, it is necessary to understand how families operate as a unit, in order to develop an effective instrument to measure wellbeing in families.

Sturge-Apple, Davies and Cummings (2010) in *Typologies of Family Functioning and Children's Adjustment During the Early School Years,* investigated family functioning by adopting a pattern-based approach to the classification of families over a range of different contexts. They also explored how family

classification was linked to children's behaviour and presentation outside of the family context. Adopting a methodology that focused on patterns of inter-family behaviour rather than focusing on relationships between individuals or subgroups of family members enhanced the efficacy of the study. It mitigated previous research weakness, which did not take account of research that showed that one to one correspondence in problems across family subgroups did not appear to exist (Erel & Burman, 1995).

This study drew on family systems theory, to give it a strong theoretical base, and had the aim of revealing patterns of family functioning from observations and assessments of relationships between parents, between parent and child, and between both parents and child i.e. a triangulated approach. The study also mapped out the possible consequences of these behaviour patterns in families for children's developmental pathways and presentation in the school environment in the early years. Recruitment to the study was based on parents having a child in nursery and cohabiting for a minimum of 3 years. The sample size ultimately consisted of two-hundred and thirty-four mothers, fathers and pre-school children (129 girls and 105 boys; mean age = 6.0 years, SD = 0.50 at Wave 1). Missing data was accounted for using Full-information maximum likelihood (FIML) and two family outliers were also detected and eliminated (Sturge-Apple, Davies & Cummings, 2010).

The application of family systems theory in this study demonstrated both the theoretical strengths and limitations of systems theory. It highlighted the sophisticated nature of the study, because while it adopted a sound theoretical model as a guide, it did so with a critical eye, by recognising that utilising family systems theory in developmental research designs still presents a significant challenge (McHale, Kuersten-Hogan, & Rao, 2004). For example, Family systems theory encourages researchers to conceptualise child development not just in the context of the parent–child relationship but more holistically, by taking into account wider, shared family experiences within models of family functioning (Sturge-Apple, Davies & Cummings, 2010). Sturge-Apple, Davies and Cummings (2010) suggested there is a conflict between the family systems framework, which frames child development problems within strict parameters of complex inter-family relationships (e.g.,Cowan & Cowan, 2002; McHale, Kuersten-Hogan, & Lauretti, 1996), and the

fact that advanced methods of analysis in studies, such as pattern-based approaches that reflect this theoretical approach, are delayed in their application in this type of research.

However, this study, specifically aimed to apply a pattern-based approach to categorise family types across many contexts within the family and investigate the categorisation of families and how they linked with children's social and emotional development, outside of the family, particularly in the school environment. This study reassessed the three distinct categories of family relationships that have been found by family systems theorists: harmony, disengagement and enmeshment (Minuchin, 1974).

Families that are harmonious or cohesive have clear but appropriately flexible boundaries, that enable children to receive care and support, but which does not destabilise established routines and rules adhered to by others in the family (Cox & Paley, 1997). Cohesive families and the subsystems within it are marked by strong emotional bonds and good relationships. Consequently, any discord is addressed effectively without damaging inter-family relationships. However, disengaged families have rigid rules exhibited by apathetic, emotionless and uncaring relationships, which makes communication problematic. Individuals in the family tend to operate independently rather than being connected to a larger entity. Enmeshed families have weak, unstable rules where family roles are inconsistent and unclear. Parents and their children do not have an appropriate understanding and regard for each other's responsibilities, resulting in disordered relationships. Care and affection are present in family relationships but attaining them can result in antagonism and conflict between subsystems within the family, and individual and psychological development is limited (Sturge-Apple, Davies & Cummings, 2010).

The study drew not only on the original Minuchin (1974) study but built on the findings of Johnson (2003), which also found three types of family classification at the pre-school stage: cohesive, separate, and enmeshed family patterns. These classifications also had predictive power regarding how children would present in the school environment. Consequently, similar methodology was used to assess family functioning style, such as dyadic and triadic relationships within the family. Hence, families participated in specially designed activities to assess relationships between

parents, and between parents and their children, both separately and together as parents.

An extensive battery of established scales was used to measure behaviour outcomes for parents and children. A brief sample includes the Relatedness Scale (Davies, 2002), System for Coding Interactions (SCID) scales (Malik & Lindahl, 1996) and the Iowa Family Interaction Rating (IFIRS) Scales (Melby & Conger, 2001). Detailed information of interrater reliability for independent coding and principal components analysis were reported for all measurements. For example, Parental intrusiveness was measured using the IFIRS Scales. Results were reported as intra-class correlation coefficients ranging from .82 and .88 for mothers' and fathers' ratings, respectively. Principal components analysis of mother and father ratings indicated a single factor, accounting for 53% of the variance in scores, and internal consistency in this sample was .71. Consequently, ratings were combined into a single intrusiveness score (Sturge-Apple, Davies & Cummings, 2010).

The findings, as hypothesised by (Sturge-Apple, Davies & Cummings, 2010), confirmed the presence of three fundamental typologies of family functioning comprising: (a) cohesive, (b) enmeshed, and (c) disengaged families. Furthermore, family configurations were linked in different ways to future pathways and problems that children would experience in coping with the school environment. The findings confirmed earlier research by Minuchin (1974) and Johnson (2003), which significantly reinforces the validity of their classifications of types of family functioning. This was a strong study, which employed modern concepts of pattern-based approaches to explore how families function, based on the principles of family systems theory. A comprehensive suite of established scales and statistical techniques, such as principal components analysis, were used to analyse the results. This reflects the methods used in the current study and highlights the value and utility of the aim of developing scales to measure family functioning and wellbeing. It is argued that this valuable typology of families can also be utilised to inform interventions to support family wellbeing.

However, limitations of the study were identified. Despite it being a three-year longitudinal study, (Sturge-Apple, Davies & Cummings, 2010), still regarded this as a relatively brief period, which limited generalisability regarding future

developmental pathways discussed. Notably, they acknowledged that models in their study did not integrate children managing in stressful family systems, which might have shed further light on the connections between family typologies and their adjustment. However, as mentioned in the introduction to this chapter, a stressful family context of domestic violence as explored in *Implementing a Strengths-Based Approach to Intimate Partner* Violence *Worldwide* (Asay, DeFrain, Metzger & Moyer, 2015), is discussed in 3.4 below. A further limitation cited was that the sample did not include especially vulnerable groups, whose style of functioning may have been different to the sample selected in the study.

3.4 How do families function under stress of domestic violence?

The utility of the International Family Strengths Model (DeFrain & Asay, 2007a) was demonstrated once again by its application to an investigation of family strengths, community strengths, and cultural strengths, which were employed by families and individuals to alleviate global family violence. The study: *Implementing a Strengths-Based Approach to Intimate Partner Violence Worldwide* (Asay, DeFrain, Metzger & Moyer, 2015), was extensive consisting of an analysis of 16 countries, including 17 cultures across key cultural centres in the world.

The World Health Organisation, following research on domestic violence in many countries, reported that the incidence of physical or sexual violence among partners ranged from 15 to 71% among 24,097 women in 10 countries (Garcia-Moreno et al. 2006). The level of global female mortality due to sustaining injuries by a current or former partner was fifty per cent (McCue 2008). Clearly, family functioning and wellbeing is enormously impacted by such events. Indeed, the situation is further exacerbated, for example, due to lack of reporting or failure to tackle domestic violence by the authorities (Asay, DeFrain, Metzger & Moyer, 2015), and cultural issues, where such violence is tolerated as acceptable (Adams 2004). Such insidious violence makes the need for early intervention and prevention in families an imperative. Measurement of levels of family wellbeing may assist in counteracting such outcomes by signalling in advance that there is a serious level of aggression and lack of nurture in the family, prompting appropriate action to be taken by relevant services.

According to Asay, DeFrain, Metzger and Moyer (2015), research in 38 countries has found significantly high levels of commonality among themes of family strengths. As stated previously, these consist of six major qualities of strong families: *showing appreciation and affection for each other; commitment; positive communication; spending enjoyable time together; sharing a sense of spiritual well-being and values; and the ability to manage stress and crisis effectively*.

DeFrain and Asay (2007b) assert that a helpful way to understand families from a world perspective is to link family strengths, community strengths, and cultural strengths and show how they employ these strengths to address the difficult situations they encounter. Consequently, their research of families in 18 countries, resulted in the International Family Strengths Model, explained in chapter 2, which integrated these three levels of strength. Community strengths comprise of robust social, educational and spiritual services that can be drawn upon by families. Cultural strengths are defined in more complex terms as a combination of shared values and history as well as a sound political and economic system (Asay, DeFrain, Metzger & Moyer, 2015).

The qualitative methodology used by (Asay, DeFrain, Metzger & Moyer, 2015) consisted of 50 academics and practitioners with expertise in family violence, drawn from countries included in the study, who then conducted case studies. They interviewed a minimum of one person each, who had succeeded in overcoming dreadful circumstances in their lives, and focused on incidences of violence in the family and how it was resolved. The person's experience of violence was investigated from different standpoints by triangulating it with the family, community and native culture. Investigators also adopted a strengths-based viewpoint to explore research findings on intimate partner violence at a macro-level in their own country. Their reports were then compiled for analysis enabling hypotheses to be developed. Intimate partner violence was defined as physical and sexual violence, and also mistreatment, for example, bullying or oppression.

The authors claimed deploying qualitative methodology, in the form of grounded theory and case studies, in this research was most suitable given the subject matter. Grounded theory aims to develop a theory connected to the particular focus of the research, thus it is 'grounded in the data collected during the study, especially

the behaviour and interactions of individuals involved (Robson, 2002). The authors considered a cross-country quantitative meta-analysis, but nevertheless, concluded that the nature of the data collected was too difficult to present in this way (Asay, DeFrain, Metzger & Moyer, 2015). However, their approach is highly appropriate, given the particularly rich personal and emotional experiences that were collated, making quantitative methods less amenable for data collection, even though grounded theory can be used in quantitative research as well (Strauss and Corbin, 1998). Furthermore, earlier research that led to the development of the International Family Strengths Model (DeFrain & Asay 2007a) was employed to explore universal intimate partner violence. This is compatible with grounded theory, which also incorporates hypothesising about data collected, followed by adjustment of existing theory in line with new evidence obtained (Strauss & Corbin, 1990).

The procedures followed in grounded theory include repeated field visits to collect data, interspersed with analysis and categorisation of core features until saturation is achieved and a theory emerges (Robson, 2002; Coolican, 2004). In this study, the research from all participating countries was scrutinised, by combining data from literature searches of government policy and family violence, with interviews with agencies and case studies, followed by collaboration and codification of emerging themes (Asay, DeFrain, Metzger & Moyer, 2015). Additional confirmation of findings was ensured by returning reported conclusions to all the researchers in the 16 countries for further checking and correction where necessary. It is reasonable to conclude that a suitable methodology was selected, and appropriate procedures were closely followed in this study, ensuring results were validly obtained.

The findings reported in this paper were extensive and are summarised in Table 3.1. Given that the review of this study is to demonstrate the utility of the International Family Strengths Model (DeFrain & Asay 2007a), the focus is mainly restricted to consideration of findings and limitations related directly to the model. Analysis showed that individual strengths, did not just arise from within family strengths as assumed by the authors, but closely predicted the capacity of survivors of violence to overcome their situation and are thus crucial to mitigating family violence (Asay, DeFrain, Metzger & Moyer, 2015). Consequently, they concluded

individual strengths should be clearly distinguished from family strengths as a means of responding to family violence (see Table 3.1).

Table 3.1

Individual, family, community, and cultural strengths: tools for an optimal response to family violence

Individual strengths • Self-respect and grace under pressure • Survival skills (e.g., courage, resourcefulness, resilience, tenacity, planning for safety) • Strategic thinking (e.g., problem-solving skills, recognizing available resources, the ability to follow through) • Commitment to her family • Being a loving parent (e.g., willingness to sacrifice for her children, and protect them) • Good ethical values and an understanding of social justice • Spiritual well-being (hope and a vision for change)	Family strengths • Appreciation and affection for each other • Commitment • Positive communication • Enjoyable time together • A sense of spiritual well-being and shared values • The ability to manage stress and crisis effectively
Community strengths • A supportive social environment that values families • An effective educational delivery system • Religious communities for families seeking this kind of support • Family-service programs and coordinated responses • A safe, secure and healthful environment • Accountability for perpetrators	Cultural strengths • A rich cultural history that gives meaning, direction, and inspiration for dealing with life's challenges • Shared cultural meanings (e.g., symbols, folk wisdom) that build a sense of common identity among people • A stable political process • An understanding of society from a global context

Note. From Asay, DeFrain, Metzger & Moyer (2016, p. 356) Implementing a strengths-based approach to intimate partner violence worldwide. *Journal of family violence*, *31*, 349-360.

Cultural strengths were identified as playing a significant role in mitigating intimate partner violence in the family. However, the authors highlighted limitations of the International Family Strengths model due to cultural forces, which conflicted with the application of its principles in cultures where significant gender inequality exists. Nonetheless, the situation was improved by utilising laws and policies established both at home and internationally, such as the United Nations Declaration on the Elimination of Violence Against Women in 1993, (Schubert et al. 2014; Dickey 2014). Economic growth was also a protective factor (Asay, DeFrain, Metzger & Moyer, 2015). Specific examples of community strengths that ameliorated family violence included, *Special Cells* in India, where the community collaborated on issues, or New Zealand where special family courts utilised *therapeutic jurisprudence* specifically to support victims of domestic violence (Dickey 2014).

Family strengths were demonstrated by the collaboration of members to assist individuals subjected to violence, which also gave them hope. For example, 'My youngest sister never stopped calling me' (Metzger & Moyer 2014, p. 210). Individual strengths identified included strategic planning and networking, such as in Korea, where a woman established a support group for victims of domestic violence (Chung and Ok 2014). The authors concluded that mediation, education and empowerment were crucial factors in mitigating family violence, and that families and individuals benefit significantly, if they combined their strengths with helpful communities, allied with positive cultural beliefs (Asay, DeFrain, Metzger & Moyer, 2015).

This was an ambitious study involving 50 researchers from 16 different countries. It is suggested that maintaining consistency of reporting and fidelity to the project aims, would have been a significant challenge, despite strong methodological principles. Limitations cited included, generalisation, even from an international study of this size, because it was not a global project. Additionally, potential researcher bias was cited by the authors in analysing data, and from application of the International Family Strengths Model (DeFrain & Asay 2007a), which significantly influenced the thematic analysis (Asay, DeFrain, Metzger & Moyer, 2015).

In reviewing this paper, it is asserted that the current study, to develop a scale to measure family wellbeing, is supported and validated based on its findings. A family wellbeing scale enables families and individuals, in an objective way, to highlight their concerns, including indirectly, the impact of violence in the family. It is also a tool potentially for use by services to support families and hence is a strength of the community. Finally, the scale is based on cultural values, which recognise the importance of family wellbeing not just to people but to communities and society as a whole.

3.5 How did families function under stress of the Covid-19 pandemic?

The development of the Strathclyde Family Wellbeing Scale took place in the context of a world-wide coronavirus pandemic: Covid-19, which started in the early months of 2020. The impact of the pandemic influenced government policies, both national and local, and also impacted on the lives of families and potentially their wellbeing. The COVID-19 pandemic constituted a severe threat to the well-being of children and families, caused by challenges linked to social upheaval, including economic insecurity, caregiving issues, and stress arising from lockdown restrictions, such as confinement and disruption of routines (Prime, Wade & Browne, 2020).

Evidence from previous crises, such as the Recession in 2007-2009, revealed that protracted economic difficulties result in increases in anxiety, depression, substance abuse, and suicide (Catalano et al., 2011; Phillips & Nugent, 2014). One third of SARS survivors, in Hong, reported mental health difficulties at 3 months and 30 months after the outbreak (Cheng et al., 2004). Similarly, three years following the Ebola epidemic in West Africa, the amount of survivors with mental health difficulties significantly exceeded those that did not have Ebola (Nyanfor & Xiao, 2020).

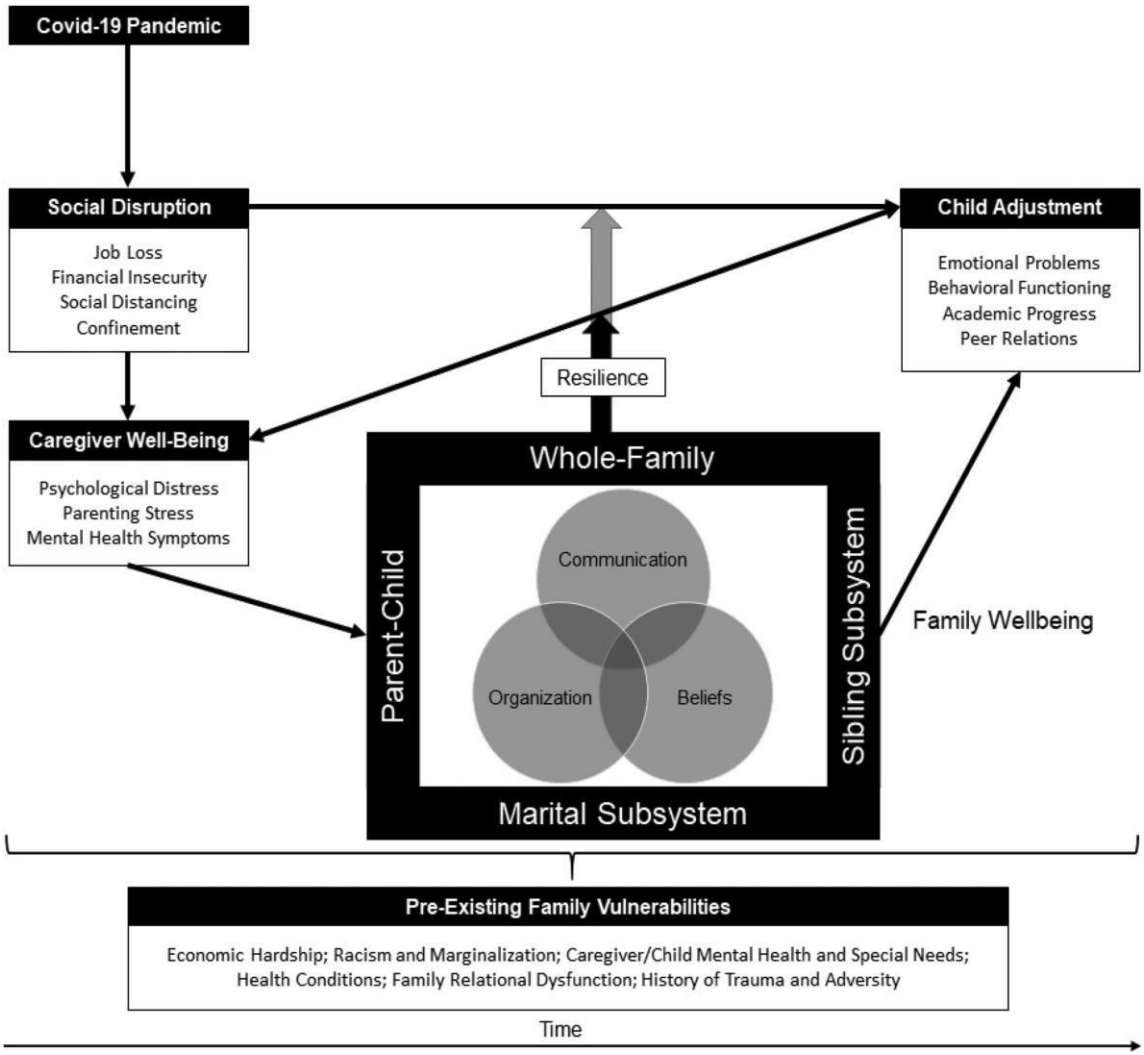
Indeed, the impact on family well-being has not been strictly and accurately measured (Prime, Wade & Browne, 2020), which makes the case for developing a new scale to measure family wellbeing even more timely and important. However, more than a third of families have reported very high levels of anxiety about family stress due to COVID-19-related confinement (Statistics Canada, 2020). Thus, COVID-19 and associated stress factors, such as loss of work and social distancing

requirements, have had a significant effect on mental health and wellbeing in families. Hence, the powerful influence of Covid-19 during the construction of the scale should be considered.

An analysis of risk and resilience within families during the COVID-19 pandemic, focusing on family well-being, was carried out by Prime, Wade and Browne (2020), resulting in the development of a conceptual framework based on systemic models of human development and family functioning. Consequently, the study is especially relevant to this thesis because it demonstrates how the core concepts of systems theories and theories of family functioning, are particularly useful and relevant to family well-being, both in normal circumstances and during emergencies such as the Covid-19 crisis. Hence, it summarises and integrates the content of previous chapters in this thesis on systems theories and theories of family functioning into a framework, which is illustrated in Figure 3.1.

Figure 3.1

Conceptual framework based on systemic models of human development and family functioning



Note. From Prime, H., Wade, M. and Browne, D. T. (2020). Risk and resilience in family well-being during the COVID-19 pandemic. American Psychologist, 75(5), 631-643. http://dx.doi.org/10.1037/amp0000660].

The framework connects social upheaval arising from COVID-19 with child development via a network of parental well-being and family processes, such as organization, communication, and beliefs. The study also took into account family history and family features that increased the likelihood of poor outcomes arising from the pandemic, such as financial problems and other circumstances. The framework was predicated on systemic models of human development and family functioning, including family systems theory (Carr, 2015; Fiese, Celano, Deater-Deckard, Jouriles, & Whisman, 2019), the bioecological model (Bronfenbrenner & Morris, 2006), the family stress model (Conger et al., 2002), and developmental systems theory (Damon & Lerner, 2006). Hence, the proposed risk and resilience framework on family wellbeing (Prime, Wade & Browne, 2020), has a robust theoretical base given that it was constructed on well-established models of human development and family functioning.

The connections between these theoretical models and the framework are explained through the application of five key principles, which further demonstrates the strong links between family systems theory, family functioning and family wellbeing. For example, the first principle recognises the bioecological model (Bronfenbrenner & Morris, 2006), and that child development is shaped by many factors. Factors are both distal and proximal, such as Covid-19 in the case of the former and the social turmoil it causes, and close relationships with others, for the latter, such as family and teachers (Bronfenbrenner & Morris, 2006). The principle is further explained by noting that circumstantial risk "gets inside the family" by changing the interpersonal family relationships (Browne et al., 2015, p. 398). Subsequently, this interference with family well-being "gets under the skin," disturbing crucial psychosocial systems in the developing child, linked to behaviour, cognitive, and emotional development (Hertzman & Boyce, 2010, p. 330). Strong evidence is cited (Repetti, Taylor, & Seeman, 2002), that demonstrates difficult family circumstances impacts badly on children's development, due to stress on family functioning.

The third principle is specifically based on family systems theory (Carr, 2015 Fiese et al., 2019), and the concept that a change in one relationship will impact on the existing relationships between all members within the family system.

Consequently, the negative effects of COVID-19 that impair the functioning of one family member may alter the functioning of all family members. The fourth principle defines family wellbeing by drawing on Walsh's (2015) family resilience framework, whereby family wellbeing is founded on three primary processes, which are likely to be disturbed and changed in many families due to the pandemic. These are:
(a) Communication (clear information, emotional sharing, collaborative problem-solving, dyadic and family coping)
(b) Organisation (adaptability, connectedness, and access to social and economic resources)
(c) Belief systems (meaning making, hope, and spirituality). These processes are purported to be disrupted or altered in many families in the context of the pandemic. (Prime, Wade & Browne, 2020, p. 634).

What are the potential limitations of the risk and resilience framework (Prime, Wade & Browne, 2020) regarding family wellbeing? The framework may be described as theoretically strong but empirically weak. Indeed, it is described as a 'conceptual framework', (p631, Prime, Wade & Browne, 2020), which suggests that no empirical evidence has been collated through application of the framework on a representative sample of families and situations. Hence, the framework has only been built upon a theoretical evidence base, which, while it draws strongly on established theories and research, lacks an empirical evidence base.

Family Stress Theory Family (Hill, 1958; McCubbin & Patterson, 1983), was used as a theoretical framework to explore the impact of Covid-19 and its connection with family well-being and adult mental health after one month had elapsed in the United States (Crandall, Daines, Barnes, Hanson & Cottam, 2021). Family Stress Theory outlines how subjective family meaning making and family assets, influence how stressors lead to outcomes (Crandall, Daines, Barnes, Hanson & Cottam, 2021). *Subjective Family meaning* is defined as, the subjective meaning or effects that the family derives from the emergency such as closer family feelings or increased conflict in the family caused by lockdown restrictions (Crandall, Daines, Barnes, Hanson & Cottam, 2021).

Findings indicated that subjective negative family meaning and effects were linked to increased depression and anxiety. Higher family health resources were

related to reduced depression and anxiety. Family health resources mediated the interactions between COVID-19 loss of work with depression and anxiety (Crandall, Daines, Barnes, Hanson & Cottam, 2021). (Crandall etal, 2021) concluded that stressors linked to COVID-19 had reasonably detectable effects on family meaning making and family health assets, only a month after the pandemic commenced.

The results of this study must be viewed by taking into account limitations, highlighted by the authors, such as sociodemographic factors and a lack of information regarding the levels of participant's family health, depression, and anxiety before the pandemic, which could have influenced responses (Crandall, Daines, Barnes, Hanson & Cottam, 2021). The methodology relied only on quantitative measures, no qualitative measures such as focus groups or interviews were used to cross-validate the results.

However, of particular relevance to this thesis, is the researchers measured family health using the 32-item Family Health Scale (FHS; Crandall et al., 2020), and used the Family Health Scale to develop and validate a new scale to measure Subjective Family Meaning (Crandall, Daines, Barnes, Hanson & Cottam, 2021). The validation process of scales will be examined in more detail in *Chapter 4: Review of scales developed to measure family wellbeing.* The next section considers how families function in Scotland and the challenges they face.

3.6 How do families function in Scotland?

Growing Up in Scotland (GUS, 2005), was launched by the Scottish Government in 2005, supported by ScotCen Research, and is a large-scale longitudinal research project which is currently tracking three cohorts of children totalling about 14000 Scottish children from early childhood and beyond. Data was obtained on Birth Cohort 1: 5,217 children, born in 2004/05; Child Cohort: 2,858 children, born in 2002/03 and Birth Cohort 2: 6,127 children, born in 2010/11. The aim of the study is to collate evidence to assist the Scottish Government and other agencies, in the development and planning of policies and services for children and their families.

The methodology used involves contact with families at regular intervals by trained researchers, to obtain information on a variety of subjects, which includes family circumstances and experiences, child health and development and parenting.

Families were randomly selected based on Child Benefit records obtained from HM Revenue and Customs. They were invited to participate by letter, on a voluntary basis, and were recruited from every Local Authority in Scotland. Ethical approval was obtained by the Scotland 'A' MREC and the NatCen Research Ethics Committee.

Specific details of methodology used have been cited in reports, for example, *Growing Up in Scotland: Birth Cohort 2 Results from the first year* (Scottish Government 2013), interviews of just over an hour were conducted in participants' homes with mothers if possible, by trained interviewers using laptop computers (CAPI – Computer Assisted Personal Interviewing). Interviews were quantitative, comprising mainly closed questions and participants entered their responses directly into the questionnaire. This was carried out over a 14-month period commencing in January 2011. Multivariate regression analysis was employed to analyse the data, which addressed potential confounds regarding a variety of parent and child behaviours and outcomes. It enabled investigation of relationships between outcome variables and many explanatory variables while also controlling for the inter-relationships between each of the explanatory variables.

GUS is an ongoing, extensive, robust study and a wealth of data has been collected. Consequently, just some of the findings are reported to provide a profile of the stress and challenges to family wellbeing encountered by families in Scotland. Tables 3.2 and 3.3 begin this discussion by summarising some statistics obtained from 10 years of the Growing Up in Scotland study, regarding addressing inequalities in families in the early years (Scottish Government 2015).

Table 3.2

Comparison of children in the highest and lowest income quintiles

	Children in Highest income (All figures are %)	**Children in lowest income** (All figures are %)
Mother smoked in pregnancy	8	49
Mother drank alcohol in pregnancy	34	11
Low birth weight	6	9
Not breastfed	19	55
Longstanding illness/Disability by age 3	14	19
Less than good health during first 4 years	12	26
Poor diet at age 5	13	39
Below average vocabulary ability at age 5	20	54
Below average Problem-solving ability at age 5	29	53
High social, emotional or behavioural difficulty at age 8	3	18
Lowest level of life satisfaction at age 8	19	29

Note. From (Scottish Government, 2015, pp 4-6) TACKLING INEQUALITIES IN THE EARLY YEARS: Key messages from 10 years of the Growing Up in Scotland study.

Table 3.3

Comparison of mothers in the highest and lowest income quintiles

	Mothers in Highest income (All figures are %)	**Mothers in lowest income** (All figures are %)
Drinking 5 or more units of alcohol* when child aged 10 months *(on typical drinking day)	20	45
Longstanding illness/Disability during their child's first 4 years	26	47
Poor mental health during their child's first 4 years	6	24
Smoking when child aged 8	7	44
High social, emotional or behavioural difficulty at age 8	3	18
Lowest level of life satisfaction at age 8	19	29

Note. From (Scottish Government, 2015, pp 4-6) TACKLING INEQUALITIES IN THE EARLY YEARS: Key messages from 10 years of the Growing Up in Scotland study.

Tables 3.2 and 3.3 illustrate the inequalities that exist in Scotland linked to family income, and that are likely to impact on family wellbeing. The data supports the policy aim in *The Early years Framework* (Scottish Government, 2008) that: "Children grow up free from poverty in their early years and have their outcomes defined by their ability and potential rather than their family background". (p10). This aim is also captured by Article 27 of the United Nations Convention on the Rights of the Child (UNCRC). Many other Articles are also embedded within the Framework.

Results from the first year of Birth Cohort 2 GUS report (2013) included that 83% of parents said their health visitor was either good or very good at providing useful advice. Both family disadvantage and lack of social support for parenting were independently connected to parental attitudes and domestic arrangements likely to damage effective parenting. Additionally, they were linked to reduced levels of

experiences, which support child development, such as engaging with books/reading stories, reciting nursery rhymes and socialising with other families. The likelihood of relationships between parents and their children being warm was reduced for disadvantaged families. Watching television in disadvantaged families was less likely to be restricted to less than 2 hours per day.

These findings and policies may be interpreted by considering the importance of family strengths, community strengths, and cultural strengths to promote high levels of family wellbeing, discussed earlier in section 3.4 in the study by Asay, DeFrain, Metzger and Moyer (2015). Family strengths, such as 'Positive communication' and 'enjoyable time together' are likely to be weaker in disadvantaged families, evidenced by lack of shared reading activities and socialising with their children. Community strengths are emphasised by recognition of the importance of the role of the health visitor, and cultural strengths are highlighted by policies such as the Early Years Framework (2008), which promotes a culture where children get the best start in life (Scottish Government, 2008). Hence, the development of a robust scale to measure family wellbeing, would enable data to be collected early in family life, which could inform planning and intervention.

While the statistics cited in *Tackling Inequalities in the Early Years* (Scottish Government, 2015), paint a somewhat bleak picture of the threats to family wellbeing, in the same paper, elements are highlighted, which appear to mitigate them by supporting better outcomes or boosting resilience. A home that provides a positive learning environment can encourage cognitive development irrespective of socio-economic context. Promoting parenting skills is a protective factor against the negative effects of hardship, and should be extended to grandparents, given the crucial role they play in many families. These protective factors reflect the principles of family systems theory and the unique, dynamic configurations of families, and that changes even in one relationship potentially affects relationships between everyone in the family.

Hence, the development of a robust scale to measure family wellbeing would enable data to be collected early in family life, thus highlighting aspects that might need support and intervention. Such an instrument would not only support the policies mentioned but also the recently launched Whole Family Wellbeing Fund

(WFWF) (Scottish Government, 2023). The WFWF is a £500 million investment of which £32million was allocated to support Children's Services Planning Partnerships to scale up and provide whole family support services in their areas. WFWF promotes the principle of early intervention and prevention by services rather than when a family is at crisis point. A valid and reliable family wellbeing scale is particularly salient, because it is also compatible with the aim of tracking progress and measurement of outcomes, which is a key aspect of the WFWF.

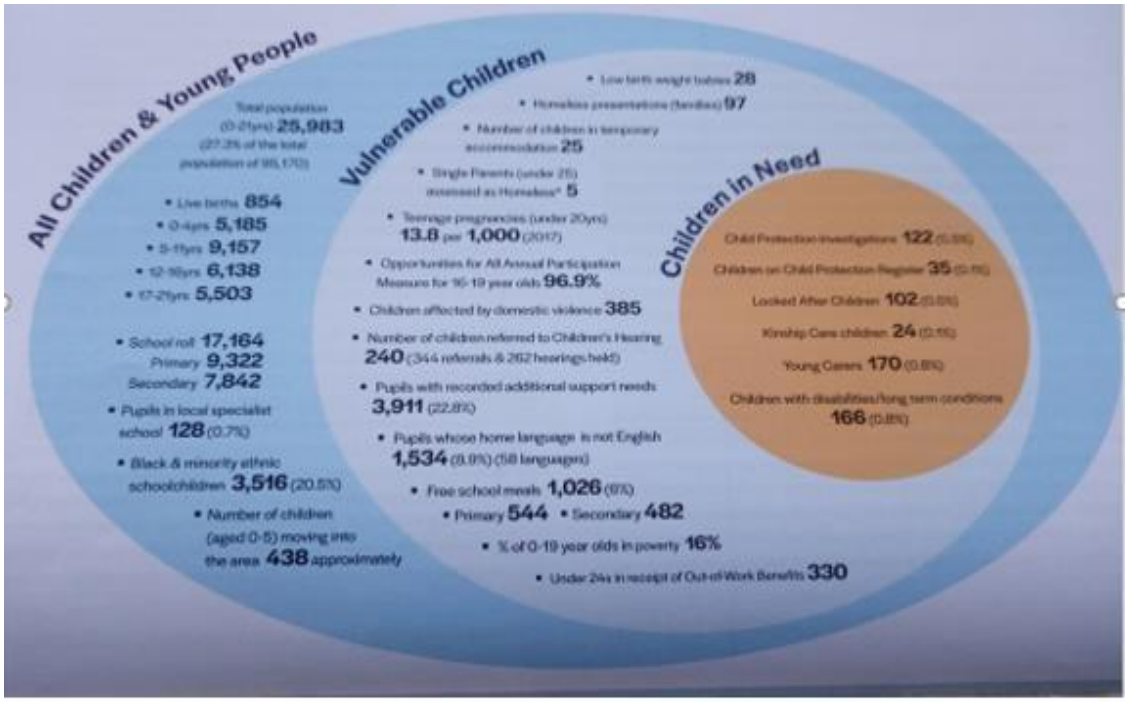
3.7 Support for family functioning in Council X

Council X is a relatively affluent area, with only 9% of the population living in income deprivation, contrasting with Scotland as a whole where 16% live in income deprivation (Shipton & Whyte, 2011). The Scottish Index of Multiple Deprivation (2006) (SIMD) measures relative levels of deprivation across Scotland's communities (statistically referred to as datazones) based on seven indicators: income, employment, education, health, housing, crime and geographic access. The SIMD ranks all of Scotland's datazones from the most deprived (1) to the least deprived (6976). Rankings can be further divided into percentiles (Scotland's Towns Partnership /Economic and Social Development, 2020).

According to the SIMD (https://simd.sco) only 7 out of 122 data zones across Council X are amongst 20 per cent of the most deprived areas in Scotland. Also, people born in Council X have the highest life expectancy rates in Scotland, 84.0 for women and 79.5 for men (Planning for the future, Council X 2022). However, figure 3.2 highlights that threats to family wellbeing certainly exist for some families in Council X, as evidenced by statistics for Child Protection Investigations (122) and children on the Child Protection Register (35). Additionally, poverty is not the sole contributing factor to family wellbeing. Consequently, the International Family Strengths Model (DeFrain & Asay, 2007) and the six qualities of strong families remain highly relevant to those families and indeed to families in general. Hence, the aim of developing and validating a scale to measure family wellbeing continues to be strongly supported.

Figure 3.2

Council X Children's Population at Glance 2018-19/2019-20



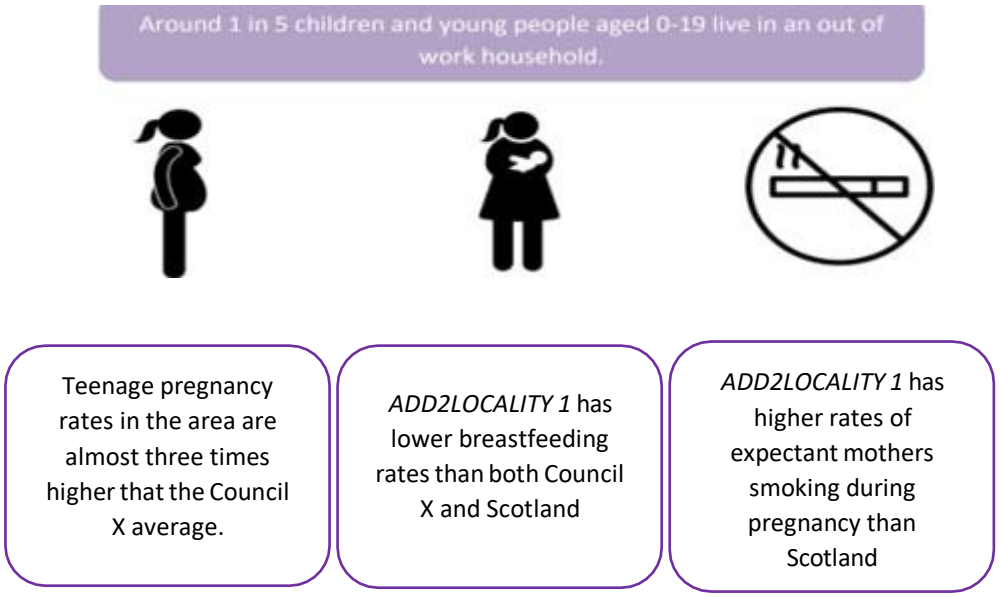
Note. From Council X children and Young People's Services Plan 2020-2023, p16.

However, *LOCALITY 1* is an area in Council X, which can be contrasted to some extent with the overall relative affluence of Council X. The SIMD 2020 reported that 28% of LOCALITY 1's datazones (7 datazones) were among the 20% most deprived areas, whereas 16% (4) were in the least deprived 20%. This indicated that deprivation varies significantly across different parts of LOCALITY 1, suggesting a complex economic profile, which is different from the rest of Council X.

LOCALITY 1 Community Planning Partnership used the SIMD to identify five data zone areas as key areas for locality planning, to address inequalities that were located within a specific geographical community. These areas were grouped together as *ADD2LOCALITY 1*. Figure 3.3 reports some statistics from *ADD2LOCALITY 1*, which highlighted differences between itself and the rest of Council X and reflected the inequalities reported by the Growing Up in Scotland study (See Tables 3.2 and 3.3).

Figure. 3.3

Children and Young People in ADD2LOCALITY 1



Note. From *ADD2LOCALITY 1* Locality Plan 2017 – 2027

In line with the national and local policies on inequalities and the context of family life in Scotland and Council X, the Family First Service was established to support families in Council X. Full details of the role and referral procedures to the Service are provided in Chapter 6: Methodology. The Family First Service played a key role in the development of a scale to measure family wellbeing by piloting the scale to collect data from families who were referred to them.

3.8 Summary

This chapter further developed the aims of the study and highlighted the context in which the Strathclyde Family Wellbeing Scale was developed, by reference to and critique of theoretical models of family functioning and family wellbeing, which included family systems theory and the International Family Strengths Model (DeFrain & Asay, 2007b). Data from Growing Up in Scotland (2005) and local data on families in Council X indicated the types of challenges that families face to their wellbeing. This data and national policies such as the Whole Family Wellbeing Fund (Scottish Government, 2023), strongly demonstrated that a scale to measure family

wellbeing is a valuable tool, which could potentially support early intervention in families that need help. Such an instrument could track progress and measure outcomes to improve family wellbeing, supporting both policy and practice.

The next chapter reviews published tools developed to measure family wellbeing.

CHAPTER 4 REVIEW OF PUBLISHED TOOLS DEVELOPED TO MEASURE FAMILY WELLBEING

Introduction

Chapter 3 highlighted the importance of family wellbeing and how it develops and impacts on family life. This supports the aim of developing a self-report instrument to measure wellbeing in families. Such a tool would assist Services that support families, to investigate and measure their impact and practice with families, and enable families themselves, to assess their own wellbeing. Consequently, changes in family wellbeing could be measured and crucially tracked over time, to help families function better and services deliver their practice more effectively.

This chapter reports a scoping review to assess the current research evidence collated on tools to measure family wellbeing, and to explore and learn from the range, quality and type of tools developed, to investigate if any gaps exist, which a new tool might address. Scoping reviews can be distinguished from systematic reviews by their strict method of merging findings in studies and then elucidating and improving thinking in the topic, as well as finding any gaps in the literature (Arksey & O'Malley, 2005). Scoping reviews generally summarize current research, while systematic reviews aim to address well defined research questions and critique existing research (Davis et al., 2009). A scoping review is a suitable method to identify initial evaluations of a collection of research when an area of interest, such as family wellbeing is developing and has diversity in definitions and measurement (Arksey& O'Malley, 2005).

4.1 Systematic reviews and scoping papers

Five papers from the literature review were selected (see Table 4.1) because they were systematic reviews or scoping reviews of research on instruments to measure wellbeing and consequently had already been subjected to a formal scrutiny process. This was an efficient method of sampling a wide selection of robust scale measures of wellbeing, to explore their range and quality. Each of these papers (Table 4.1) is critiqued in the following sections.

Table 4.1

Summary of Systematic Review/ Scoping Papers on Wellbeing

Author	**Title**	**Source**	**Aim**	**Findings**
Lindert, J, Bain, P. A., Kubzansky, L. D., Stein, C. (2015)	Well-being measurement and the WHO health policy Health 2010: systematic review of measurement scales	European Journal of Public Health, Vol. 25, No. 4, 731–740 Oxford University Press,	Identify, map and analyse the contents of self-reported well-being measurement scales for use with individuals more than 15 years of age to help researchers and politicians choose appropriate measurement tools.	60 unique measurement scales. Measurement scales were either multidimensional (n = 33) or unidimensional (n = 14) and assessed multiple domains. The most frequently encountered domains were affects (39 scales), social relations (17 scales), life satisfaction (13 scales), physical health (13 scales), meaning/achievement (9 scales) and spirituality (6 scales). The scales included between 1 and 100 items; the administration time varied from 1 to 15 min.
Pritchett, R., Kemp, J., Wilson, P., Minnis, H., Bryce, G. and Gillberg, C. (2010)	Quick, simple measures of family relationships for use in clinical practice and research. A systematic review	Family Practice 2011; 28:172–187. Oxford University Press.	Identify systematically all questionnaire measures of family functioning appropriate for use in primary care and research.	107 measures of family functioning were reported and tabulated and the most used measures were identified. These were: Parenting Stress Index, Child Abuse Potential Inventory, Parenting Scale, the Parenting Daily Hassles Scale, the Conflict Tactics Scale, parent–child version (CTSPC), Parenting Sense of Competence Scale, Dyadic Adjustment Scale, Impact on Family Scale, Family Adaptability and Cohesion Evaluation Scale, FAD and the Family Assessment Measure.
Early, T. J. (2001)	Measures for Practice With Families	Families in Society: The Journal of	identify and evaluate measurement instruments that can be used in practice with	Twelve instruments identified and described. Five are from an explicit strengths perspective. Family Support Scale (FSS), Family Resource Scale (FRS), Family Functioning Style Scale (FFSS),

	From a Strengths Perspective	Contemporary Human Services, Volume 82, Number 2, 225-232	families—from a strengths perspective—and enable social workers to document service effectiveness.	Family Empowerment Scale (FES) and Behavioral and Emotional Rating Scale (BERS). These instruments are consistent with practice from a strengths perspective.
Ami Tint, A. and Weiss, J. A. (2015)	Family wellbeing of individuals with autism spectrum disorder: A scoping review	Autism 2016, Vol. 20(3) 262–275	To (a) summarize current conceptualizations and measurements of family wellbeing, (b) synthesize key findings, and (c) highlight gaps and limitations in the extant literature.	A final review of 86 articles highlighted the difficulty of synthesizing findings of family wellbeing in the autism spectrum disorder literature due to varied measurement techniques.
Yaxley, V., Gill, V. and McManus, S. (2012)	Family wellbeing: measuring what matters Identifying and validating domains	NatCen Social Research (2012)	Identify some of the evidence about what is known to influence family wellbeing. The focus is on positive behaviours that people have some direct control over.	Six domains (or themes) were found to be key. These are described under the following headings: *Eat, Move, Connect, Learn, Play,* and Give. Robust research evidence exists showing that each of these have relevance for the health and wellbeing of families.

4.2 The WHO health policy Health 2010: systematic review of measurement scales (2015) Lindert, Bain, Kubzansky, Stein (2015)

The purpose of the *Well-being measurement and the WHO health policy Health 2010: systematic review of measurement scales* (Lindert, Bain, Kubzansky & Stein, 2015) was to identify, chart and evaluate well-being measurement scales designed for individuals of 15 years of age and above, to assist researchers and politicians select suitable assessment instruments (Lindert, Bain, Kubzansky &Stein, 2015). Hence, it has relevance for an exploration of scales to measure family wellbeing, given the target age range, which could include parents. However, it is not focused on measuring wellbeing from a family context/perspective and hence this relevance is slightly weakened. Nevertheless, the aim was directly compatible with the development of the Strathclyde Family Wellbeing Scale for use by Services to support their practice, as is the examination of scale items.

The systematic review methodology was rigorous and followed the recommendation of the Scientific Advisory Committee of the Medical Outcomes Trust (Perrin, 1995). It employed two independent checklists, Greenhalgh, Long, Brettle (1998) and Jerosch-Herold (2005) to assess the quality of these instruments. The researchers then developed their own detailed checklist based on these recommendations and checklists, which reported on an extensive number of items, including length of time to complete the scale, and validity (concurrent-, discriminant- and criterion validity), reliability (internal consistency, test re-test reliability), social desirability and cultural, gender and age sensitivity (Lindert, Bain, Kubzansky & Stein, 2015. Given the importance of these properties in scale design, they were influential and subsequently adopted and incorporated into the development of the Strathclyde Family Wellbeing Scale.

In addition, this paper gave a detailed account of the old, continuing and vigorous debate on the definition of subjective wellbeing, repeated in other research papers, focusing on eudemonic and hedonic wellbeing (van Dierendonck, 2004; Keyes, 2002; McDowell, 2010; Ryan & Deci, 2001). The hedonic view refers to maximising happiness and reducing discomfort, in contrast to the eudemonic tradition, which asserts that wellbeing, is also obtained through having meaning in

life and personal goals, combined with being a contributor to the world (Lindert, Bain, Kubzansky & Stein, 2015).

This strong, informative paper, meticulously identified and appraised 60 scales (Table 4.1), finding that 33 were multidimensional, suggesting that a psychometric evaluation of the Family Wellbeing may also reveal a multidimensional structure. Noticeably, they all assessed multiple domains, unlike the Strathclyde Family Wellbeing Scale, which aims to measure a single domain of wellbeing in families. This is comparable to 'multiphasic tests' which assess several different domains and 'monophasic' tests, which assess only one domain (Boyle, Gillham & Smith, 1996). In addition, they provided evidence that a robust scale to measure wellbeing may be developed based on a short format that could be administered quickly. This also reflects the design of the Strathclyde Family Wellbeing Scale. However, there was no mention of the scales being constructed from a purely strength-based viewpoint, which was a fundamental aspect of the Strathclyde Family Wellbeing Scale, and hence this distinguishes it from these scales.

4.3 Quick, simple measures of family relationships for use in clinical practice and research. A systematic review (2010). Pritchett, Kemp, Wilson, Minnis, Bryce and Gillberg (2010)

This was an extensive systematic review, which applied PRISMA guidelines (Page, McKenzie, Bossuyt, Boutron, Hoffmann, Mulrow, et al.2020), to explore 14 databases with the aim of finding assessment tools to evaluate how families operate, focusing on those with children from 0 to 3 years old. The authors reported that this review expanded on earlier research (Tutty, 2005) by adopting a systematic approach to the investigation of previously cited measures (Pritchett, Kemp, Wilson, Minnis, Bryce & Gillberg, 2010), thereby reinforcing the rigour of their study. Consequently, their findings are particularly worth noting. However, limitations of the review were acknowledged, such as the restricted search terminology criteria, only including articles with the term self-report and subjectivity bias in the assessment of instrument themes.

The paper raises pertinent issues, such as the accuracy of tools claiming to measure family functioning rather than on an individual level, and the validity of then combining individual scores to obtain an overall score. Similarly, self-report questionnaires and the problem of socially desirable responses were also noted (Pritchett, Kemp, Wilson, Minnis, Bryce & Gillberg, 2010). These matters were consequently considered when developing the Strathclyde Family Wellbeing Scale. Critically, they acknowledged the complexity of how families function and hence arranged the 107 instruments identified into six categories: *(1) parent–child relationships, (2) parental practices and discipline, (3) parental beliefs, (4) marital quality, (5) global family functioning and (6) situation-specific measures* (Pritchett, Kemp, Wilson, Minnis, Bryce & Gillberg, 2010). This structured approach was helpful as it clarified the range of measures reviewed and enabled identification of *(5) global family functioning (see Figure 4.1),* as probably the most relevant to the development of the Strathclyde Family Wellbeing Scale, because measuring total family wellbeing was its primary focus. Although items contained in the other categories are also certainly relevant to wellbeing in families.

The robustness of the review process was further strengthened by applying various criteria to the measures. Examples included meeting standards of reliability and validity if reported and evidence of test-retest and inter-rater reliability, as well as factor analysis results derived from a theoretical basis. As a result, the review findings had a solid evidence base and highlighted crucial features of strong scale design, many of which, such as factor analysis were then utilised in the development of the Strathclyde Family Wellbeing Scale. Hence, learning from this systematic review was applied to the current study. However, one conclusion reached by the systematic review, was that the wide variety of existing tools in the field meant that the need for further measures was reduced, unless they were for particular, unexplored areas of family functioning (Pritchett, Kemp, Wilson, Minnis, Bryce & Gillberg, 2010).

While this is recognised in part by the researcher, it is asserted that the development of the Strathclyde Family Wellbeing Scale does explore the area from a different position, that of a strength-based, family wellbeing perspective. The limitations of the systematic review, mentioned above, referred to a restricted search

criteria. Inspection of the search methodology and the 107 identified measures indicated that contemporary terminology such as ‘wellbeing, ‘family wellbeing’, ‘strength-based’ measures, ‘strong families’ were not present in either the search terms or descriptions of the measures identified.

Figure 4.1 is a reproduction of table 5 containing the papers for category *(5): global family functioning measure* (Pritchett, Kemp, Wilson, Minnis, Bryce & Gillberg, 2010). Category 5 certainly contains measures with synonyms and closely related items such as the Family Assessment Device (FAD), Epstein et al. (1982) described as: *60 items—family unit functioning—six domains: roles, communication, problems solving, affective interaction, affective responsiveness, behaviour control and total family functioning* (Pritchett, Kemp, Wilson, Minnis, Bryce & Gillberg, 2010). Clearly, this scale measures aspects of family wellbeing but does not specifically refer to wellbeing. It is also forty years old, and consists of 60 items, which is lengthy and presents challenges for the practitioner in terms of time to administer, record and track any changes. Many other examples also contain closely related terminology related to wellbeing, such as ‘cohesion’ but do not appear to be strength-based or cited as such.

In conclusion, this systematic review provided invaluable insight into the range, quality and structure of measures of family functioning, which informed the development of the Strathclyde Family Wellbeing Scale. It also highlighted the possibility that a new strength-based measure of wellbeing in families would be a valuable contribution to the field.

Figure 4.1

Table 5 Global family functioning measures

TABLE 5 *Global family functioning measures*

Measurement	Main reference	Measure description and issues with validity/reliability
Child and Family Impact Measure	Day and Davis[164]	6 items—impact a child has on a family—two scales: impact (including problem severity, child distress and family distress items) and burden (including interference with child, family and nursery/school activity items).[164] No evidence of reliability or validity but conceptual base and structure similar to Impact Supplement of the Strengths and Difficulties Questionnaire.[165]
Family Adaptability and Cohesion Evaluation Scale	Olson *et al.*[166]	20 items—general family functioning—two dimensions of how a family functions: cohesion, the degree of family connectedness and adaptability, the degree to which the family system is able to change.[167]
Family Apgar	Smilkstein[168]	5 items—family functioning—family adaptation, partnership, growth, affection and resolve.[169]
FAD	Epstein *et al.*[170]	60 items—family unit functioning—six domains: roles, communication, problems solving, affective interaction, affective responsiveness, behaviour control and total family functioning.[77]
Family Assessment Measure	Skinner *et al.*[171]	92 items—family functioning—two subscales: a general scale and a dyadic relationship scale—general scale contains 50 items and examines the family as a system and dyadic relationship scale contains 42 items and measures relationships between specific pairs in the family.[172]
Family Coping Strategies	McCubbin *et al.*[173]	Identifies behaviours and problem-solving approaches that can benefit a family—subscales: the mother's reframing of family problems and the acquiring of support from family, friends, neighbours and community resources.[174]
Feetham Family Functioning Survey	Roberts and Feetham[175]	An individual's interpretation of how their family is functioning—the family member's views on how the family works in its current environment, the difference between how they expect their family to function and how it actually functions as well as the relative importance of different family functions.[176]
Impact on Family Scale	Stein and Reissman[177]	How much a mother perceives their child as impacting on their family—originally developed to assess the impact of a child with a disability, been adapted for healthy children—subscales: financial and personal strains, disruption of family, social and sibling relations and coping abilities.[178]
Prenatal Version of Who Does What	Cowan and Cowan[179]	20 items—parents rate who they anticipate will be responsible for different child care-related responsibilities after the baby is born and who they would ideally like to be responsible for each task—final score results from the discrepancy between the anticipated and ideal ratings.[95]
Self-Report Family Inventory	Beavers *et al.*[180]	34 items—internal family functioning—five dimensions: health/competence, conflict resolution, cohesion, leadership and expressiveness.[181]

Note. From Quick, simple measures of family relationships for use in clinical practice and research. A systematic review. (Pritchett, Kemp, Wilson, Minnis, Bryce & Gillberg, 2010, p. 181). A systematic review. *Family Practice*, *28*(2), 172-187.

4.4 Measures for Practice with Families from a Strengths Perspective (2001) (Early, 2000)

This study was not a systematic review and was smaller in scale than *Quick, simple measures of family relationships for use in clinical practice and research. A systematic review (2010).* (Pritchett, Kemp, Wilson, Minnis, Bryce & Gillberg, 2010), discussed above. However, it was selected for examination because it aimed to identify and evaluate twelve tools with satisfactory psychometric properties that could be applied in practice with families, from a strengths perspective, and also assist social workers to analyse service impact (Early, 2000). Satisfactory values for psychometric validity, are communalities between 0.25 and 0.4 are acceptable cut-off values, or ideally 0.7 or above (Beavers, Lounsbury, Richards, Huck, Skolits & Esquivel, 2013). Reliability of .7 for Cronbach's Alpha (Pallant, 2020) is regarded as acceptable. These study aims are almost identical to the aims of the current study and the goal of developing a strength-based scale to measure family wellbeing for use by the Family First Service, to enable them to support families and evaluate their effectiveness as practitioners. Furthermore, it discovered additional tools that were not identified in the systematic review by Pritchett, Kemp, Wilson, Minnis, Bryce and Gillberg (2010), critiqued in section 4.3.

The study concluded that five of the twelve instruments identified, were clearly strength-based: Family Support Scale (FSS) (Dunst, Trivette & Cross, 1986) originally developed by Dunst, Jenkins, & Trivette (1984), Family Resource Scale (FRS) (Dunst & Leet, 1987), Family Functioning Style Scale (FFSS) (Deal, Trivette & Dunst, 1988), Family Empowerment Scale (FES) (Koren, DeChillo & Friesen, 1992) and Behavioural and Emotional Rating Scale (BERS), (Epstein & Sharma, 1998).

While these scales are established measures of family life, their content does not always refer directly to 'family wellbeing' and often measure related elements. For example, the FRS measures social support for families, and the FES measures empowerment in families with children with emotional impairment (Early, 2000). The latter measures direct and indirect resources, such as food and time with family, that are regarded as vital for families with young children (Dunst & Leet, 1987). The FES has a similar aspect, with 34 items and measures empowerment in families based on attitudes to the family, service systems and community/politics. An

example of a scale item is: “I make sure that professionals understand my opinions about what services my child needs”. The BERS measures children’s behavioural and emotional strengths and comprises 52 items and five subscales: interpersonal strengths, family involvement, intrapersonal strengths, school functioning, and affective strengths. So, while it is clearly linked to family functioning, it does so from a child’s perspective.

However, these measures can be contrasted with the 26-item FFSS, which drew on research from strong families and aims specifically to measure family strengths (Trivette, Dunst, Deal, Hamby, & Sexton, 1994). The five scales: interactional patterns, family values, coping strategies, family commitment, and resource mobilization, evidently more closely match aspects of wellbeing. However, this scale is almost thirty years old and a newer, more compact contemporary measure, based on recent research, and solely measuring family wellbeing, may be a valuable, updated contribution to the field.

Significantly, this study also identified the Family Assessment Device (FAD) (Epstein, 1982) and the Family Assessment Measure (FAM-III) (Skinner, Steinhauer, Santa-Barbara, 1983), which were included in the systematic review by Pritchett, Kemp, Wilson, Minnis, Bryce and Gillberg (2010), as discussed in section 4.3. Both instruments are well established scales, which clearly measure relevant features of family wellbeing. However, the FAD and FAM contain 60 and 92 items respectively, and were both developed in the early 1980s, and are therefore rather old, lengthy, and present challenges as detailed in 4.4.

4.5 Family wellbeing of individuals with autism spectrum disorder: A scoping review (2015). (Tint and Weiss, 2015).

This paper details a scoping review, which had the aim of summarising contemporary thinking and views of measurements of family wellbeing in the field of autism, integrating the results, and revealing any gaps and limitations in existing research. The outcome of the 86 articles reviewed underlined the challenge of assimilating the findings of autism related to family wellbeing due to the wide range of different measurement methods. (Tint & Weiss, 2015). The paper was selected because it actually has the same aim as the literature review of the current study, apart from the focus on autism. The current study and literature review is from the

perspective of wellbeing in families in general, not families of individuals with autism.

The paper also discusses the familiar challenge of defining family wellbeing based on established research and from an international perspective of the World Health Organisation and government related policies. Tint and Weiss (2015) cite the United Nations formal recognition in 2012 of the crucial position families occupy as the "basis of society" (United Nations, 2012: 1) and the request for membership countries to develop policies to "promote the well-being of families, which in turn will contribute to fostering democratic, stable and cohesive societies'' (p2).

Hence, the political and global significance of wellbeing in families is highlighted. Crucially, the paper asserts that while the concept of wellbeing has been soundly established, across many international government policies (European Commission, 2008; Office for National Statistics, 2012; UNICEF, 2007), the focus has been on measuring individual wellbeing. The shift by governments to recognise the significance of family wellbeing is fairly new (Wollny et al., 2010).

Finally, the impact of autism on families has much in common with families under stress in general, and therefore the review has important information to share with researchers. Support for families who care for individuals is often overlooked (Karst & Van Hecke, 2012), and yet their needs are a growing issue for health systems and involve multi-dimensional financial, psychological and social aspects (Talley & Crews, 2007). While more knowledge of family wellbeing of individuals with autism is vital to improve policy and practice (Tint & Weiss, 2015), the same point can be made for families with other disabilities (Aneshensel et al., 1995; Seligman & Darling, 1997), and indeed for families in general, who are experiencing stressful family life. Frequently, such stresses necessitate alteration of working arrangements and other daily routines to accommodate family members who have care needs (Werner DeGrace, 2004). This can also be the case for families under significant pressure in general, which further impacts their family wellbeing.

Thus, this scoping review makes the case again, at government level, for developing a tool, which can help policy makers and practitioners to deliver more effective services to families and thereby improve family wellbeing. Hence, the validity of the current study is reinforced.

A strength of this paper is the discussion of recognised but contested definitions of wellbeing, such as subjective wellbeing conventionally separated into the hedonic viewpoint, stressing happiness and pleasure as constructs (Diener, 1984), and the eudaimonic viewpoint, emphasising psychological meaning and development (e.g. Ryff & Keyes, 1995). The general agreement that wellbeing is a complex concept, which comprises of emotional, social, and functional elements (Ryff & Keyes, 1995) is recognised, as is the continuing dispute regarding particular theoretical features and their contribution to the measurement of wellbeing (Diener et al., 2009). Thus, the scoping review is based on a sound understanding of the history, theory and evidence base of wellbeing.

An especially salient feature of the review is discussion of the complexity of measuring and defining family wellbeing thereby distinguishing it from individual wellbeing. Measurement of family wellbeing was highlighted, as being carried out in many different ways, which included: physical and psychological health of single family members combined with the family as a whole (Pederson & Revenson, 2005); family assets or requirements (Bratt, 2002); the nature of internal and external family relationships (Taylor & Roberts, 1995); and the global environmental circumstances in which families live (e.g. Zimmerman, 1992). The negative impact on policies of this complicated measurement landscape, is demonstrated by citing a review of family outcome measures for families of individuals with learning difficulties (Turnbull et al.,2007).

The rigorous search methodology further strengthens the paper, which included a minimum of one term for family and wellbeing, respectively, and only papers that clearly referenced wellbeing throughout were included (Tint & Weiss, 2015). However, strength-based search terminology was not used such as ‘strong families’, which is an essential element used to construct the Strathclyde Family Wellbeing Scale. Hence, potentially relevant papers were missed.

The conceptualisation of family wellbeing by researchers and the use of synonyms with associated measures was discussed in detail. Examples included wellbeing interchanged with adjustment and mental health (n = 9; e.g. Bromley et al., 2004), or quality of life (n = 10; e.g. Benjak, 2011), as well as construed as a dimension of wellbeing (e.g. Totsika et al., 2011). A perceptive conclusion was that

as a result of family wellbeing being categorised in quite different ways, according to definitions used by researchers (Tint & Weiss, 2015), this further obscured the nature of wellbeing and its subsequent measurement. For example, wellbeing defined as "a general sense of enjoying life…' Mirowsky and Ross' (2003) was contrasted with it comprising a group of diverse constructs (Binnendyk & Lucyshyn, 2009).

The review ultimately identified 56 different quantitative measures of wellbeing and Table 4.3 summarises the quantitative indicators of family wellbeing (Tint & Weiss, 2015, p. 266).

Table 4.3

Quantitative Indicators of Family Wellbeing

Measures	No. of included articles[a]
Mental and physical health	67
Stress, burden, and related concepts	21
Eudaimonic wellness	15
Other (e.g. life satisfaction, coping, work intrusion)	14
Family impact and related concepts	10
Quality of life	5

[a]Numbers do not tally total included articles as several articles used multiple indicators and measures.

Note. From (Tint and Weiss, 2015, p. 266) Family wellbeing of individuals with autism spectrum disorder: A scoping review (2015). *Autism*, *20*(3), 262-275.

This 2015 scoping review of family wellbeing of individuals with autism spectrum cited various limitations such as not considering international or grey literature, but nevertheless it was an extensive review, which explored family wellbeing and autism in depth. It revealed the sheer complexity of measuring family wellbeing, but discovered many quantitative tools to measure family wellbeing, albeit, from an autism viewpoint. Significantly, it concluded that contemporary research is moving away from a deficit model to a strength-based approach to family wellbeing. This reflects the aims of the current study, which suggests it is in sync with the direction of current research.

4.6 Family wellbeing: measuring what matters - Identifying and validating domains (2012). (Yaxley, Gill & McManus, 2012).

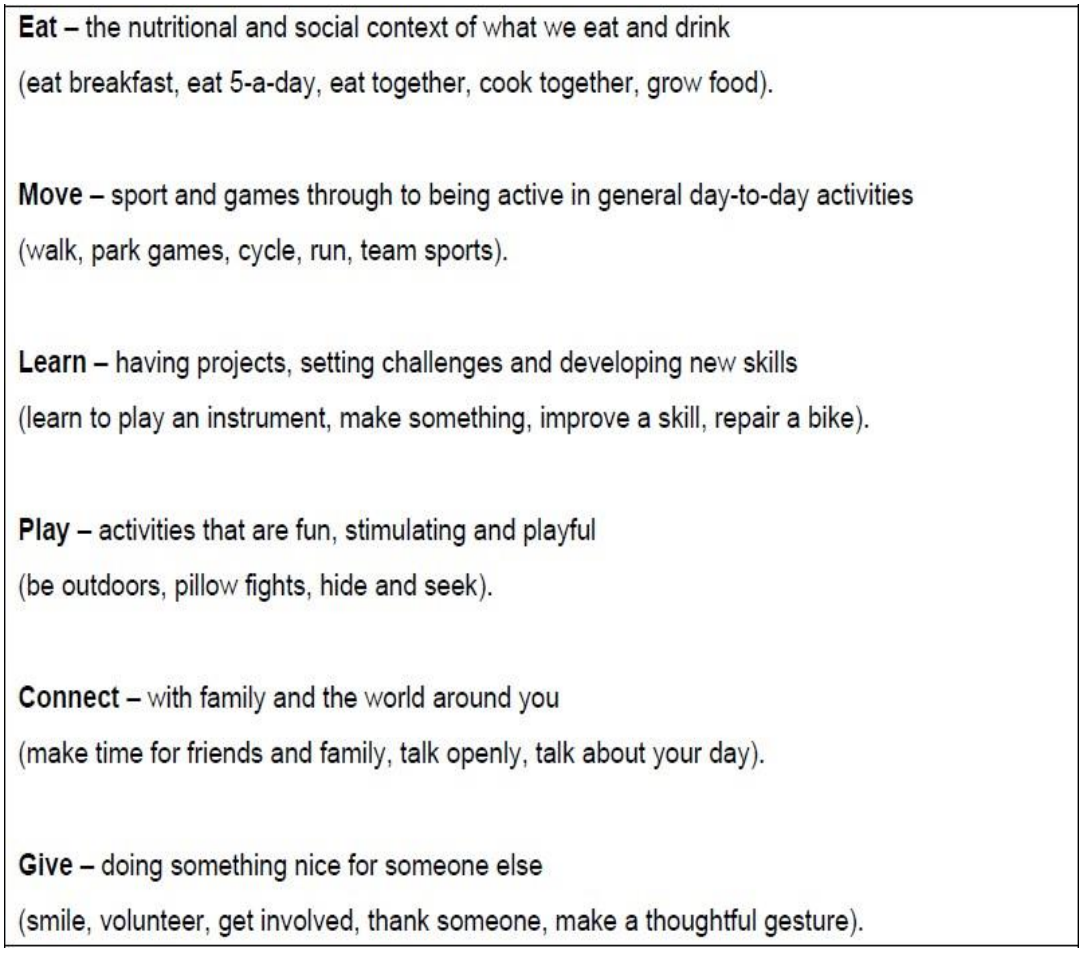
This paper was selected because it claimed to identify findings about what shapes and impacts wellbeing in families. These findings were then utilised to create a tool: the Family Wellbeing Index, which aims to measure behaviour that promotes wellbeing rather than construct itself. In addition, it concentrates on positive behaviours over which families have some direct influence and hence has a strength-based perspective (Yaxley, Gill & McManus, 2012). This articulates particularly well with the aim of the current study, to develop a strength-based quantitative measure of wellbeing in families: the Strathclyde Family Wellbeing Scale. The focus on behaviour that individuals have some control over, suggests the review was underpinned by a search for research on behaviour, which can empower families, thereby promoting positive change. This reflects the relationship-based approach, which the Family First Service practise, with the aim of building capacity within the family in parenting and other skills to improve wellbeing. The Family First Service piloted the Strathclyde Family Wellbeing Scale with families throughout the current study.

The review claimed to have identified strong evidence for six key domains (or themes): *Eat, Move, Connect, Learn, Play,* and *Give* that have significance for health and wellbeing in families, and then developed the Family Wellbeing Index (Yaxley, Gill & McManus, 2012). This evidence is drawn from different sources, for example, *Psychological well-being: evidence regarding its causes and its*

*consequences. London: Foresight Mental Capital and Wellbeing Project 2008 (*Huppert ,2008). The Family Wellbeing Index is reproduced in Figure 4.1 below, with corresponding examples of recommended activities to improve wellbeing, linked to each of the domains.

Figure 4.1

Family Wellbeing Index Domains



Note. From (Yaxley, Gill & McManus, 2012, p. 38). Family wellbeing: measuring what matters - Identifying and validating domains. *London: NatCen Social Research*.

The Family Wellbeing Index is aimed at care givers of 6- to 16-year-olds to help them discover strategies to support their family's wellbeing and obtain bespoke recommendations to acquire skills in targeted areas. This description has much in common with the Strathclyde Family Wellbeing Scale, which contains items that reflect the six domains, and assisted the Family First Service to focus on parts of family functioning that needed support. Some examples of mappings between the Family Wellbeing Index and the Strathclyde Family Wellbeing Scale are contained in Table 4.4.

Table 4.4

Mapping of Family Wellbeing Index and Strathclyde Family Wellbeing Scale

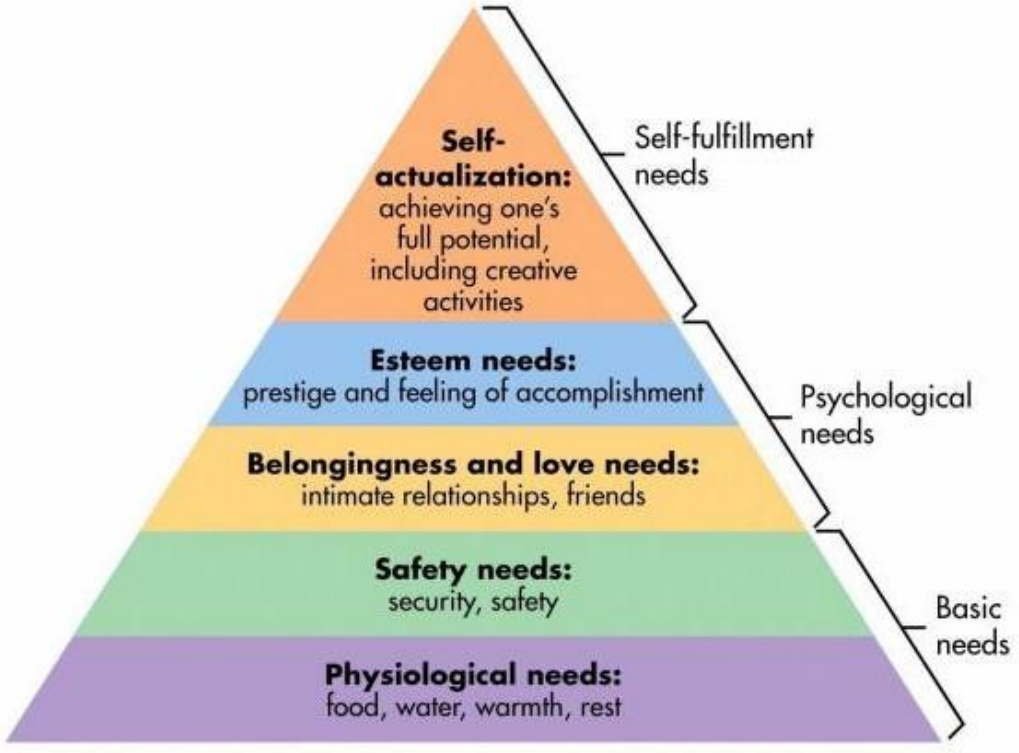
Family Wellbeing Index Domain	**Strathclyde Family Wellbeing Scale Item(s)**
Connect	'We listen to each other' 'We have a strong sense of belonging'
Learn	'We enjoy helping each other'
Play	'We like to have fun together'
Give	'We like to be kind to each other'

Similarities also include: the focus on practical behaviour that families have control over, rather than areas such as current employment or the political environment. Hence, *Family wellbeing: measuring what matters - Identifying and validating domains (2012) (Yaxley, Gill & McManus, 2012)* provides strong confirmation that items in the Strathclyde Family Wellbeing Scale correlate well with themes of family wellbeing found in this review.

The review is based on sound psychological theory from authoritative sources. The definition of health as "a state of complete physical, mental, and social wellbeing and not merely the absence of disease or infirmity" (World Health Organisation, 1948) is cited. The recurring debate between hedonic wellbeing and eudaimonic wellbeing is referenced and both views were incorporated into the Family Wellbeing Index (Yaxley, Gill & McManus, 2012), resulting in a robust framework. Recall that Eudaimonic wellbeing is explained as commonly related to functioning, 'flourishing', value, meaning and social relationships (Huppert, 2008). The authors asserted that the development of the Family Wellbeing Index drew on research that demonstrated actions within the control of individuals promoted psychological wellbeing (Lyubomirsky, King & Diener, 2005). Yaxley, Gill and McManus (2012) also claimed the Family Wellbeing Index domains are aligned, generally, with Maslow (1943) and his hierarchy of needs model (see fig 4.2).

Figure 4.2

Maslow's Hierarchy of Needs Model



Note. From McLeod, S. (2007, p. 1). Maslow's hierarchy of needs. *Simply psychology*, *1*(1-18).

Despite the strengths of the Family Wellbeing Index a number of limitations of the review: *Family wellbeing: measuring what matters - Identifying and validating domains (2012), (Yaxley, Gill & McManus, 2012),* can be cited, both in terms of its research base and as tool to measure family wellbeing. Firstly, despite clearly drawing on sound research evidence, the authors stress that the review is a succinct overview and not a formal systematic review (Yaxley, Gill & McManus, 2012. Hence, it is more compatible with a scoping review, which summarises current research rather than answering a carefully framed research question (Davis et al., 2009). No independent checklists such as PRISMA were used to guide the search methodology. The aim was to discover themes linked to family wellbeing to create the Family Wellbeing Index, as such, the Index is therefore not directly measuring the construct of family wellbeing. Also, one of the domains is 'Eat', which does map on to Maslow's 'Physiological Needs' and is undoubtedly related to health. However, the relevance to family wellbeing is debatable, as it is primarily a physical rather than a psychological need, and that is the focus of the Family Wellbeing Scale.

The construction of the scoring mechanism for the Family Wellbeing Index consists of four questions under each domain (Yaxley, Gill & McManus, 2012. Although the questions have been adapted from recognised psychological instruments and national social surveys, perhaps there is an issue with integrating these disparate items into a single instrument. A total score is obtained for the Family Wellbeing Index and for each domain, followed by allocation of a positive family 'archetype' (one of the six domains), depending on the domain which achieved the highest score. The reason is that this enables families to see their strengths and to identify areas for improvement. This mechanism is designed to link the domains to Maslow's Hierarchy of Needs, which is commendable, but there is a weakness in that Maslow's model is not actually directly related to family wellbeing. Finally, there is no mention of the Family Wellbeing Index having been subjected to tests of validity and reliability, such as factor analysis or Cronbach's Alpha (Costello & Osborne, 2005). Hence, while it is based on robust research given then range of sources cited, the underlying constructs do not appear to have been examined following the usual

method of scale development, for example, the application of psychometric analysis to assess validity and reliability (Field, 2013).

4.7 Summary

This chapter critiqued five review papers, four of which investigated quantitative indicators of family wellbeing and one, which focused on individual wellbeing. The selection of systematic and scoping reviews on wellbeing was an efficient search strategy, which resulted in a comprehensive exploration of current research in the field.

Several key points were derived from the review. Firstly, the hedonic and eudaimonic viewpoints of wellbeing were a recurring theme throughout the articles and reinforced their need to be incorporated into a scale designed to measure family wellbeing. They represent the fundamental philosophical origins of wellbeing and despite their antiquity, continue to influence the field of wellbeing and the structure of scales designed to measure the construct. Another structural aspect of scales that was highlighted, was the presence of multidimensionality that underpinned many of the scales identified in the papers. This emphasises and reinforces the essential role of factor analysis as a robust methodology to determine the underlying dimensions of any new scales developed. Consequently, it confirms the validity of the first aim of this thesis: *To explore and determine the underlying dimensions of the Strathclyde Family Wellbeing Scale (SFWS) using Principal Components Analysis (PCA) / Principal Axis analysis.*

The prevalence of multidimensionality in the papers that were reviewed, additionally indicated that the Strathclyde Family Wellbeing Scale might have a similar structure. Multidimensionality also reflects the complexity of measuring and defining family wellbeing, which was highlighted, as being conducted, and construed in many ways (Tint & Weiss, 2015). Hence, a new, robust, short-form scale such as the Strathclyde Family Wellbeing Scale, may make a valuable contribution to reducing these challenges.

The range of scales reviewed underlined that they could also be used for different purposes, such as screening or profiling, or to assess outcomes. For example, in *Quick, simple measures of family relationships for use in clinical*

practice and research. A systematic review (2010). (Pritchett, Kemp, Wilson, Minnis, Bryce & Gillberg, 2010), the authors focused on scales to evaluate how families operate. Hence, they could be used to profile families to identify if they needed support. Alternatively, they could be used to assess outcomes for service evaluation to measure effectiveness of input. This supports and confirms the second aim of this thesis: *to investigate the utility of the Strathclyde Family Wellbeing Scale using factor scores from the Principal Component Analysis as a measure of outcome and impact and as a measure of its utility to measure outcome and impact of family-based interventions*.

The importance of fundamental statistical concepts that are essential properties, which should underlie instruments, particularly reliability and validity were emphasised in most of the papers. Thus, highlighting that the underlying dimensions of a scale to measure family wellbeing must be robust, once again validating the first aim of this thesis. Consequently, reliability, validity and the methodology used to analyse them, such as principal components analysis, were closely followed and scrutinised in the development of the Strathclyde Family Wellbeing Scale.

The review of published tools to measure family wellbeing also revealed the significance of pragmatic issues, such as the age of the instrument, length of scale, time to complete and accessibility of the scale. These are vital considerations if an instrument is to be adopted by users and deployed effectively. Many of the instruments identified were rather dated, lengthy and measured related but indirect elements of family wellbeing. Despite the substantial range of existing tools to measure wellbeing, there still appears to be a clear gap to design a short form, strength-based, validated scale solely focused on measuring the single construct of family wellbeing. The Strathclyde Family Wellbeing Scale was developed to address this gap.

Finally, the review of published tools also revealed that psychological wellbeing was formally recognised as a vital feature of human life by international bodies, such as the World Health Organisation. Hence, developing a measurement tool is highly valuable from a social and political viewpoint if it can help “promote the well-being of families, which in turn will contribute to fostering democratic,

stable and cohesive societies' (United Nations, 2012). In addition, there was evidence of a recent change in attitude at governmental level to recognise the importance of family wellbeing, not just individual wellbeing. Similarly, new thinking was evident from current research, which was transferring away from a deficit model to a strength-based approach to family wellbeing. These developments all strongly resonate with the aims of the current study, which suggests it is synchronised with contemporary social and political thinking and research practice.

The next chapter builds on the knowledge and insight obtained from this literature review and focuses on the principles of scale design, which were utilised to develop the Family Wellbeing Scale.

Chapter 5 Principles of Scale Design

Introduction

This chapter sets out the recommended principles of scale design, with reference to the design and development of the Strathclyde Family Wellbeing Scale, and to examples of established scales. The focus is on the generally recognised and accepted key steps taken by researchers that are necessary to construct a robust scale. It is not a full critique of different methods of questionnaire construction. Chapter 6: Methodology, Table 6.2, contains a summary of procedures recommended by Field (2005b), which were generally followed. This chapter expands and discusses each of those steps in more detail. Chapter 6 and Chapter 7: Study 1 explain the background and method used to design, pilot and develop the Strathclyde Family Wellbeing Scale. Finally, there is a discussion about the instrument that was selected for adaptation into a scale to measure wellbeing in families.

5.1 The importance, use and definition of scales

Questionnaires are highly influential in developing social policy and practice in many spheres of public life (Slattery, Voelker, Nussenbaum, Rich, Paniello & Neely, 2011). For example, employing questionnaires as a means of collecting data in the health sector has grown in many countries (Sitzia et al. 1997, Jones & Johnston 1999, Waltz & Jenkins 2001, Rattray et al. 2007). Hence, it is essential that they are correctly constructed and validated. A questionnaire can be defined as a tool to measure one or more constructs by means of combined item scores, called scales (Oosterveld, Vorst & Smits, 2019). Hence, questionnaires are also referred to as 'scales' when their application results in a quantified score (Slattery, Voelker, Nussenbaum, Rich, Paniello & Neely, 2011). Questionnaires are usually completed by self-report and comprise of a list of questions, covering targeted topics regarded as of significant interest for enquiry (Slattery, Voelker, Nussenbaum, Rich, Paniello & Neely, 2011). A fundamental aim of scale design is the development of a valid measure of an underlying construct (Clark & Watson, 1995). The focus of the current study is to develop a valid measure of the construct of family wellbeing.

5.2 Different methods of scale design

Scale development requires a coherent, methodical and well-thought-out approach (Rattray & Jones, 2007). Despite this, a wide range of approaches for developing scales exist and attempts to classify them have not led to a consensus on a universal method of categorisation (Oosterveld, Vorst & Smits, 2019). However, there are often similar and overlapping methods of scale design, which contain the same steps and concepts recommended by researchers. For example, item response theory (IRT) can be contrasted with classical test theory (CTT), both of which are used in test development and evaluation but have different approaches (Harvey & Hammer, 1999). IRT models target individual items to validate them, whereas the focus for CTT is at the test-level. Similarly, reliability in a CTT model is predicated on the entire test, while IRT reliability varies across the continuum with more precision at the centre of the continuum (Kean & Reilly 2014).

Developing a new scale is challenging because various validated tools are already available and can frequently be applied or modified for use (Slattery, Voelker, Nussenbaum, Rich, Paniello & Neely, 2011). Indeed, it has been recommended: "as a rule of thumb, never attempt to design a questionnaire…because a good questionnaire is virtually impossible to design." (Field, 2005b, p1.). Hence, the development of the Strathclyde Family Wellbeing Scale involved adapting an inventory, which had been widely used and was well established (see Chapter 6). The next sections summarise some of the recommended methods of scale design.

5.3 Staged approach to scale design

The first step of scale development is deciding on the aim, which incorporates consideration of research design, structure, type of data, and analysis (Slattery, Voelker, Nussenbaum, Rich, Paniello & Neely, 2011). Chapter 6: Methodology sets out the full details for the current study.

5.4 Choice of construct to be measured

The above step is followed by choosing a construct that is to be measured (Field, 2005b), which also requires research of the specific topic being measured. This step can be defined as concept analysis in which the theoretical model is identified, and

definitions of the constructs are established (Oosterveld, Vorst & Smits, 2019). (Clark & Watson, 1995) suggest that in the in the field of human psychology there is effectively an unlimited quantity of psychological constructs that may be converted into scales for measurement. The general consensus for this view is that there is hierarchical sequence of psychological constructs, which vary in terms of their abstraction or range (Comrey, 1988; Watson, Clark, & Harkness, 1994). For example, the study of Personality may comprise a hierarchy of characteristics, beginning with loquaciousness, moving up to wider concepts of sociability, and then reaching a general personality temperament of extraversion (Clark & Watson, 1995). Consequently, it is essential that the range and definition of the construct that is being measured is clarified at the outset of designing the scale. The current study focused on family wellbeing, which involved research on the definition and associated features of this construct in the initial stage of scale development.

5.5 Creation of a pool of items

The next stage in developing an instrument, is to identify and agree on specific items to be included in the tool. According to Clark & Watson (1995), the key objective at this stage is to sample methodically all subject matter that has potential significance to the construct being measured. Application of this approach is to ensure that the original pool of items is wider than the researcher's understanding of the theory underlying the construct and results in content that actually may be excluded following analysis. The rationale for this approach is that future psychometric analyses will reveal items that are weak and unconnected to the construct, and consequently will be eliminated from the developing scale. However, the converse is not true, because such an analysis is unable to identify items that should have been included (Clark & Watson (1995).

This presents a challenge to the researcher when designing an instrument, but another recommendation is that included items must be approved by experts in the subject area and users and individuals who complete the scale, as necessary for further evaluation. (Slattery, Voelker, Nussenbaum, Rich, Paniello & Neely, 2011). Hence, this will help support the creation of an expansive collection of statements or questions, and will also draw on expert knowledge, thereby supplementing the

theoretical knowledge of the researcher. These items must also consistently translate the underlying theoretical concepts contained in the research questions into the instrument and be compatible with the target audience (Rattray & Jones, 2007). In the current study, an existing instrument, the *American Family Strengths Inventory*, was adapted to develop a scale to measure family wellbeing. Permission was granted from the expert authors in the field, Emeritus Professor John Defrain, Extension Specialist, Family and Community Development, University of Nebraska and Emeritus Professor Nick Stinnet, Professor of Human Development and Family Studies, University of Alabama. The American Family Strengths Inventory has been validated via research with more than 24000 family members in the USA and 34 other countries (Defrain & Stinnet, 2008). Hence, expert opinion was drawn upon when developing the Strathclyde Family Wellbeing Scale, which also incorporated without change, statements that had been trialled with thousands of families, thus meeting the criteria for developing a pool of items.

5.6 Scale wording, order and response scale

The language should be clear, uncomplicated and accessible regarding the reading level of the scale's target population (Clark & Watson, 1995), and consideration should be given to an open or closed question format (Slattery, Voelker, Nussenbaum, Rich, Paniello & Neely, 2011). The nature of the questions, language employed, and sequence of items can lead to biased responses. Careful thought is required regarding sequencing of statements/questions, for example, challenging items should be left until later or the end of the scale (Rattray & Jones, 2007). A crucial aspect of scale design is how respondents are asked to complete them (Field, 2004). The variety of scales and response formats can result in a diverse collection of data, which then impacts on the subsequent analysis (Rattray & Jones, 2007).

According to Clark & Watson (1995), the two main response styles in current personality assessment are binary choice responding, such as true/false or yes/no and Likert rating scales with upwards of three choices. There are advantages and disadvantages to both formats. Items included in a Likert scale can be motivating for respondents and individuals often like completing them, which increases the likelihood of engagement, thoughtful answers and consequently higher completion

rates (Robson, 2002). Additionally, binary response formats have been condemned because "multiple-choice item formats are more reliable, give more stable results, and produce better scales" (Comrey, 1988, p.758). On the other hand, this issue might be resolved by scrutinising item frequencies at the development stage and deleting items with exceptionally high or low response rates (Clark & Watson, 1995). Also, binary choice formats can be completed quicker, which potentially increases returns and they may avoid the supposition in Likert scales of equal intervals that might not be accurate (Loevinger, 1957).

The development of the Strathclyde Family Wellbeing Scale utilised a Likert scale response format, which mirrored the same style used in the Stirling Children's Wellbeing Scale (Liddle & Carter, 2015). This was a design decision to acknowledge the ecological progression from a scale to measure individual wellbeing, predicated on Scottish children to a scale to measure family wellbeing predicated on Scottish families.

5.7 Data collection

Carrying out a pilot study is strongly recommended during the development process of a new scale to reveal statements or questions that are inappropriate, poorly worded or inaccessible for the target group (Rattray & Jones, 2007). The sample size can be moderate and convenient, prior to implementing a larger research project (Clark & Watson, 1995). Following the initial pilot, the analysis of results will influence the subsequent practical and theoretical aspects of developing the scale (Clark & Watson, 1995). The initial selection of items included in the Strathclyde Family Wellbeing Scale was piloted with a sample of 48 educational psychologists from across Scotland. Hence, in addition to the items being drawn from an established, widely used instrument developed by experts, the American Family Strengths Inventory (Defrain & Stinnet, 2008), the Strathclyde Family Wellbeing Scale was also tested by Scottish psychologists, who may also be regarded as experts in the field of wellbeing. Conducting a Pilot exercise of the scale has two key aims, to identify weaknesses within the instrument and to investigate the reliability and validity of the scale (Slattery, Voelker, Nussenbaum, Rich, Paniello & Neely, 2011). These concepts are discussed in the next section.

5.8 Psychometric Analysis: validity and reliability

Reliability and validity are psychometric concepts and coefficient measures that are derived from classic test theory (Streiner and Norman, 2008). However, prior to conducting multifaceted structural analyses of scales, the distribution of responses should be explored (Clark & Watson, 1995). This involves detection and deletion of items whose distributions are extremely skewed and unstable. In the case of Likert scales, these are items which triggered similar responses (e.g., "slightly agree"). Removal of these items is justified because they communicate little information ie their variance is small, which also means their correlations with other items will be weak and thus impact on the investigation of scale psychometric structure (Clark & Watson, 1995). Lastly, skewed distributions can result in extremely unbalanced correlations (Comrey, 1988).

In this study, the distribution of items of the T1 results for the Strathclyde Family Wellbeing Scale were examined for normality, by identifying outliers and exploring skewness and kurtosis. Missing values were also addressed through Expectation Maximisation. Chapter 7: Study 1 gives a detailed account of these analyses as well as Validity and Reliability. The next sections explain the concepts of Validity and Reliability

5.9 Validity

Validity refers to the test measuring what it is intended to measure (Slattery, Voelker, Nussenbaum, Rich, Paniello & Neely, 2011). For example, a scale that claims to measure anxiety but in fact measures assertiveness, is not valid (Field, 2005b), however, a depression scale that does measure depression is valid. Evidencing Validity can be challenging but is essential for a measure (Rattray & Jones, 2007. A number of different types of validity exist (Polgar & Thomas 1995, Bryman & Cramer 1997). Table 5.1 summarises the main types.

Table 5.1

Examples of Types of Validity

Table 2. Validity in Order of Power

Face validity	Face validity suggests the instrument appears to measure what it is supposed to measure. An example might be an eye-hand dexterity test to evaluate a component of surgical skill. This is the least powerful validity test.
Content validity	Content validity refers to the fact that the items make sense and comprehensively cover the issue. It requires that the universe of content items germane to the issue be included and that content unrelated to the issue be excluded. A panel of experts and several revisions are usually required. An example might be a series of questions regarding study habits when trying to improve resident selection.
Criteria-related validity	This test of validity compares the new "target test" against a "gold-standard" criterion. This test may be (1) concurrent or (2) predictive.
(1) Concurrent validity	Concurrent validity refers to the target test and the gold-standard criterion being conducted at the same time. An example might be evaluating a new auditory test in comparison with an auditory brainstem test to determine the new test's validity in detecting an eighth nerve dysfunction.
(2) Predictive validity	Predictive validity refers to how well the target test is able to predict the results from a gold-standard criterion obtained at some time in the future. An example might be a clinical tool focused on clinical signs, symptoms, and office tests that might be predictive of magnetic resonance imaging discovery of a solitary vestibular schwannoma.
Construct validity	A construct is a psychological, abstract concept that is difficult or impossible to measure. To determine if an instrument has construct validity, the instrument must have strong content validity relative to the construct to be tested and defined theoretical context. "An instrument is said to be a valid measure of construct when the measurements support these theoretical assumptions."[20] An example might be an instrument to be used in resident selection that might predict how well the resident will ultimately be in the future.

Note. From (Slattery, Voelker, Nussenbaum, Rich, Paniello & Neely, 2011, p. 834). A Practical Guide to Surveys and Questionnaires. *Otolaryngology--Head and Neck Surgery*, *144*(6), 831-837.

Table 5.1 highlights the increasing strength of Validity from Face to Construct Validity, which ideally the scale should achieve. Construct validity refers to how closely the items in the scale represent the underlying theoretical structure. Factor analysis is a statistical method that can be employed to explore the constructs underpinning the emergent scale. Hence, this method can support the investigation of construct validity and confirm if it has been accomplished (Rattray & Jones, 2007).

The Strathclyde Family Wellbeing Scale achieved Face and Content Validity, for the reasons outlined in sections 5.5, 5.6 and 5.7 above, which explained that the origin of the content was derived from the American Family Strengths Inventory (Defrain & Stinnet, 2008). This was devised by experts and used with thousands of families in many different countries. Similarly, the response format was based on the

Stirling Children's Wellbeing Scale (Liddle & Carter, 2015), another established and psychometrically validated instrument. Finally, the scale was piloted with educational psychologists across Scotland and hence the items were further tested by experts in a Scottish context.

Finally, the Strathclyde Family Wellbeing Scale was also subjected to robust Factor Analysis in the form of Principal Components Analysis with strict statistical cut-off thresholds applied, to examine the underlying constructs. This resulted in three clear subscales being identified as underpinning the scale. Principal Component Analysis of the Strathclyde Family Wellbeing Scale is discussed, fully, in Chapter 7: Study 1.

5.10 Reliability

Demonstrating that a scale has Validity is vital but insufficient by itself. The reliability of an emergent scale is also a prerequisite and must be evidenced (Rattray & Jones, 2007). Reliability can be defined as the replicability, stability or internal consistency of a scale (Jack & Clarke 1998). A widely cited method of evidencing reliability is the Cronbach's alpha statistic, which uses inter-item correlations to decide if items measure the same domain (Bowling 1997; Bryman & Cramer 1997). The higher the value of Cronbach's alpha, indicates better levels of internal consistency. Cronbach's alpha should be greater than .70 for a scale in development or .80 for an accepted and recognised scale (Bowling 1997, Bryman & Cramer 1997). The Individual Cronbach's alpha statistic is conventionally reported for each domain in a scale than for the overall scale (Rattray & Jones, 2007). Table 5.2 summarises examples of types of reliability.

Table 5.2

Examples of Types of Reliability

Table 3. Reliability

Test-retest reliability	Testing the same subjects twice, with an appropriate time interval between tests, and getting close to the same result for each subject
Intrarater reliability	Same rater testing the same subjects 2 or more times, with an appropriate time interval between tests, and getting close to the same results for each subject
Interrater reliability	Two or more raters testing the same subjects with the same instrument and getting close to the same results
Internal consistency (homogeneity)	"Internal consistency, or homogeneity, reflects the extent to which items measure various aspects of the same characteristic and nothing else."[20] A classic measure of this is Cronbach's coefficient alpha used with dichotomous or multiple-choice data. A high value of alpha is expected; however, if alpha significantly increases when an item is left out, that would suggest the item might not be homogeneous and could be removed.[6]

Note. From (Slattery, Voelker, Nussenbaum, Rich, Paniello & Neely, 2011, p. 834). A Practical Guide to Surveys and Questionnaires. *Otolaryngology--Head and Neck Surgery*, *144*(6), 831-837.

However, use of Cronbach's alpha to explore internal consistency has been subjected to criticism for variability in reporting thresholds of reliability, because some contemporary researchers claimed values of .60s and .70s were good or adequate (e.g., Dekovic, Janssens, & Gerris, 1991; Holden, Fekken, & Cotton, 1991). It is also argued that Cronbach's alphas are flawed measures of internal consistency because they are influenced by the number of test items and the mean inter correlations between items (Cortina, 1993; Cronbach, 1951). On the other hand, coefficient alphas indicate significant information about the amount of error variance contained in a scale (Cortina, 1993). Additionally, Clark and Watson (1995) emphasised that it is always beneficial to show a scale has an acceptable level of reliability and claimed a coefficient alpha of at least .80 should be obtained for new scales, otherwise, a review of the scale is necessary to improve reliability to an adequate level. Cronbach's alpha is the prevailing indicator of reliability cited in research that rely on a multi-item measurement scale (Hayes & Coutts, 2020). In a

content analysis of psychology journals, where Cronbach's alpha was relevant, it was reported in more than 90% of papers (McNeish, 2018).

Nevertheless, for a variety of technical reasons, including some mentioned above, an alternative to Cronbach's alpha is McDonald's (1999) Omega. One reason is that McDonald's Omega effectively addresses the assumption of equal factor loadings, known as essential tau-equivalence, (including other conditions), frequently overlooked by advocates of Cronbach's alpha. Consequently, it is argued, McDonald's Omega gives a more overall estimate of reliability than Cronbach's alpha, because it does not assume essential tau-equivalence yet reduces to alpha under the assumption of essential tau-equivalence (Hayes & Coutts, 2020). In Chapter 7: Study 1, the statistics for Reliability for both Cronbach's alpha and McDonald's Omega are reported, to demonstrate that a robust measure of the concept was obtained and detailed for the Strathclyde Family Wellbeing Scale.

5.11 Summary

This chapter summarised the main stages in developing a new scale with reference to the development and validation of the Strathclyde Family Wellbeing Scale, which is the aim of the current study. Table 5.3 below is an exemplar, which illustrates and summarises the stages discussed in this chapter, for the development of two scales, the ICEQ and the SNSI. The next chapter is on the Methodology that was employed in developing the Strathclyde Family Wellbeing Scale.

Table 5.3

Exemplar of the development process of two scales: ICEQ and SNSI

Table 4 Development of the ICEQ (Rattray *et al.* 2004) and SNSI (Jones & Johnston 1999)

	ICEQ (Rattray *et al.* 2004)	SNSI (Jones & Johnston 1999)
Purpose	The rationale for this questionnaire was identified from literature. Patients had limited recall of the ICU experience, yet described it as being frightening and persecutory in nature. Reported perceptions of this experience have been linked to poorer emotional outcome. Previous research in this field was mainly qualitative and, therefore, a standardized questionnaire was developed	The main purpose of this measure was to develop a reliable and valid questionnaire to measure the sources of stress for student nurses. Previous research had demonstrated high levels of distress associated with training to be a student nurse (Jones & Johnston 1997). It was important to identify the sources of stress for students, to inform a stress management intervention (Jones & Johnston 2000)
Research questions	Research questions were identified	A four-factor structure was hypothesized including academic load, clinical concerns and interface worries
Scale and response format	Likert-type and frequency scales with a five-choice format. Three open questions included	Likert-type items with a five-choice format
Generation of items	Items generated from experts, literature review and an underlying theoretical structure of five domains was proposed. Thirty-eight items generated, randomly placed throughout the measure, with a mix of positively and negatively worded items	An existing questionnaire with 43 items (Beck & Srivastava 1991). Fifteen additional items were generated from literature review and student feedback
Test and pilot of items	Pilot work: 34 patients interviewed	Pilot work was with a large data set of 320 students
Amendments based on item analysis or related techniques	Amendments made using criteria presented in Table 1. Eighteen items were removed, 11 were added leaving a 31-item questionnaire. Research questions revisited. Again the underlying theoretical structure of four domains was proposed	Item reduction carried out using exploratory factor analysis methods, rather than item analysis. Unrotated PCA. Weak Items (failing to load above 0·39) and general items (loading at or above 0·40 on more than one factor in the unrotated solution) were deleted in an iterative process
Principal component's analysis	Administered to 109 patients as part of a structured interview. Pre-analysis check ensured data were appropriate. Unrotated PCA Varimax rotation Factors with a loading of ≥0·4 on one factor only were retained. Items were reduced from 31 to 24. Four domains were identified	Forty-three plus 15 items were administered to 320 students. Pre-analysis check ensured data were appropriate. Oblimin rotation Items were reduced to a 22 item simple oblique solution. Four subscales were identified, academic load, clinical concerns, interface worries and personal problems
Reliability	Cronbach α statistic for each domain was ≥0·7	Cronbach α statistic for each domain was ≥0·73 (interface worries in an initial data set α 0·68)
Validity	Concurrent validity established by correlating domain scores with scores from two measures with demonstrated validity, e.g. Hospital Anxiety and Depression Scale, Impact of Event Scale	Concurrent validity was shown by correlating SNSI subscale scores with GHQ 30 (continuously scored). Discriminant validity demonstrated with distressed students scoring higher on all SNSI subscales
Confirmation on an independent data set	Data is being gathered to confirm the four-factor structure of the ICEQ	Four-factor structure was confirmed on an independent data set ($N = 195$) using exploratory and confirmatory factor analytic techniques (Deary *et al.* 1993)
Revision of measure		A revised 49-item version of the SNSI is currently in development (Jones & Johnston 2003)

Note. From Rattray, J., & Jones, M. C. (2007, p. 241). Essential elements of questionnaire design and development. *Journal of clinical nursing*, *16*(2), 234-243.

Part B Methodology, Results, Conclusions and Implications: Chapters 6 – 10

CHAPTER 6 METHODOLOGY

6.1 Research overview

This thesis reports the findings from three studies, which aim to validate the Strathclyde Family Wellbeing Scale and explore its effectiveness as a tool to measure family wellbeing and to measure outcome and impact of family-based interventions. Study 1 details the process to develop and validate the Strathclyde Family Wellbeing Scale. Study 2 explores the utility of the Strathclyde Family Wellbeing Scale to measure the outcome and impact of family-based interventions. Study 3 is a qualitative investigation and cross-validation of findings from studies 1 and 2, involving families and the Family First Service.

6.2 Research aims

The aims of the investigation were to:

1. Explore and determine the underlying dimensions of the Strathclyde Family Wellbeing Scale (FWS) using Principal Components Analysis (PCA)/ Principal Axis analysis.
2. Investigate the utility of the Strathclyde Family Wellbeing Scale using factor scores from the Principal Component Analysis as a measure of outcome and impact and as a measure of its utility to measure outcome and impact of family-based interventions.
3. Investigate further the validity of the scores derived from the Strathclyde Family Wellbeing Scale by cross-validating findings with the pilot sample of families and the Family First Service who will be involved in interviews. Data will be collected by semi-structured interviews and focus groups and analysed by thematic analysis (Braun & Clarke, 2006).

6.3 RESEARCH DESIGN

6.3.1 Context

The Family First Service, which operates in Council X, was utilised by the researcher to help conduct this research. The Family First Service supports families to improve the quality of family life by improving their wellbeing. They take an evidence-based approach by obtaining data to demonstrate their impact on the family. This also helps the family to reflect on their wellbeing and identify strategies to improve it. Consequently, the Family First Service was asked to pilot and complete the Strathclyde Family Wellbeing Scale with families that had been referred to them.

6.3.2 Method

Qualitative and quantitative methods were employed to obtain data to investigate the development and validation of the Strathclyde Family Wellbeing Scale.

6.3.2.1 Quantitative

This research project may be categorised as being primarily a non-experimental fixed design model (Robson, 2002). It aimed to investigate the group tendencies of families concerning family wellbeing and adopted a particular method of data collection, focusing on the use of a quantitative strategy via the development and application of the Strathclyde Family Wellbeing Scale to measure family wellbeing. Consequently, the research was strongly linked to theory, both in terms of theories of wellbeing (Aked, Marks, Cordon & Thompson, 2008), and the theoretical procedures established for scale design and development (Field, 2005b).

6.3.2.2 Qualitative

There is also an element of flexible research design via the collection of qualitative data using semi-structured interviews and focus groups to provide external evidence to triangulate with the results of the Strathclyde Family Wellbeing Scale to validate the scale. This contributed to the evaluation of the impact of the Family First Service on wellbeing in families. Interviews are appropriate for this purpose where a quantitative study has been carried out, and qualitative data are required to validate particular measures or to clarify and illustrate the meaning of the findings (King,

1994). Similarly, a focus group can be an antecedent to the development of a more structured instrument (Robson, 2002; Hyland et al, 1994), such as the Strathclyde Family Wellbeing Scale.

6.3.3 Epistemology

The researcher adopted an epistemological stance of critical realism for this research and concurred with the view that it is compatible with social research characterised by a scientific approach (Robson, 2002). In this study, a scientific methodology was encapsulated in a systematic approach, to develop the Strathclyde Family Wellbeing Scale, following recognised procedures, underpinned by a sceptical and ethical standpoint (Robson, 2002). Realism has also been cited as being particularly suitable for research in practice, such as social work (Anastas, 1998), because it is fundamentally constructed on a set of values. In this case, the Family First Service supports family wellbeing on a similar basis, by adopting a relationship, value-based approach. Examples of realism being utilised in a range of disciplines include education (Nash, 1999; Scott, 2000) and psychology (Fletcher, 1996; Shames, 1990). This study involved both education and psychology and hence reflected these disciplines and the application of critical realism.

As discussed in section 6.3.2.1, This research project is primarily a non-experimental fixed design model, for the following reasons. It explored the group tendencies of families regarding family wellbeing and employed a particular method of data collection, utilising a quantitative strategy through the development and application of the Strathclyde Family Wellbeing Scale to measure family wellbeing. Consequently, the research was closely connected to theory, both in terms of the theories of wellbeing (Aked, Marks, Cordon &Thompson, 2008), and the theoretical procedures established for scale design and development (Field, 2005a). Hence, it is theory driven.

The researcher remained emotionally and physically distant from the study, by being detached from the direct collection of scale data from families, which was carried out by the Family First Service, which also reflects a non-experimental fixed design model (Robson, 2002). Crucially, fixed designs should always be piloted (Robson, 2002), and a pilot exercise was first carried out with educational

psychologists across Scotland following the developmental stages of the Strathclyde Family Wellbeing Scale. Data collected by the Strathclyde Family Wellbeing Scale was then analysed using the statistical programme SPSS. These features of the research project articulate well with the definition and description of fixed design research models by Robson (2002).

6.3.4 Participants

1. Parents/carers of families with children referred to the Family First Service in Council X.
2. Practitioners from the Family First Service (for the Focus Group)

6.3.4.1 Method of recruitment

Recruitment of families to complete the Strathclyde Family Wellbeing Scale was on a voluntary basis via the Family First Service. Families living in Council X may be referred to the Family First Service by self-referral, schools or agencies such as Social Work or Educational Psychology. Leaflets in public spaces advertise the Service and referral is made by completing a 'Notification Form', which is emailed to the Family First Service. Hence, the process of consent has already been partly addressed at this stage.

The criteria for referral to the Family First Service is to work with children and young people between the age of 0 and 11 years, and their families, who are resident in Council X and require 'some support' ie have not yet been referred to statutory serves. Family First offers support and advice on emotional and financial issues, which impact on family wellbeing such as school, health, home, money, parenting, and confidence building. Examples of types of support include linking with schools to improve family engagement and attendance, and advice on sleep routines and behaviour management. They also sign post families to the Council X Money Advice and Rights Team (MART).

Practitioners from Family First engaged with the family to develop a relationship with them and aimed to complete the Strathclyde Family Wellbeing Scale for the first time on the first or second session unless there were exceptional circumstances, for example, illness in the family. The scale measured impact and any

progress overtime and was repeated towards the end of the support offered by practitioners.

All families were invited to participate in the interviews and could contact the researcher directly or via the professional from the Family First Service if they wished to participate. This was stated in the Participant Information and Consent Form for Families (Appendix 6). The Participant Information and Consent Form informed participants that the primary aim of the research was to develop and test whether a valid and reliable scale can be developed to measure wellbeing in families. A second research aim was to collect data to enable the Family First Service to measure their impact and understand what is working well and how they might adapt their service to improve their support to enhance family wellbeing. There were no payments, expenses or other incentives involved in recruitment.

6.3.4.2 Inclusion Criteria for families

Criteria for inclusion in the research was based on families who were successfully referred to the:

(a) Family First Service and gave

(b) Informed consent to take part.

(a) Family First Service

The researcher collected data using the Strathclyde Family Wellbeing Scale from families who had been referred to the Family First Service. Families cannot be referred to Family First if they are already involved with statutory services such as Social Work, because Family First are an early intervention and prevention Service that work with families before, they become involved with such services.

(b) Informed consent from all participants to take part.

The parents/carers of families working with the Family First Service were asked by the practitioners to complete the Strathclyde Family Wellbeing Scale voluntarily. A Participant Information Sheet and Consent form (Appendix 6) was developed by the researcher and distributed to the Family First Service, which was then given to families who participated**.** The procedures for obtaining informed consent are set out in the Ethics section.

6.3.4.3 Exclusion criteria

1. Families who do not live in Council X
2. Families with children who do not meet the age criteria specified by Family First
3. Families already involved with statutory services such as Social Work.
4. There were no exclusion criteria based on gender, special skills, attributes, or medical conditions.

6.4 SAMPLE SIZE

6.4.1 Scales

The number of participants estimated for a sample to complete the Strathclyde Family Wellbeing Scale for ethical approval was explored using:

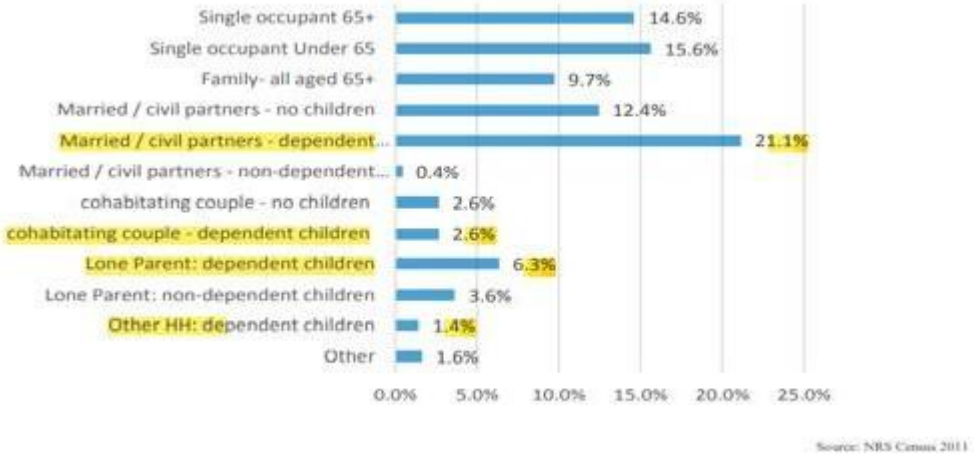
(1) Data on population size in Council X and online sample size calculators
(2) Published research articles.

(1). Data on household population size in Council X and online sample size calculators

Statistics on households in Council X indicated that from 2011 to 2018, the number of households rose by 4.8 per cent to 39, 108 (*Planning for the future – Council X Key demographic trends | December 2019 Version 14 Year 6)*. Figure 6.1 below shows Households by composition.

Figure 6.1

Households by composition in Council X



Note. From (Planning for the future – Council X Key demographic trends | December 2019 Version 14 Year 6).

From the graph, the total percentage of households with dependent children (highlighted in yellow) is 31.4%. Consequently, an approximate number of families that could potentially be referred to the Family First Service = 31.4% of 39108 (no. of households in Council X) = 12280**.** Hence, 12280 families is an approximate figure of the total population size. However, that figure is likely to be substantially smaller because families that are referred to Family First must meet referral criteria stipulated by the Service and require support for some aspect of wellbeing. Most of the 12280 families will not be in that category.

Three different online sample calculators (Table 6.1), using a population of 12280, Confidence interval 95% and margin of error 5% gave ideal sample sizes of 373.

Table 6.1

Online sample calculators

Sample Calculator	**Website**	**Sample Size**
Qualtrics	https://www.qualtrics.com/uk/experience-management/research/determine-sample-size/?rid=ip&prevsite=en&newsite=uk&geo=GB&geomatch=uk#calculator	373
Calculator.net	https://www.calculator.net/sample-size-calculator.html	373
Creative Research Systems	https://surveysystem.com/sscalc.htm	373

However, the researcher concluded that the sample size was likely to be significantly lower than 373 due to the reasons discussed above regarding an approximate population of 12280 and considering the referral criteria and need for support.

(2). Research papers on sample size

Various recommendations of minimum sample sizes have been made to examine the psychometric properties of a new measure, in this case, the new measure is the Strathclyde Family Wellbeing Scale. One systematic literature review of sample sizes used to validate a scale, concluded that the sample size determination for psychometric validation studies was rarely ever justified a priori, which highlighted the lack of sound recommendations on this topic (Anthoine, Moret, Regnault, Sbille & Hardouin, 2014). Another psychometric validation study reported that there are no "gold-standard recommendations concerning quantitative methods for planning sample sizes for confirmatory factor analyses" (Junne, Ziser, Mander et al.2016). However, both papers cited recommendations for appropriate sample sizes, as did others. Recommendations ranged from 2 to 20 items per subject (Hair, Anderson, Tatham and Black, 1995; Kline, 1979), 5:1 (Gorusch, 1983), 10:1 (Nunnally, 1978; Schwab, 1980) and 15:1 (Mertens, 1998). Based on previous research and the studies included in, *A Review of Scale Development Practices in the Study of Organizations*, a sample of 150 seemed to be the minimum acceptable for scale development (Hinkin, 1995).

The Strathclyde Family Wellbeing Scale consisted of 16 items. Ratios of 10:1 and 15:1 gave sample sizes of between 160 to 240. Considering a minimum sample of 150 (Hinkin, 1995), the researcher obtained ethical approval for a sample of 150, which was added to the existing secondary scale data, completed by families from the Family First Service, taking the sample to over 200, which was described as 'fair' (Comrey & Lee, 1992).

6.4.2 Semi-structured interviews (Appendix 1)

Quantifying the number of interviews to be conducted with families was complex. The National Centre for Research Methods discussed this in a Review Paper: *How many qualitative interviews is enough?* (Baker & Edwards 2012). Baker and Edwards (2012) compiled the views of 14 renowned social scientists and 5 early career researchers. The answers to the question of 'how many' were often met with 'it depends' but on what it depended was guided by taking into account the epistemological, methodological and practical issues when conducting research projects. This included advice about assessing research aims and objectives, validity within epistemic communities and available time and resources.

Various comments and suggestions about interview numbers were made including, about 20 to 30 depending on whether it is undergraduate or postgraduate research and taking time constraints and other issues into account, (Adler, P.A. and Adler, P., 2012). Also, the only possible answer is to have enough interviews to say what you think is true and not to say things that you do not have the numbers for (Becker, 2012). Brannen (2012) mentioned about 40 for doctoral research but noted this number had reduced and pointed out that sample size per se may not be the overriding factor but the inclusion of a particular case.

Bryman (2012) systematically considered issues such as *saturation*, *heterogeneity* of the population and the *breadth and scope of research questions* and highlighted suggested minimum requirements of sample size for qualitative studies. For example, Warren (2002) stated a minimum of 20-30 for an interview-qualitative based study to be published. Mason (2010) investigated the abstracts of doctoral theses linked to interview-based qualitative studies in Great Britain and Ireland and found the mean number of interviews was 31 and the median 28. The number of

interviews conducted was based on this research, and the epistemological, methodological and practical issues in this study.

This research was not an interview-based qualitative study but primarily a fixed design incorporating a quantitative strategy. There were time constraints on the researcher, including practitioners in the Family First Service and families who participated. Consequently, the researcher concluded that up to 12 semi-structured interviews, if possible, with families was sufficient, but five interviews were conducted.

6.4.3 Focus Group (Appendix 2)

Focus groups consist of groups of 8-12 participants (Stewart & Shamdasani, 1990) but smaller groups have also been used (Robson, 2002). The Family First Service is small comprising of six individuals, hence a sample of one focus group captured the entire population of practitioners within the Service.

6.5 PROCEDURES

6.5.1 Strathclyde Family Wellbeing Scale (Appendix 3)

Discussions with Family First suggested that a minimum of 10-12 sessions are usually delivered to support families. Consequently, it was agreed that the scale would be completed on the ***first or second session*** at the latest, unless there were exceptional circumstances. This was necessary to ensure consistency of practise and to measure accurately the impact that practitioners have on families. If carried out after that, their level of family wellbeing may already have changed since the practitioner contacted them to offer support. The scale was then repeated after **10-12 sessions** and had to be done by the **12th session at the latest,** even if they intended to continue working with the family. This requirement, again, ensured consistency of application of the scale.

This also reflects similar practice in session delivery in other counselling organisations (The Association for Family Therapy and Systemic Practice, 2021; British Association for Counselling and Psychotherapy, 2017)**.** However, Family First Service input may not require 10-12 sessions, in which case the scale was repeated at the final session with the family. This reflected real world research and the individual nature of the support required from families depending on their issues.

This guidance was stated in ***Guidance on the administration of the Family Wellbeing Scale,*** which was drafted to support the Family First Service administer the scale and to ensure consistency (Appendix 4).

6.5.2 Semi-structured Interviews

Semi-structured interviews were carried out with families to obtain their views on their experience of completing the Strathclyde Family Wellbeing Scale. These took place after a significant proportion of families completed the scale. The interview schedule is contained in appendix 1.

6.5.3 Focus Groups

A focus group was carried out with practitioners from Family First. (See Appendix 2: Focus Group Schedule).

6.5.4 Data Collection

Practitioners from the Family First Service completed the Strathclyde Family Wellbeing Scale with families, using paper copies of the scale or an electronic version on Microsoft Forms. The scores were coded by them and stored on secure, password protected confidential databases maintained by the Family First Service. Only completely anonymous scale data, semi-structured interviews and focus groups were stored on the University of Strathclyde's One Drive. The researcher did not have the code to identify families and therefore the data was anonymous. The raw scale data passed to the researcher was stored on the University of Strathclyde's One Drive and was only accessible to him. The Family First Service had access to the scale data but not the interview or focus group data. All data will be anonymised in any research outputs.

6.6 ANALYSIS OF DATA

6.6.1 Scale design to develop the Strathclyde Family Wellbeing Scale

Research on scale design was used to develop the Strathclyde Family Wellbeing Scale, which involved adaptation of the American Family Strengths Inventory (Defrain & Stinnet, 2008). Permission was given by the authors. This involved transforming the inventory, which contained 88 statements into a 5-point likert scale

containing 16 statements. The procedures recommended by Field (2005b) were followed and are summarised in table 6.2.

Table 6.2

Recommended procedures for scale design

Stage	Procedure / Recommendation	Action/Description	Source/Reference
1	Choose a construct	Family Wellbeing	*American Family Strengths Inventory (Defrain & Stinnet, 2008*)
2	Decide on a response scale	*Likert 5-point scale:* Never (1) Not much of the time (2) Some of the time (3) Quite a lot of the time (4) All of the time (5)	*Stirling Children's Well-being Scale (2015)*
3	Generate your items	16 items	*American Family Strengths Inventory (Defrain & Stinnet, 2008*)
4	Collect the data: 1 Pilot Sample 50 – 100) 2. This research study	 48 pre and post scales 238 pre and post scales	Educational Psychologists in Scotland Families in X Local Authority
5	Psychometric Analysis	Reliability and validity	Principal Components analysis)/ Principal Axis analysis as appropriate via SPSS

Family participants were asked to complete the Strathclyde Family Wellbeing Scale on their own or in discussion with practitioners from the Family First Service. Practitioners built trust with the family and asked for consent to complete the Strathclyde Family Wellbeing Scale with them, as per *Participant and Information and Consent Sheet*. This was done on the first or second visit. The scale was repeated towards the end of the input from Family First to obtain a pre and post intervention score.

6.6.2 Principal Components Analysis (PCA)

Principal Components Analysis was used to determine the underlying dimensions of the Strathclyde Family Wellbeing Scale (FWS), and to investigate the utility of the Strathclyde Family Wellbeing Scale using factor scores as a measure of outcome and

impact and as a measure of its utility to measure the outcome and impact of family-based interventions. The rationale for using PCA rather than the factor analysis technique of Principal Axis factoring is explained below.

Factor analysis (FA) is a data reduction technique, which takes a large group of variables and then reduces them to a smaller group of factors or components (Pallant, 2020). Hence FA is used by researchers who are developing scales, as in this study, to reduce numerous scale items with which they started, to a smaller number of items, from which subscales may be created. Factor analysis incorporates a range of different, but related techniques, such as principal components analysis (PCA) (Pallant, 2020). PCA is a multivariate technique for identifying the linear components of a set of variables (Field, 2005a) and similarly investigates the relationships between variables enabling decisions to be made, in scale development, as to whether to retain or delete surplus items (Anthony, 1999). Thus, PCA can reveal the related underlying constructs or subscales of a scale (Oppenheim, 2000; Ferguson & Cox 1993).

Although similar in application and outcome, and the terminology is frequently used interchangeably, differences exist between FA and PCA. In PCA the original variables are reduced to a smaller number of linear combinations, utilising the entire variance contained in the variables (Pallant, 2020). In FA, just the shared variance is analysed, from factors derived from a mathematical model (Tabachnick & Fidell, 2013). Consequently, a debate exists between researchers regarding which method to use. Some favour FA (Bentler & Kano, 1990; Floyd & Widaman, 1995; Gorsuch, 1990), while others claim there is virtually no difference between them or that PCA is better (Guadagnoli & Velicer, 1988; Schoenmann, 1990; Steiger, 1990; Velicer & Jackson, 1990).

In this study PCA was selected rather than FA, because it is psychometrically robust, less complicated mathematically and circumvents any issues with determining factors, which can arise with FA (Stevens, 2002). FA is recommended if the focus is on a theoretical solution unaffected by unique and error variability (Tabachnick & Fidell, 2013). PCA is essentially a data reduction method (Costello & Osborne, 2005), and the purpose of this study was to develop a practical instrument to measure family wellbeing, not to obtain a theoretical solution. Hence, PCA was a

sound and valid method to conduct factor analysis on the 16 items of the Strathclyde Family Wellbeing Scale.

6.6.3 Semi-structured Interviews

Semi-structured interviews were conducted with 5 families to cross-validate the Family Wellbeing Scale and to clarify the nature of the findings (King, 1994). Consent from participants to audio record the interviews was obtained. The recordings were then transcribed by and independent professional. An interview schedule for the semi-structured interviews was followed (Robson, 2002). (Appendix 1).

6.6.4 Focus Group

A Focus group was carried out by the researcher with the Family First Service. Individual interviews were also offered as an alternative to professionals, if preferred. Focus groups can be an antecedent to the development of a more structured instrument (Hyland et al 1994), which in this case was the Strathclyde Family Wellbeing Scale. Consent from participants to audio record the focus groups were sought, then transcribed by an independent professional. The researcher was conscious of the advantages and disadvantages of focus groups (Robson, 2002), and mitigated them by developing a schedule for the focus group (Appendix 2).

6.6.5 Solution Focused approaches

Solution focused approaches and questions for debriefing families after conducting semi-structured interviews and focus groups were utilised (Bavelas, De Jong, Franklin, Froerer, Gingerich, Kim, Korman, Langer, Lee, McCollum, Jordan & Trepper, 2013). See Appendix 4 for examples of questions and the approach to be taken.

6.6.6 Thematic Analyses

The qualitative data obtained from the semi-structured interviews and focus groups were analysed using thematic analysis following the procedures of Braun and Clark (2006). The template of procedures (Braun & Clark, 2006) is contained in Table 9.1, Chapter 9.

6.7 ETHICAL ISSUES

This study was conducted in accordance with the British Psychological Society's Code of Ethics and Conduct (BPS, 2009) and Code of Human Research Ethics (2014) and the Health Care and Professions Council's Standards of Conduct, Performance and Ethics (SCPE) (HCPC, 2012). Ethical approval for this study was granted by local authority's Educational Psychology Service and the University of Strathclyde Ethics Committee in 2022.

6.7.1 Scale data collection

Initial data collection using the Strathclyde Family Wellbeing Scale was delegated to the Family First Service. Family First work with families of children 0-11years and operate within Council X Education Service. They are an early intervention and prevention service, building parenting capacity and preventing families from requiring further support from statutory services such as Social Work. Family First practitioners are members of the Protecting Vulnerable Groups (PVG) membership scheme, which is managed and delivered by Disclosure Scotland. It ensures people whose behaviour makes them unsuitable to work with children and protected adults cannot do regulated work. Practitioners have a range of qualifications and extensive experience working with children and families. The researcher works with Family First on a consultancy basis and provided training on the Strathclyde Family Wellbeing Scale. Hence, Family First were a responsible and skilled agency to conduct data collection.

6.7.2 Training and guidance on the administration of the Strathclyde Family Wellbeing Scale (FWS) (Appendix 4)

The researcher delivered training on how to administer the Strathclyde Family Wellbeing Scale and developed a guidance document: ***Guidance on the administration of the Family Wellbeing Scale*** (Appendix 4).

6.7.3 Semi-structured interviews/Focus Group data

This data was also not collected by the researcher, to avoid the possibility of coercion or bias and increase the objectivity of the data collected. The trainee educational

psychologist and the assistant psychologist within the Educational Psychology Service conducted the focus group and semi-structured interviews. They had been PVG checked by Disclosure Scotland and were fully briefed beforehand by the researcher and supervised after conducting interviews and the focus group.

6.7.4 Consent (Appendix 5 and Appendix 6)

Completion of the Strathclyde Family Wellbeing Scale (FWS) was voluntary and partly at the discretion of the Family First Service. Families had agreed to referral to the Family First Service so there was already partial consent. Practitioners gave the Participation Information Sheet and Consent form to parents and ensured they fully understood the purpose of completing the Strathclyde Family Wellbeing Scale and the research that was being conducted to validate the scale. Participants signed the form or gave verbal consent, if the scale was being completed by telephone or online, which was then recorded by practitioners.

Practitioners could read the scale to participants or participants could complete it independently. Practitioners ensured that participants understood each of the statements to obtain as accurate a measure of family wellbeing as possible. The scale was completed on paper or electronically via the link to Microsoft forms.

6.7.5 Procedures if participants became distressed

Guidance on the administration of the Family Wellbeing Scale contained advice to practitioners administering the scale, if participants became distressed (Appendix 4). Examples of advice included pausing the process and giving time to reflect on whether they wished to continue. They could also be offered further support from the Service Manager or be directed to services such as NHS 24 and Breathing Space.

6.7.6 Impartiality

The Family First Service were informed that it was to be used with families, partly at their discretion, independently and impartially using their professional judgement. ***Guidance on the administration of the Family Wellbeing Scale***, was developed to support a consistent and objective approach to application of the scale by practitioners, to reduce bias, unintentional or otherwise. Hence, scores from the scale

were obtained without influence from the researcher. Impartiality was enhanced in respect of the focus group and semi-structured interviews with families and professional practitioners, because they were not conducted by the researcher to avoid any possibility of coercion and ensure views were freely expressed by participants.

6.7.7 Confidentiality

Families were told via the Participation Information Sheet (PIS) and Consent Forms (Appendix 6), that only the anonymised answers to scale data were shared with the researcher. Prior to sharing their answers with the researcher, practitioners from Family First assigned a code number to the personal information, but the researcher did not know or have access to this number, which identified the family. Hence, all scale data given to the researcher was completely anonymous. The PIS and Consent forms for families also informed families that only the researcher had access to anonymous, transcribed interview data. The audio recordings of interviews were transcribed, and any potentially identifiable information removed. Audio recordings were deleted after the transcription process was completed. Location names in Council X are referred to as LOCALITY 1, LOCALITY 2, LOCALITY 3 etc. up to LOCALITY 10 in the thesis to ensure anonymity.

6.7.8 Data collection, storage and security

Scale Data

Personal details that were collected were age range, gender, geographical location and number of members in the family, as well as the scores for each of the 16 items in the scale. See 6.5.4 for full details of collection procedures.

Semi-structured interviews and focus group data

1. Collection

Semi-structured interviews with families and the focus group with the Family First Service were conducted by the trainee educational psychologist and assistant psychologist (see 6.7.3). This avoided unintentional coercion or bias and increased the objectivity of the data collected.

The interviews and focus groups were audio recorded and then transcribed by an independent professional, which also enhanced objectivity and reduced potential bias. Family First Service staff had access to scale data, but not to data from interviews. The transcription process of the audio recordings of interviews removed any potentially identifiable information of the participants.

2. Storage and security

Semi-structured interviews with families and the focus group with professionals were treated as confidential, and the raw data anonymised as previously detailed, by removing potentially identifiable information. Audio recordings of the focus group and interviews were stored securely on the University of Strathclyde's One Drive and subsequently analysed using Thematic Analysis (Braun & Clarke, 2006). The audio recordings were deleted after being transcribed.

Audio recordings were made using an encrypted device (iPad), using only the audio record function. The recordings were stored on this password protected device, which was locked in a secure location in Council offices, before being transcribed. The PIS and Consent Forms for families and professionals provided information on data collection, storage and security.

The researcher was aware of the risk factors involved with the Family First Service, having responsibility for handling raw data and had regular discussion with the Service about data collection.

6.7.9 Debriefing participants

Practitioners were directed to discuss scores obtained on the Strathclyde Family Wellbeing Scale when repeated with families at the point of discharge. This enabled participants to see any progress that was made with family wellbeing since support was given. Prompts were suggested to assist the debrief process and ensure positive, solution-oriented approaches were adopted (Harker, Dean & Monsen, 2017). This reinforced the strength-based, positively worded principles on which the Strathclyde Family Wellbeing Scale was developed. Details are contained in *Guidance on the administration of the Family Wellbeing Scale* (Appendix 4). Hence, families were debriefed on the impact of the Family Wellbeing Scale and its ability to measure change and improvement in family wellbeing.

6.7.10 Participant Information sheets (PIS) and Consent Forms

Participant Information sheets (PIS) and Consent Forms were drafted and given to families and professionals who participated in the study. They explained the purpose of the study and issues such as confidentiality and what participants would be asked to do. (Appendices 5 and 6).

6.7.11 Publications

Future publications will not include any personal information that could identify participants. This will also include removing information that could lead to 'jigsaw identification' where individuals could piece together data, possibly from a range of sources, to identify participants. De-identified scale data, focus group and interview responses were only shared with the researcher. Any publications will be based on this anonymous data and a thematic approach focusing on key findings will be taken.

No attributable direct quotations will be used in publications to ensure individuals who participated in any focus groups or semi-structured interviews will remain unidentifiable. Names or references to localities where professional participants work will be removed and any other information that may identify them. Results and findings reported will be supported by reference to themes that have emerged from the data rather than specific quotes from any individuals.

Chapter 7 RESULTS AND ANALYSIS OF STUDY 1

Study 1 Development and Validation of the Strathclyde Family Wellbeing Scale (SFWS).

7.1 Rationale and Aims

Study 1 aimed to explore and determine the underlying dimensions of the Strathclyde Family Wellbeing Scale (FWS) using Principal Components Analysis (PCA). The rationale for using PCA rather than Principal Axis analysis was explained in Chapter 6 Methodology. Hence, Study 1 focuses briefly on the background of the small preliminary pilot of the scale which formed a piece of action research and then specifically on the design, procedures and analysis of the Strathclyde Family Wellbeing Scale in the current study.

7.2 Methodology

See Chapter 6 on Methodology for full details of the study.

7.3 BACKGROUND TO THE DEVELOPMENT OF THE STRATHCLYDE FAMILY WELLBEING SCALE

Chapter 6: Methodology summarised the steps taken to adapt The American Family Strengths Inventory (Defrain & Stinnet, 2008*).* The researcher in the original action research review of family wellbeing, identified the American Family Strengths Inventory (Defrain & Stinnet, 2008), as potentially suitable for adaptation into a scale. An inventory is a checklist of items, and the AFSI requested participants to respond to them by placing an "S" (for strength) beside the qualities they felt their family had achieved, a "G" beside those qualities which were an area of potential growth, and "NA" if non-applicable (see 2.3.1). This can be distinguished from a likert scale, which is a quantitative measure of a construct. The American Family Strengths Inventory (Defrain & Stinnet, 2008) had also been validated via research with more than 24000 family members in the USA and 34 other countries around the world since 1974 (Defrain & Stinnet, 2008). Hence it had a strong evidence base. The researcher corresponded with the authors, Emeritus Professors John Defrain and Nick Stinnet, regarding the development of a Family Wellbeing Scale and sought permission via email to adapt their inventory into a scale, which was granted.

Professor Defrain confirmed that the inventory had not been validated on a population in Scotland.

7.3.1 Adaptation of the American Family Strengths Inventory (AFSI)

The author initially reviewed the 88 items and 7 subcategories comprising the AFSI, with the aim of reducing the number of items, to a manageable sized, short-form scale, with potential to be piloted to measure family wellbeing. An initial comparison with other wellbeing models and scrutiny of the wording of items in the AFSI determined which items to retain or reject.

7.3.2 Comparison with other wellbeing models

A comparison of the AFSI with aspects of the National Practice Model wellbeing indicators (Scottish Government, 2008), Family Wellbeing Domains (Natcen, 2012) and OECD Quality of Life well-being framework (2013), was carried out to investigate the link between the concepts of family strengths and individual and family wellbeing (Figures 7.1, 7.2 and 7.3). While the comparisons did not map directly, many features were clearly related, and provided support for an overarching concept of wellbeing. The comparison assisted decision making regarding the inclusion or exclusion of items from the AFSI to reduce the checklist to a more manageable format for initial piloting.

The author particularly focused on the SHANARRI wellbeing indicators*: Safe, Healthy, Active, Nurtured, Achieving, Respected, Responsible* and *Included* (Scottish Government, 2008). Compatibility with the National Practice Model (Scottish Government, 2008) was important given its application across health, education and social work sectors. This ensured the proposed scale articulated well with current practice in these areas, increasing its utility. The author adopted a culturally sensitive and pragmatic stance, while conducting the comparison and did not include some items, which were worded in a way, which may not have been compatible with broader cultural sensitivities. The author was aware of potential subjective bias informing these decisions. Some examples of excluded items from the AFSI were:

'We benefit in many ways from a belief in a higher being'.

'It is easy to share our spiritual values and beliefs with each other'

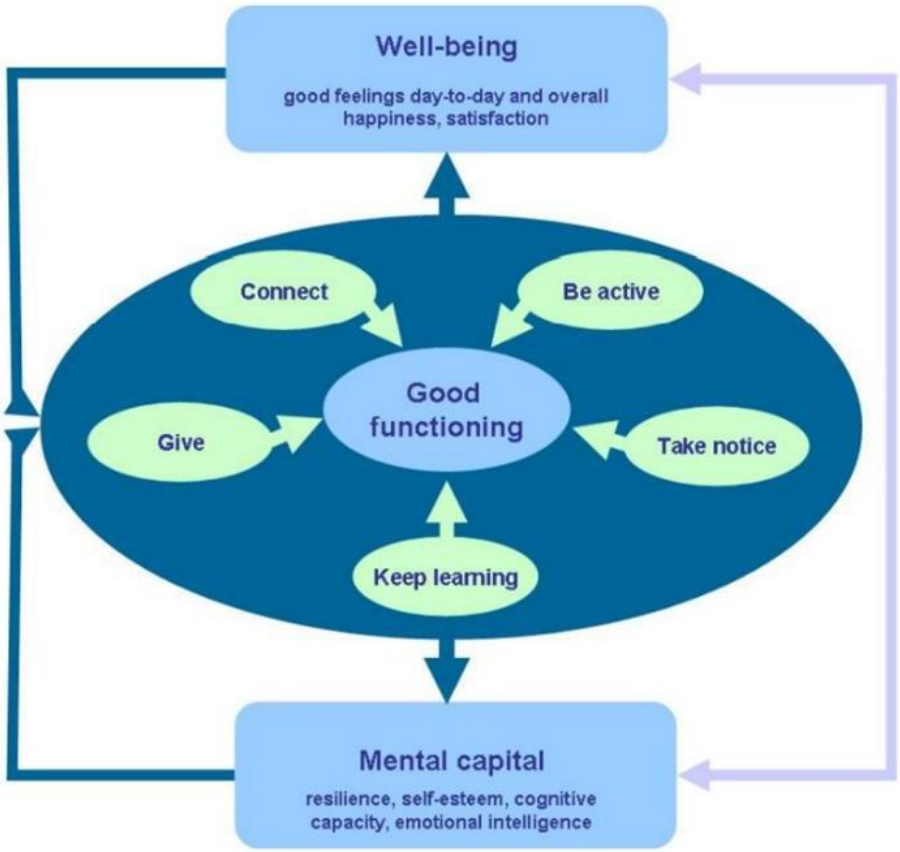
'We enjoy having unplanned, spontaneous activities together'.

The first two items excluded that are listed above are from the Spiritual Wellbeing dimension of the AFSI and were excluded because it "is possibly the most controversial finding in our research" (Stinnet & DeFrain, 1988, p. 65). Controversial items in the Strathclyde Family Wellbeing Scale may act as a barrier to families completing the scale and were therefore avoided.

Comparison with other models of wellbeing

Figure 7.1

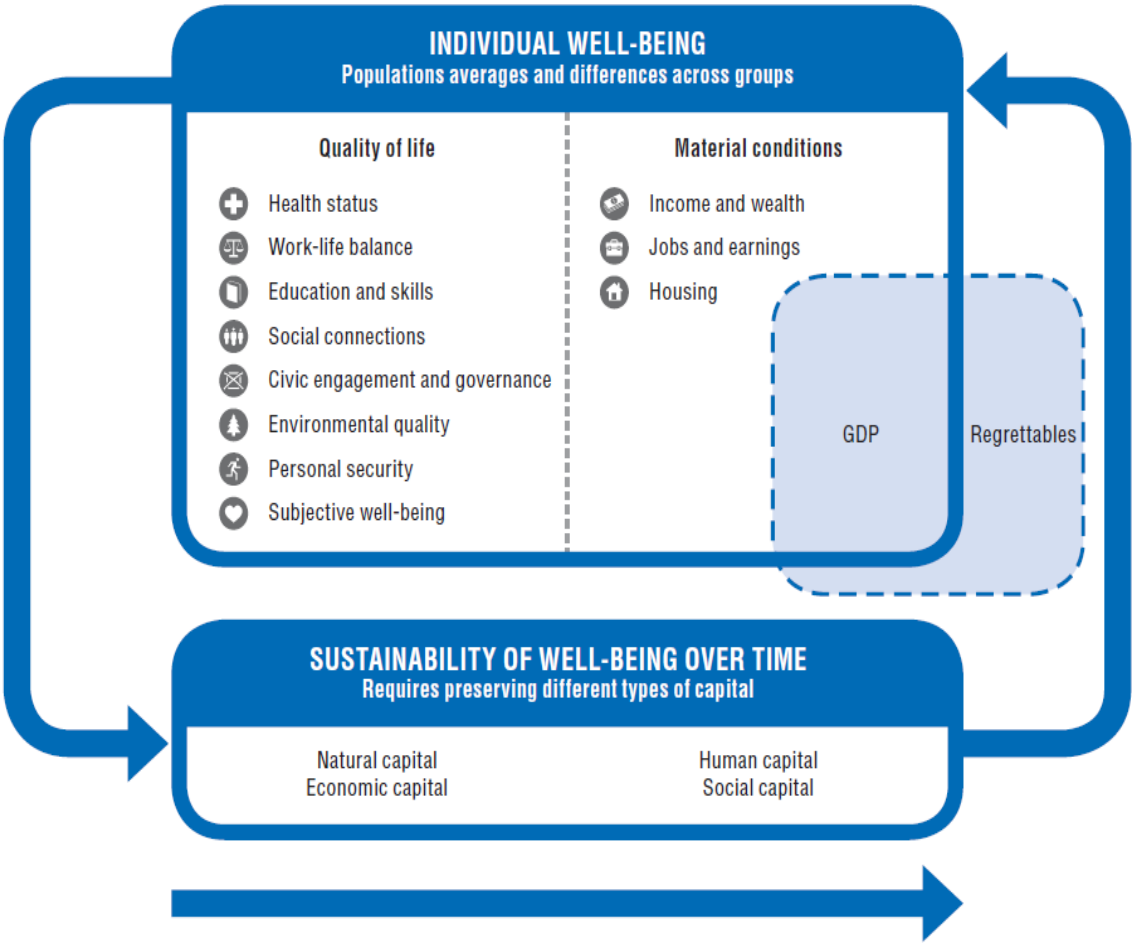
A model describing how the set of actions operates to enhance wellbeing.



Note. From (Aked, Marks, Cordon & Thompson, (2008, p.13). Five ways to well-being: The evidence. London: new economics foundation.

Figure 7.2

The OECD well-being conceptual framework

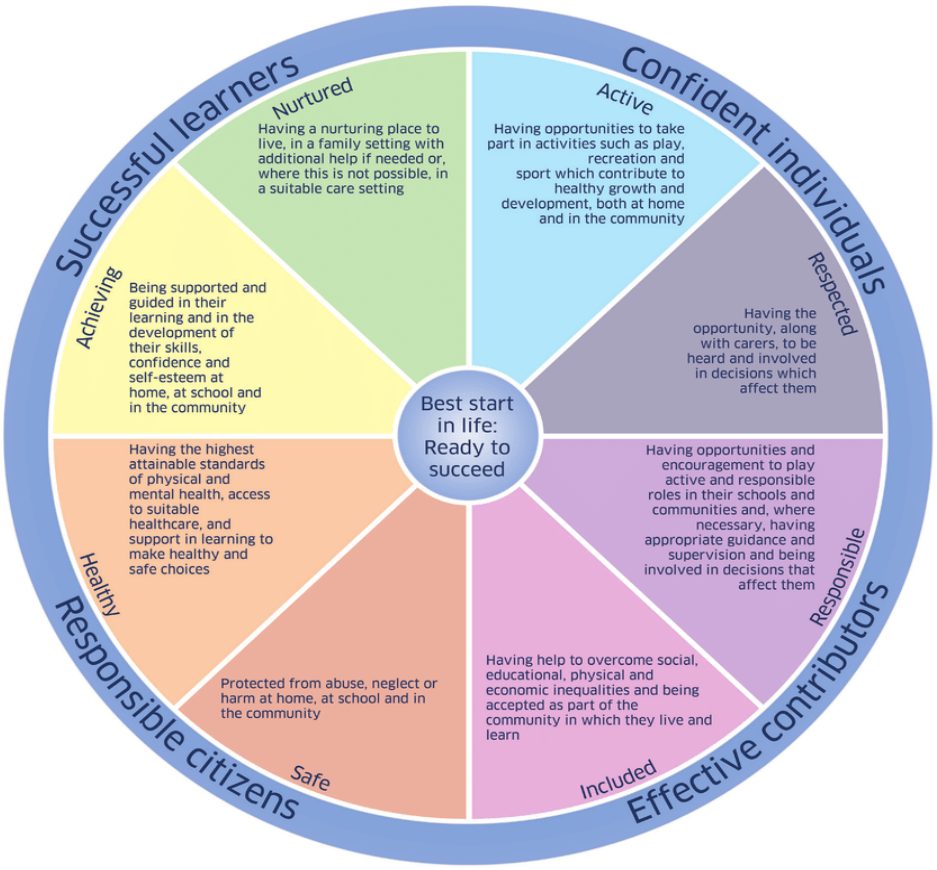


Source: OECD (2011), *How's Life?: Measuring Well-being*, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264121164-en.

Note. From the Organisation for Economic Co-operation and Development. (2011). *How's life? measuring In well-being*. Paris: **OECD.** In (Balestra, C., Boarini, R., & Tosetto, E. (2018, p. 909). What matters most to people? Evidence from the OECD better life index users' responses. *Social Indicators Research*, *136*, 907-930.

Figure 7.3

The Wellbeing Wheel: the eight wellbeing indicators of child wellbeing (SHANNARI)



Note. From Scottish Government (2013). Supporting Young People's Health & Wellbeing A Summary of Scottish Government Policy. Scottish Government.

7.3.3 Adoption of a strength-based approach

The development of the Strathclyde Family Wellbeing Scale was predicated on strength-based approach, following the development of other wellbeing scales that had adopted a similar format, such as the Warwick-Edinburgh Mental Well-being Scale (WEMWBS) (Tennant et al., 2007) and the WHO (five) Well-being Index (Bech, 2004). Consequently, some negatively worded items were excluded from the AFSI for the initial pilot of the scale, for example, the item: 'Sarcasm is not generally used'. The final version of the Strathclyde Family Wellbeing Scale used in the current study only has positively worded questions. Some items to detect pro-social responses were also included in the preliminary pilot detailed in 7.3.5 below. However, feedback on these items was not positive and subsequently they were removed.

The Strathclyde Family Wellbeing Scale was designed from a practice perspective, as a tool to be used in a relationship-based approach with practitioners and parents. Hence, responses should be as accurate as possible arising from a trusting relationship, without the need to detect prosocial responses via scale items. This issue is likely to be evident during the administration of the scale, and practitioners can use their skills to spot signs of prosocial pressure and respond sensitively to them. Indeed, it is suggested that items included to catch out parents who respond in this way may actually undermine a relationship-based approach. These issues are discussed further in Chapter 9, Study 3.

7.3.4 Modelling on the Stirling Children's Well-being Scale (SCWBS)

The development of the Strathclyde Family Wellbeing Scale was partly based on the Stirling Children's Well-being Scale (SCWBS) (Liddle & Carter, 2015), as a planned, ecological progression from a scale measuring individual child wellbeing to a scale measuring family wellbeing. This progression also continued the Scottish perspective and the format of the Strathclyde Family Wellbeing Scale reflected in the principles and some of the elements of the Stirling Children's Well-being Scale, such as positively worded questions, the same 5-point scale and qualitative descriptions.

7.3.5 Preliminary pilot of the Family Wellbeing Scale

The AFSI was reduced to 64 items through the processes of comparison with other wellbeing models, and validity and reliability analysis, and were then split into two scales of 32 items each. This approach enabled a wide selection of statements to be sampled from the original inventory, and comparison of scales to assess which was more effective. Scale A and Scale B were piloted with 48 educational psychologists from local authority Council Educational Psychology Services across Scotland: Glasgow, Edinburgh, East Renfrewshire, North Ayrshire, Dundee, South Lanarkshire, Argyle and Bute, Perth & Kinross, Fife, Moray, Midlothian and Angus.

Following feedback from educational psychologists and comparison with the Stirling Children's Wellbeing Scale (Liddle & Carter, 2015), which consists of only 15 items, it was decided to reduce the scales further, for ease of use to collect and track data. An initial exploration of the Validity and Reliability of both scales was carried out using Principal Components Analysis and Cronbach's Alpha. However, the small sample size and levels of missing data meant that the results could only be viewed as advisory, not conclusive. However, they were instructive in further reducing the items and further development of the scale for piloting. Scale B appeared to achieve slightly better Cronbach's Alpha reliability scores following deletion of items resulting in a 16-item scale, which was selected as the final scale. This scale was then piloted by the Family First Service with a small number of families, which resulted in positive feedback.

7.4 RESULTS: Pilot of the 16 item Short Form Family Wellbeing Scale with Family First Service

The data was analysed using the Statistical Product and Service Solutions (SPSS) version 28.0 (IBM, 2021). This section will report on:

(a) the initial inspection of sample data obtained from families (b) Descriptive Statistics; (b) Preliminary Data; (c) and the exploration of the Validity and Reliability of the Family Wellbeing Scale using Principal Components Analysis and McDonald's Omega.

7.4.1 Initial Data Inspection

(a) Sample Size

The 16 item Strathclyde Family Wellbeing Scale developed from the pre-pilot was piloted with 247 families by professionals from the Family First Service, which is the focus of this study. The researcher delivered training on how to administer the Strathclyde Family Wellbeing Scale and developed a guidance document: *Guidance on the administration of the Strathclyde Family Wellbeing Scale* (Appendix 4). A total sample of 247 T1 (pre-scales) and T2 (post scales) were uploaded to SPSS for analysis.

(b) Missing data

Table 7.1 shows the percentage of missing T1 data for each item in the Strathclyde Family Wellbeing scale. The range for each item is from 2.0% to 3.6%, accounting for a total of 2.7% of missing data for T1 scores.

Table 7.1

Mean, Std and Percentage of missing T1 data for each of the 16 items in the Strathclyde Family Wellbeing scale.

	N	Mean	Std. Deviation	Missing Count	Missing Percent	No. of Extremes[a] Low	No. of Extremes[a] High
Q1Pre	240	3.67	0.88	7	2.8	0	0
Q2Pre	242	3.25	0.93	5	2.0	7	0
Q3Pre	241	3.20	0.94	6	2.4	4	0
Q4Pre	239	3.05	0.98	8	3.2	0	0
Q5Pre	240	4.67	0.74	7	2.8	.	.
Q6Pre	240	4.02	0.92	7	2.8	0	0
Q7Pre	240	3.01	0.87	7	2.8	0	13
Q8Pre	239	3.55	1.04	8	3.2	8	0
Q9Pre	241	3.03	0.87	6	2.4	9	0
Q10Pre	241	3.59	0.89	6	2.4	2	0
Q11Pre	240	3.49	0.85	7	2.8	1	0
Q12Pre	240	3.21	0.90	7	2.8	6	0
Q13Pre	238	3.08	0.94	9	3.6	9	0
Q14Pre	242	2.79	0.90	5	2.0	0	6
Q15Pre	240	4.09	0.94	7	2.8	0	0
Q16Pre	241	3.42	0.88	6	2.4	2	0

a. Number of cases outside the range (Q1 - 1.5*IQR, Q3 + 1.5*IQR).

The Expectation Maximisation (EM) single imputation algorithm was applied to impute the missing data for both T1 and T2 scores. Expectation Maximisation is a function of SPSS (SPSS version 28.0, IBM, 2021) and uses an algorithm which forms a distribution such as a normal distribution, based on correlations with the missing data and then substitutes best values/maximum likelihood under the distribution model. An assumption of EM is that the data are missing randomly. A single imputation algorithm was used to permit Principal Components Analysis in SPSS, and this is tested using Little's MCAR Test. Little's MCAR test is a

multivariate test of Missing Completely at Random (MCAR) that tests for mean differences on every variable in the data set across subgroups that share the same missing data pattern by comparing the observed variable means for each pattern of missing data with the expected population means estimated using the EM algorithm (Little, 1988).

Result - Little's MCAR test: Chi-Square = 255.479, DF = 218, Sig. = .042. So, Sig=.042<.05 i.e. this is very slightly below .05, which suggests that there is a possibility that data may not be missing completely at random. Consequently, further inspection of the data is necessary. An exploration of the T1 data is also required to identify any outliers or ceiling and floor effects, which may also impact on any analysis and potential outcomes.

(c) Outliers

The 247 scales were then inspected for Outliers as they can distort analyses. To identify Outliers the T1 scale scores were converted to Z scores, which enabled any Outliers to be identified for values of items where Z< -3.0 or Z > 3.0 (Ref). Table 7.2 below illustrates the outliers identified.

Table 7.2

Z Score Outliers Found in Family First Data for T1 scores

Scale Item	**No. of Outliers** (Z Scores >3.0 or Z < -3.0)	**ID Number**
5	7	111, 675 716 573 824 1056 1063
6	1	1095
15	1	921

These nine outliers were then removed by identifying their corresponding ID case number and then deleting these cases. Consequently, the sample of 247 T1 scores was reduced to 238 T1 scores, which were then used as the basis for all further analysis in the study. The outlier scale items 5, 6 and 15 highlighted were also a first indication of potential items that might not be suitable for inclusion in the final version of the Strathclyde Family Wellbeing Scale.

(d) Normal distribution

The 238 T1 scores were analysed to assess normality of distribution.
Table 7.3 summarises the key statistics for all the individual T1 scores and Table 7.4 highlights key statistics for Total T1 scores.

Table 7.3

Descriptive statistics (Range, Mean, Std Dev., Variance, Skew, kurtosis) for T1 Scores for Sample of 238 cases.

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean		Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Q1Pre	238	3.00	2.00	5.00	3.6770	.05562	.85800	.736	-.159	.158	-.578	.314
Q2Pre	238	4.00	1.00	5.00	3.2741	.05931	.91500	.837	.022	.158	-.070	.314
Q3Pre	238	4.00	1.00	5.00	3.2396	.05903	.91067	.829	.313	.158	-.368	.314
Q4Pre	238	4.00	1.00	5.00	3.0784	.06168	.95155	.905	-.014	.158	-.480	.314
Q5Pre	238	2.00	3.00	5.00	4.7527	.03447	.53174	.283	-2.147	.158	3.702	.314
Q6Pre	238	3.00	2.00	5.00	4.0782	.05519	.85141	.725	-.521	.158	-.581	.314
Q7Pre	238	4.00	1.00	5.00	3.0248	.05483	.84582	.715	.295	.158	.179	.314
Q8Pre	238	4.00	1.00	5.00	3.5842	.06480	.99967	.999	-.390	.158	-.204	.314
Q9Pre	238	4.00	1.00	5.00	3.0544	.05424	.83670	.700	-.019	.158	.105	.314
Q10Pre	238	4.00	1.00	5.00	3.6331	.05456	.84164	.708	-.149	.158	-.307	.314
Q11Pre	238	4.00	1.00	5.00	3.5171	.05356	.82634	.683	.036	.158	-.274	.314
Q12Pre	238	4.00	1.00	5.00	3.2443	.05592	.86276	.744	.219	.158	.131	.314
Q13Pre	238	4.00	1.00	5.00	3.1155	.05721	.88259	.779	.217	.158	-.040	.314
Q14Pre	238	4.00	1.00	5.00	2.8192	.05656	.87254	.761	.174	.158	-.231	.314
Q15Pre	238	3.00	2.00	5.00	4.1289	.05670	.87479	.765	-.596	.158	-.650	.314
Q16Pre	238	4.00	1.00	5.00	3.4647	.05388	.83118	.691	.092	.158	-.282	.314
TotalT1	238	45.00	35.00	80.00	55.6860	.57019	8.79642	77.377	.128	.158	-.515	.314
Valid N (listwise)	238											

Table 7.4

Descriptives (Range, Mean, Std Dev., Variance, Skew, kurtosis) for the Total T1 Scores

			Statistic	Std. Error
Total Pre-score	Mean		55.6860	.57019
	95% Confidence Interval for Mean	Lower Bound	54.5627	
		Upper Bound	56.8093	
	5% Trimmed Mean		55.6161	
	Median		56.0000	
	Variance		77.377	
	Std. Deviation		8.79642	
	Minimum		35.00	
	Maximum		80.00	
	Range		45.00	
	Interquartile Range		12.25	
	Skewness		.128	.158
	Kurtosis		-.515	.314

(e) Skew and Kurtosis

Different measures/cut-offs are cited for determining if data is normally distributed. Values for asymmetry and Kurtosis for z-scores between -2 and +2 are acceptable to prove normal univariate distribution (George & Mallory, 2010). Z-scores for skewness and kurtosis can be calculated by dividing the statistic by its standard error. According to Hair et al (2010) and Bryne (2010), data is normal if skewness is between -2 and +2 and Kurtosis data is normal if between -7 and +7. Another acceptable range for skewness or kurtosis for normal distribution of data is cited as values below +1.5 and above -1.5 (Tabachnick & Fidell, 2013).

Values for each of the items, including the Total T1 score, satisfy all the above criteria apart from item 5 (Skew = -2.147, Kurtosis = 3.702). This suggests that T1 scores virtually all follow a normal distribution.

(f) Kolmogorov-Smirnova and Shapiro-Wilk Tests

A further test of Normality was carried out on the Total T1 scores using the following tests: Kolmogorov-Smirnova and Shapiro-Wilk.

Table 7.5

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Total Pre-score	.057	238	.056	.990	238	.100

a. Lilliefors Significance Correction

Note. If p>.05 then it is normally distributed. For T1 Total Scores, K-S test p(.056) >.05 and S-W test p = .100), > .05 so both are not statistically significant. Hence, Total T1 scores are normally distributed. This is also illustrated in the histogram in Figure 7.4 and Q-Q Plot in 7.5.

Figure 7.4

Histogram of Total T1 Scores

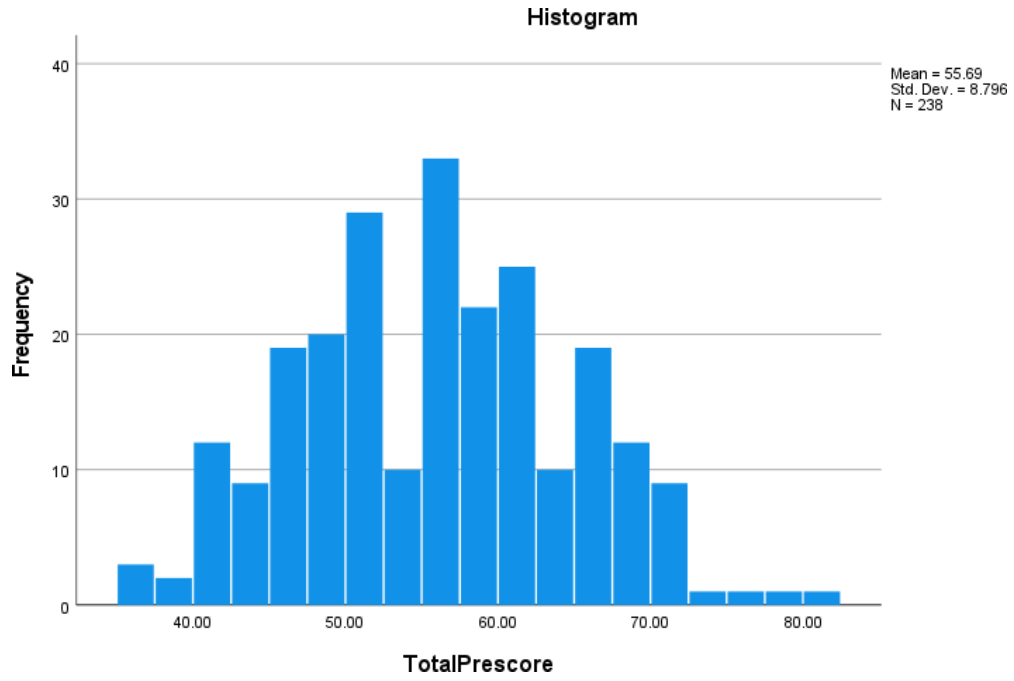
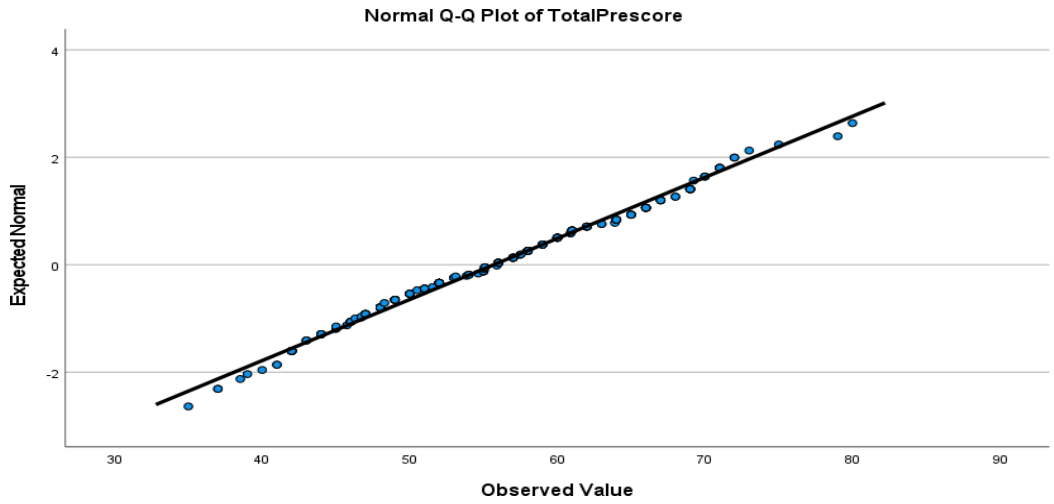


Figure 7.5

Q-Q Plot of Total T1 Scores



The Q-Q Plot compares expected and observed values and indicates that most Total T1 points are on the line and hence a normal distribution can be observed.

7.4.2 Principal Component Analysis

The 16 items of the Strathclyde Family Wellbeing Scale for the 238 T1 scores were subjected to Principal Components Analysis (PCA) using IBM SPSS Statistics version 28. Prior to performing PCA, the suitability of data for factor analysis was assessed. Inspection of the correlation matrix (Table 7.6 below) highlighted the presence of many coefficients of .3 and above (Pallant, 2020). Also, there were no coefficients greater than .9 and hence there was no problem of singularity in the data (Field, 2005). Indeed, there were no coefficients of .7 or higher. There were no variables for which most significance values were greater than .05 (Field, 2005a). Hence, correlations were appropriate, and the data were suitable for factor analysis. The determinant was .001, which is greater than the necessary value of .00001 (Field, 2005a). So, multi-collinearity was not a problem for these data.

Kaiser-Meyer-Olkin measure of Sampling Adequacy (KMO = 0.899) met the recommended value of .6 (Kaiser, 1974) and fell within the range categorised as 'excellent' by Hutcheson and Sofroniou (1999). Bartlett's (1954) test of sphericity Chi-square (1617.952), df (120), $p < .001$, which is highly significant. Consequently, these indicated that the sample size and the T1 data were adequate for conducting PCA (Dalton, M, Finlayson G, Hill, A. & Blundell, J., 2015).

Table 7.6

Correlation Matrix of 16 T1 items subjected to Principal Components Analysis

Correlation Matrix[a]

		Q1Pre	Q2Pre	Q3Pre	Q4Pre	Q5Pre	Q6Pre	Q7Pre	Q8Pre	Q9Pre	Q10Pre	Q11Pre	Q12Pre	Q13Pre	Q14Pre	Q15Pre	Q16Pre
Correlation	Q1Pre	1.000	.546	.384	.443	.244	.356	.337	.309	.396	.536	.470	.424	.351	.446	.402	.178
	Q2Pre	.546	1.000	.363	.395	.143	.368	.457	.285	.400	.501	.557	.424	.451	.420	.368	.345
	Q3Pre	.384	.363	1.000	.343	.092	.327	.429	.386	.426	.410	.331	.559	.254	.388	.308	.432
	Q4Pre	.443	.395	.343	1.000	.214	.346	.253	.471	.637	.503	.399	.341	.369	.499	.357	.258
	Q5Pre	.244	.143	.092	.214	1.000	.469	.125	.213	.210	.294	.225	.077	.148	.052	.239	.178
	Q6Pre	.356	.368	.327	.346	.469	1.000	.246	.411	.294	.513	.429	.351	.276	.295	.377	.411
	Q7Pre	.337	.457	.429	.253	.125	.246	1.000	.260	.420	.366	.536	.398	.496	.411	.292	.299
	Q8Pre	.309	.285	.386	.471	.213	.411	.260	1.000	.406	.415	.232	.287	.180	.287	.251	.225
	Q9Pre	.396	.400	.426	.637	.210	.294	.420	.406	1.000	.518	.473	.387	.432	.573	.332	.308
	Q10Pre	.536	.501	.410	.503	.294	.513	.366	.415	.518	1.000	.461	.484	.388	.433	.415	.350
	Q11Pre	.470	.557	.331	.399	.225	.429	.536	.232	.473	.461	1.000	.425	.559	.510	.467	.359
	Q12Pre	.424	.424	.559	.341	.077	.351	.398	.287	.387	.484	.425	1.000	.366	.418	.401	.514
	Q13Pre	.351	.451	.254	.369	.148	.276	.496	.180	.432	.388	.559	.366	1.000	.507	.483	.299
	Q14Pre	.446	.420	.388	.499	.052	.295	.411	.287	.573	.433	.510	.418	.507	1.000	.260	.294
	Q15Pre	.402	.368	.308	.357	.239	.377	.292	.251	.332	.415	.467	.401	.483	.260	1.000	.242
	Q16Pre	.178	.345	.432	.258	.178	.411	.299	.225	.308	.350	.359	.514	.299	.294	.242	1.000
Sig. (1-tailed)	Q1Pre		<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	.003
	Q2Pre	.000		.000	.000	.014	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Q3Pre	.000	.000		.000	.079	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Q4Pre	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Q5Pre	.000	.014	.079	.000		.000	.027	.000	.001	.000	.000	.120	.011	.213	.000	.003
	Q6Pre	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	Q7Pre	.000	.000	.000	.000	.027	.000		.000	.000	.000	.000	.000	.000	.000	.000	.000
	Q8Pre	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.003	.000	.000	.000
	Q9Pre	.000	.000	.000	.000	.001	.000	.000	.000		.000	.000	.000	.000	.000	.000	.000
	Q10Pre	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000
	Q11Pre	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000
	Q12Pre	.000	.000	.000	.000	.120	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000
	Q13Pre	.000	.000	.000	.000	.011	.000	.000	.003	.000	.000	.000	.000		.000	.000	.000
	Q14Pre	.000	.000	.000	.000	.213	.000	.000	.000	.000	.000	.000	.000	.000		.000	.000
	Q15Pre	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000		.000
	Q16Pre	.003	.000	.000	.000	.003	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	

a. Determinant = .001

7.4.3 Method of factor extraction and type of rotation

The first iteration of Principal Components Analysis revealed the presence of four components with eigenvalues exceeding 1, explaining 41.33%, 8.36%, 7.02% and 6.90% of the variance respectively. Inspection of the Scree Plot revealed a clear break after the second component, suggesting the retention of at least 2 components (Costello & Osborne, 2005). To aid in the interpretation of components, Direct Oblimin rotation was performed to simplify and clarify the data structure. Direct Oblimin is a type of oblique rotation, which in contrast to orthogonal rotation, allows for the factors to be correlated (Pallant, 2020). Theoretically, if the factors might correlate, as was assumed in this study, researchers are advised to use an oblique rotation (Field, 2005a; Pallant, 2020).

An iterative approach was taken to the PCA process, whereby each variable in the Communalities Table 7.7 was inspected to see how much variance was explained by them after each PCA iteration. A strict cut-off, of a communality value = 0.5 was applied to items. The communality of Items in a scale is a numerical measure of how much an item's variance is captured by the factor model (Brown, 2015). Communalities between 0.25 and 0.4 are acceptable cut-off values, or ideally 0.7 or above (Beavers, Lounsbury, Richards, Huck, Skolits, and Esquivel, 2013). Generally, the stricter the cut-off values the better the fit between the model and the items that remain. So, 0.5 was a sound cut-off value to apply. Any items with communality less than 0.5 were deleted and the PCA was run again with this item removed. After each iteration of PCA, the Communality Table was checked for items less than 0.5, which were then removed. This process was repeated until all communality values were 0.5 or above as shown in Table 7.7.

Table 7.7

Communalities of 10 retained T1 items following Principal Components Analysis

Communalities

	Extraction
Q2Pre	.554
Q3Pre	.689
Q4Pre	.757
Q7Pre	.580
Q8Pre	.670
Q9Pre	.688
Q11Pre	.709
Q12Pre	.699
Q13Pre	.683
Q16Pre	.639

Extraction Method: Principal Component Analysis.

In tandem with this approach, the Pattern Matrix was also inspected after each PCA iteration for any values less than 0.5, as well as any cross-loading items. These items were also removed. This process continued until only values of 0.5 or above were contained in both the Communality Table and Pattern Matrix. In addition, the process continued with Direct Oblimin rotation until the Pattern Matrix indicated simple structure (Thurstone, 1947), with no cross-loading items and components, on which at least three or more variables loaded up under them (Costello & Osborne, 2005). This eventually resulted in a three-component solution.

7.4.4 Three-component solution

The three-component solution explained a total of 66.67% of the variance with Component 1 contributing 45.16%, Component 2 contributing 11.16% and Component 3 contributing 10.35%. The rotated solution revealed the presence of simple structure (Thurstone, 1947), with all three components showing strong loadings and all variables loading on only one component, with no cross-loading variables.

The Pattern Matrix and Structure Matrix for the Direct Oblimin Rotation are shown in Tables 7.8 and 7.9 respectively.

Table 7.8

Pattern Matrix of 10 retained T1 items following Principal Components Analysis

Pattern Matrix[a]

	Component		
	1	2	3
Q13Pre	.854		
Q11Pre	.806		
Q7Pre	.670		
Q2Pre	.620		
Q4Pre		.820	
Q8Pre		.803	
Q9Pre		.644	
Q16Pre			.801
Q12Pre			.757
Q3Pre			.750

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 6 iterations.

Table 7.9

Structure Matrix of 10 retained T1 items following Principal Components Analysis

	Component		
	1	2	3
Q11Pre	.840		.409
Q13Pre	.823		
Q7Pre	.741		.475
Q2Pre	.722		.455
Q4Pre	.451	.853	
Q8Pre		.796	
Q9Pre	.575	.768	
Q12Pre	.480		.825
Q3Pre		.479	.806
Q16Pre			.793

Extraction Method: Principal Component Analysis.

Rotation Method: Oblimin with Kaiser Normalization.

7.4.5 Final Model

Following Principal Component Analysis, the final model of the Strathclyde Family Wellbeing Scale transformed from a 16-item scale to a 10-item x 3-dimensional scale which accounted for 66.67% of the variance. The components and the scale items that loaded under them were inspected and a Factor Label assigned to describe each of the underlying three dimensions. These were:

Component 1 - Family Interaction

Component 2 - Family Cohesion

Component 3 – Family Communication

Table 7.10 below summarises the final model of the Strathclyde Family Wellbeing Scale

Table 7.10

Final model of the Strathclyde Family Wellbeing Scale

Scale item	**Factor Label**	**Component**		
		1	2	3
Q13 We respect the roles each of us plays in the family	Family Interaction	.854		
Q11 We like to be kind to each other	Family Interaction	.806		
Q7 We listen to each other	Family Interaction	.670		
Q2 We enjoy helping each other	Family Interaction	.620		
Q4 We have a hopeful attitude towards life	Family Cohesion		.820	
Q8 We have a strong sense of belonging	Family Cohesion		.803	
Q9 Life in our family is satisfying to us	Family Cohesion		.644	
Q16 We find it easy to be honest with each other	Family Communication			.801
Q12 We enjoy our family discussions	Family Communication			.757
Q3 We like to share our feelings with each other	Family Communication			.750

7.4.6 Reliability Analysis

The Reliability of a scale refers to the degree to which it consistently measures the underlying construct it claims to measure (Field, 2005b). The revised 10-item Strathclyde Family Wellbeing Scale now comprises three subscales: Family Interaction, Family Cohesion and Family Communication. To check the Reliability of the 10 item Strathclyde Family Wellbeing Scale, the three subscales were analysed using two measures of internal consistency: Cronbach's Alpha and McDonald's Omega.

Ideally, the Cronbach's Alpha coefficient should be greater than .7 (DeVellis & Thorpe, 2021), but values are sensitive to the number of items in the scale (Pallant, 2020). In the case of short scales, for example of less than 10 items, Cronbach values can be low eg .5 (Pallant, 2020). This scale now consists of 10 items and hence is

potentially susceptible to this. Consequently, McDonald's Omega (1999) was also used to assess, compare and corroborate reliability, for reasons discussed earlier in section 5.10, p. 110. A key rationale for using McDonald's Omega was that it deals with the assumption of equal factor loadings, which gives a more overall estimate of reliability than Cronbach's alpha. The results are contained in Table 7.11 below.

Table 7.11

Reliability Analysis Results for the three subscales: Family Interaction, Family Cohesion and Family Communication

Component	**Subscale**	**McDonald's Omega**	**Cronbach's Alpha**
1	Family Interaction	.805	.804
2	Family Cohesion	.759	.748
3	Family Communication	.756	.751
All 3 combined components	Full Scale all 10 items	.862	.861

Note. Values for both McDonald's Omega and Cronbach's Alpha are very similar and indicate very good internal consistency reliability for the Strathclyde Family Wellbeing Scale as a whole and for the three subscales, which comprises it.

7.4.7 Analysis of 10 included and 6 excluded items for Ceiling and Floor effects

A final analysis was carried out on the 10 items retained and included in the Strathclyde Family Wellbeing Scale, and the 6 items that were rejected during the Principal Components Analysis. An exploration of their intercorrelations and possible floor and ceiling effects was conducted. This provided possible reasons for why these items were included or excluded. These items are discussed in the sections below.

7.4.8 Ten included items in the Strathclyde Family Wellbeing Scale: 2, 3 ,4, 7, 8, 9, 11, 12, 13, 16

a) Inter-correlations

The top half of the Correlation Matrix (Table 7.6 above) contains the Pearson correlation coefficient between all pairs of questions. The Correlation Matrix did not show any values of the 10 included items with problematically high inter-correlations i.e. no values were >.9 (Field, 2005a). The bottom half contains the one-tailed significance level of the coefficients. There are no values for the 10 included items/variables for which there are many p values >.05 (Field, 2005a). Hence, the 10 variables included in the Strathclyde Family Wellbeing Scale correlate well but not excessively and hence do not exceed recommended limits. Consequently, as indicated by the determinant of the correlation matrix, multicollinearity is not a problem and none of the 10 included items needed to be eliminated.

b) Ceiling and Floor Effects

Significant negative skew would indicate a ceiling effect and significant positive skew a floor effect. Table 7.3 indicates that none of the 10 retained items have this level of skewness. Also, none of the 10 items included in the scale have a higher mean and lower standard deviation, indicating that there are no Ceiling Effects, identified by that indicator. In addition, possible ceiling and floor effects were further evaluated by considering the percentage frequency of lowest or highest possible score on items achieved by respondents. Ceiling and floor effects of more than 15 %, as a cut-off, were regarded as significant. All 10 items, apart from item 8, had

percentage frequency respondent scores below 15%, for the 5-point likert scale used, with lowest score (1) and highest (5). Item 8 had a percentage frequency of highest possible score 5 achieved by respondents of 19.3% but was not rejected by the PCA.

7.4.9 Six excluded items from the Strathclyde Family Wellbeing Scale: 1, 5, 6, 10, 14, 15

a) Inter-correlations

In Table 7.6, the correlation matrix did not show any values of the 6 excluded items with problematically high inter-correlations ie no values were >.9 (Field, 2005). The bottom half of the correlation matrix contained no values for the 6 excluded items/variables for which there is a majority of values >.05 (Field, 2005a). However, Item 5 did have 4 items with values > .05 but this remained within the minority of items. Hence, the 6 variables excluded in the Strathclyde Family Wellbeing Scale correlate well but not excessively and do not exceed recommended limits. Consequently, multicollinearity was not a problem with these items.

b) Ceiling and Floor Effects

Only item 5 out of the six excluded items had significant negative skew (-2.147), which would indicate a ceiling effect. None of the 6 items excluded in the scale have a higher mean and lower standard deviation, indicating that there are no Ceiling Effects, identified by that indicator. As in 7.4.8 above, the ceiling and floor effects were evaluated by considering the percentage frequency of lowest or highest possible score on items achieved by respondents. Ceiling and floor effects of more than 15 %, as a cut-off was applied again and were regarded as significant. None of the 6 items had percentage frequency respondent scores above 15%, for the Strathclyde Family Wellbeing likert scale with lowest score (1), indicating there were no floor effects. However, ceiling effects were found for four of the six excluded items (1, 5, 6, 15), with percentage frequency respondent scores above 15%, for the Strathclyde Family Wellbeing scale which had a highest score of (5). Item 10 narrowly missed a ceiling effect with 14.8%. This indicates, in part, why these items may have been eliminated from inclusion in the Strathclyde Family Wellbeing Scale.

Consequently, for items 1,5,6 and 15 it is difficult to get a sensitive measure of central tendency or dispersion. Noticeably, item 5 ('We love one another') had the highest percentage frequency (78.2%) for highest possible score of 5. This suggests that despite the Strathclyde Family Wellbeing Scale being completed anonymously, with only the practitioner being aware of the scores, respondents may have felt pressure to give prosocial answers to this item by giving it the highest score of 5.

7.5 Summary of results for study 1

The pilot of the original 16-item Strathclyde Family wellbeing Scale by the Family first Service yielded 238 T1 scores after the elimination of outliers. Following Principal Component Analysis, a 10-item x 3-dimensional scale which accounted for 66.67% of the variance was obtained, which also had good reliability. Consequently, the factor scores derived for each of the three dimensions can be used to calculate the mean of each of the subscales for all 238 cases for T1 and T2 (See Table 8.3). Thus, six new variables can be created, enabling analysis of the use of the Strathclyde Family Wellbeing Scale to measure impact and outcomes (See Chapter 8).

Chapter 8 reports the results of Study 2, which focuses on the second aim of the thesis, to investigate the utility of the Strathclyde Family Wellbeing Scale using factor scores from the Principal Component Analysis as a measure of outcome and impact and as a measure of its utility to measure outcome and impact of family-based interventions.

Chapter 8 Results and Analysis of Study 2

Study 2: The utility of the Strathclyde Family Wellbeing Scale (SFWS) to measure impact and outcomes

8.1 Rationale and Aims

Chapter 7, Study 1, explored and determined the underlying dimensions of the Strathclyde Family Wellbeing Scale (SFWS) using Principal Components Analysis. Study 2 focuses on the second aim of the thesis as detailed in chapter 1 and Chapter 6, which set out the Methodology for the study, namely to:

Investigate the utility of the Strathclyde Family Wellbeing Scale using factor scores from the Principal Component Analysis as a measure of outcome and impact and as a measure of its utility to measure outcome and impact of family-based interventions.

8.2 Format of analysis of data

The data was also analysed using the SPSS version 28.0 (IBM, 2021). This section will report on:

(a) the initial inspection of data obtained from families following intervention by the Family First Service, specifically of the final 10-item x 3-dimensional scale.

(b) Descriptive Statistics of the Interaction, Cohesion and Communication variables

(c) Statistical analysis of the impact and outcome of intervention by Family First.

8.3 Using the final model of the Strathclyde Family Wellbeing Scale to analyse impact

Chapter 7: Study 1 explored the underlying structure of the Strathclyde Family Wellbeing Scale using Principal Component Analysis and Reliability Analysis. This resulted in a final model of the Strathclyde Family Wellbeing Scale, which transformed from a 16-item scale to a 10-item x 3-dimensional scale, accounting for 66.67% of the variance. The three subscales comprising the Strathclyde Family Wellbeing Scale were labelled as: *Family Interaction, Family Cohesion and Family Communication.* Table 8.1 summarises the three subscales and the items which loaded under them.

Table 8.1

Summary of Subscales underlying the Strathclyde Family Wellbeing Scale

Scale item	**Factor Label**
Q13 We respect the roles each of us plays in the family	Family Interaction
Q11 We like to be kind to each other	Family Interaction
Q7 We listen to each other	Family Interaction
Q2 We enjoy helping each other	Family Interaction
Q4 We have a hopeful attitude towards life	Family Cohesion
Q8 We have a strong sense of belonging	Family Cohesion
Q9 Life in our family is satisfying to us	Family Cohesion
Q16 We find it easy to be honest with each other	Family Communication
Q12 We enjoy our family discussions	Family Communication
Q3 We like to share our feelings with each other	Family Communication

Consequently, only the 10 retained items and associated 3-subscales in Table 8.1 were used to measure the impact of the Family First Service, by calculating the means of each of the subscales for all 238 cases for T1 and T2 to derive the factor scores. For brevity the subscales will mainly be referred throughout the chapter without the prefix 'Family' and simply called: Interaction, Cohesion and Communication.

8.4 Initial Inspection of data obtained from the three subscales

Table 8.2 below contains the subscale and associated items, and Table 8.3 illustrates the descriptive statistics.

Table 8.2

Subscales and associated scale items

Subscale	Questions
Family Interaction	2, 7, 11, 13
Family Cohesion	4, 8, 9
Family Communication	3, 12, 16

Table 8.3

Descriptive Statistics for items in the three subscales

Subscale		N	Min	Max	Mean	Std. Dev	Skewness		Kurtosis	
							Stat	Std Error	Stat	Std Error
Family Interaction	Mean of T1 Q2Q7Q11Q13	238	1.25	5.00	3.23	0.69	0.35	0.16	0.31	0.31
Family cohesion	Mean of T1 Q4Q8Q9	238	1.00	5.00	3.23	0.76	-0.14	0.16	-0.40	0.31
Family Communication	Mean of T1 Q3Q12Q16	238	1.33	5.00	3.32	0.71	0.39	0.16	0.10	0.31
Family Interaction	Mean of T2 Q2Q7Q11Q13	238	2.00	5.00	3.80	0.50	-0.02	0.16	0.61	0.31
Family cohesion	Mean of T2 Q4Q8Q9	238	2.00	5.00	3.97	0.47	-1.01	0.16	2.23	0.31
Family Communication	Mean of T2 Q3Q12Q16	238	2.33	5.00	3.84	0.52	-0.37	0.16	0.73	0.31
	Valid N (listwise)	238								

Table 8.3 shows that the range of mean scores at T1 is greater for all variables than for T2. For example, Interaction MeanofT1Q2Q7Q11Q13, the Range = 5.00 - 1.25 = 3.75. The Range for Cohesion MeanofT1Q4Q8Q9 = 4.00. While the largest Range for T2 variables for both Interaction and Cohesion = 3.

Standard deviation is a measure of the spread of values in a sample and is also a measure of how well the mean represents the data (Field, 2005a). Table 8.3 reports the statistics for standard deviation and the means, which can be used to calculate the coefficient of variation. The coefficient of variation (CV) is the ratio between the standard deviation and the mean and is a method to measure how spread-out values are in a dataset relative to the mean (https://www.statology.org/24/12/22). The CV is shown in Table 8.4.

Table 8.4

Coefficient of variation (CV) for Variables

Subscale		N	Mean	Std. Dev	CV
Family Interaction	Mean of T1 Q2Q7Q11Q13	238	3.23	0.69	0.21
Family cohesion	Mean of T1 Q4Q8Q9	238	3.23	0.76	0.23
Family Communication	Mean of T1 Q3Q12Q16	238	3.32	0.71	0.21
Family Interaction	Mean of T2 Q2Q7Q11Q13	238	3.80	0.50	0.13
Family cohesion	Mean of T2 Q4Q8Q9	238	3.97	0.47	0.12
Family Communication	Mean of T2 Q3Q12Q16	238	3.84	0.52	0.13
	Valid N (listwise)	238			

In general, a CV value greater than 1 is often considered high (https://www.statology.org/24/12/22). All CV values for both T1 and T2 variables are small, which indicates that the standard deviation of each of the variables is in turn small. Consequently, the data points for T1 and T2 are close to the mean, suggesting little dispersion and therefore the mean variables of Interaction, Cohesion and Communication consistently represent the data well.

8.5 Threats to Validity

As discussed in Chapter 6: Methodology, this research project may be categorised primarily as a non-experimental fixed design model, Robson (2002). Quasi-experiments, such as ‘pre-test post-test single group’ research projects may have vulnerabilities pertaining to experimental design. However, if the focus is purely to identify whether there is an improvement in performance or to assess statistical significance after an intervention, there are no significant issues, but there are potential threats to validity Robson (2002). This reflects this study and the aims set out earlier in Section 6.2.

Threats to validity include factors separate from the intervention (ie Family First), which may improve performance. Examples include historical events; maturation due to developments in the group between T1 and T2; and regression to

the mean Robson (2002). Regression to the mean (RTM) is a statistical phenomenon that occurs when extremely large or small measurements tend to be followed by measurements that are closer to the mean (Barnett, Van der Pols & Dobson, 2004). Hence, RTM happens when post test scores of groups with extreme scores at T1 have a propensity to be nearer to the means of their population Robson (2002), when measured at T2. The risk to validity from RTM is that natural variation in repeated data may be perceived as genuine change (Barnett, Van der Pols & Dobson, 2004), when it is not. Thus, T2 scores in this study must be scrutinised for RTM, to ensure the gains in scores are not merely due to natural variation rather than the intervention of the Family First Service

It is suggested that RTM was reduced in this study because any outliers in T1 data were detected and removed as detailed in Chapter 7: Study 1. Hence, any extremely large or small scores contained in T1 data were eliminated, which is a key factor resulting in RTM. In addition, the standard deviations, and corresponding coefficients of variation of T1 and T2 variables (see Table 7.4) were very small, suggesting only a slight spread around the mean. Consequently, RTM is further reduced as post-test measurement at T2 is unlikely to result in significantly closer values to the mean, as they are already closely restricted around it.

8.6 Change in scores from T1 to T2

Table 8.3 above of descriptive statistics showed that the mean T1 scores for the constructs of Family Interaction, Family Cohesion and Family Communication all showed improvement at T2 for the corresponding constructs. The change in score following intervention by the Family First Service and measurement by the subscales are illustrated in Table 8.5.

Table 8.5

Gain in Mean Scores for Interaction, Cohesion and Communication

Construct	**Variable**	**MeanT1**	**MeanT2**	**Score Change (+)**
Family Interaction	MeanQ2Q7Q11Q13	3.23	3.80	0.57
Family Cohesion	MeanQ4Q8Q9	3.23	3.97	0.74
Family Communication	MeanQ3Q12Q16	3.32	3.84	0.52

All items within the three subscales had acceptable values for Skewness and Kurtosis as detailed in Table 8.3 (Tabachnick & Fidell, 2013) and (George & Mallory, 2010), apart from the Mean for T2Q4, Q8Q9, which measures Family Cohesion at T2 and had Kurtosis value z = 2.232. Thus, the T1 dependent variables: *Interaction, Cohesion* and *Communication* were normally distributed. The T2 dependent variables for *Interaction* and *Communication* also appeared to be normally distributed. However, the T2 dependent variable for *Cohesion,* (subscale items 4, 8, 9) was not quite normally distributed and introduced heterogeneity into the dataset.

8.7 Analysis of T1 Data obtained by the three subscales: *Family Interaction, Family Cohesion and Family Communication*

To investigate the utility of the Strathclyde Family Wellbeing Scale to measure outcome and impact, specifically of family-based interventions, as offered by the Family First Service, the three independent variables of *Location, Age* and *Number of Family Members in household* were recoded into three categories. This facilitated analysis and aided interpretation of the results. *Gender* was also an independent variable but only 4/238 cases identified as male and having completed the Strathclyde Family Wellbeing Scale. Two cases had missing data for gender. Hence, 232 out of 238, 97.5% of subjects were female. Consequently, no particularly useful analysis could be conducted for gender.

8.7.1 Recoding of Independent Variables into categories

To facilitate analysis and interpretation of T1 and T2 data obtained by the three subscales: *Family Interaction, Family Cohesion and Family Communication,* the independent variables were recoded as detailed in Table 8.6 below.

Table 8.6

Recoded Independent Variables: Location (Locat); Age of person completing scale (Agecat); Number of family members in household (Famcat)

Previous Coding			**New Coding**		
1	**2**	**3**	**1**	**2**	**3**
Age of person completing scale (years)	**Locality**	**No. of family members**	**Agecat**	**Locat**	**Famcat**
1= 0-11yrs	1=LOCALITY 1	Range 1-7	Young =1,2,3	LOCALITY 1 = 1	Small=1,2,3
2=12-18yrs	2= LOCALITY 2		Mid = 4	Others = Localities 2 up to 10	Large=4,5,6,7
3=19-24yrs	3= LOCALITY 3		Old = 5,6		
4=25-39yrs	4= LOCALITY 4				
5=40-50yrs	5= LOCALITY 5				
6= 50+yrs	6= LOCALITY 6				
	7= LOCALITY 7				
	8= LOCALITY 8				
	9= LOCALITY 9				
	10= LOCALITY 10				

Recoded variables

1. Age of person completing the Strathclyde Family Wellbeing Scale recoded into three groups: Mid, Young and Old and renamed ‘Agecat’. Example: ‘Young’ recoded to cover (0-11yrs, 12-18yrs and 19-24yrs) ie 1, 2, 3 from previous code.
2. Number of family members in household recoded into two groups: Small or Large and renamed ‘Famcat’. Example: Small = 1 to 3 family members Large = 4 to 7 family members.
3. Locality recoded into LOCALITY 1 or Others and renamed Locat.

Recoding resulted in a better balance of the number of subjects in the different categories and hence a stronger analysis of the variables. Table 8.7 below illustrates this.

Table 8.7

Recoded variables for Between-Subjects Factors

		N
Age category	Mid	168
	Old	55
	Young	15
Location category LOCALITY 1 or other	LOCALITY 1	108
	Others	130
Small and Large families	Large	114
	small	124

Table 8.8

Summary of Variables to be used in analysis of data

Independent Variables	**Dependent Variables**
Location (Locat)	Interaction
Age of person completing scale (Agecat)	Cohesion
Number of family members in household (Famcat)	Communication

8.7.2 Analysis of Variance (ANOVA) of pre-test data at T1

Principal components Analysis revealed that the Strathclyde Family Wellbeing Scale was three dimensional, consisting of three separate subscales: Interaction, Cohesion and Communication. Hence, it was not unidimensional and consequently the three dimensions were investigated independently by an analysis of variance. Analysis of variance techniques are used when there are two or more groups or time points (Pallant, 2020). Given that there were three groups/independent variables to consider ie location, age and number of family members, an analysis of variance (ANOVA) was conducted on T1 data to compare the means in turn of each of the dependent variables: Family Interaction, Family Cohesion and Family, in these different groups. Conducting an ANOVA rather than repeated t-tests also reduced the possibility of Type 1 errors, where the null hypothesis is rejected when it is true (Pallant, 2020).

Hence, an analysis of the T1 data was carried out to investigate ANOVA to see whether there were any differences between these independent variables at T1 that might be of interest, and if there were any interaction effects of *location, age* and *number of family members* on each of *Family Interaction*, *Family Cohesion* and *Family Communication*. The rationale for this was to address questions set out in Table 8.9.

Table 8.9

Research Questions for analysis of independent and dependent variables

Main Effects at Pre-intervention T1
What is the impact of living in LOCALITY 1 or 'Other' localities on family interaction or cohesion or communication? Did the age of the person who completed the Family Wellbeing Scale impact on family interaction or cohesion or communication? Does the number of family members impact on family interaction or cohesion or communication?
Interaction Effects (double) at Pre-intervention T1
Does location and the number of family members influence family interaction or cohesion or communication? What is the impact of location and age on family interaction or cohesion or communication? What is the impact of the number of family members and age on family interaction or cohesion or communication?
Interaction Effects (triple) at Pre-intervention T1
What is the impact of location, age and number of family members on family interaction or cohesion or communication?

To carry out this analysis a Three-way Analysis of Variance (ANOVA) was necessary. This required:

- Three categorical, independent variables *(Locat, Agecat* and *Famcat*)
- One continuous, dependent variable, which individually, was each of Interaction, Cohesion and Communication.

A three-way ANOVA enabled simultaneous testing for the effect of each independent variable on each of the dependent variables and identification of any interaction effect. A three-way ANOVA means there are three independent variables and 'between groups' indicates that different people are in each of the groups. This technique enabled the assessment of the individual and joint effects of three independent variables on one dependent variable (Pallant, 2020).

Before conducting the ANOVA, the assumptions of parametric techniques underlying ANOVA were considered and are illustrated in Table 8.10.

Table 8.10

Assumptions underlying ANOVA

Assumption	**Comment**
1.Dependent variable should be measured at the continuous level (i.e., it is an interval or ratio variable).	Achieved – Strathclyde Family Wellbeing Scale was a 5-point Likert Scale and each of the subscales of Family Interaction, Family Cohesion and Family Communication were measured on a continuous scale.
2. Three independent variables should each consist of two or more categorical, independent groups.	Achieved – The three categorical, independent variables are Locat, Agecat and Famcat.
3. independence of observations, which means that there is no relationship between the observations in each group or between the groups themselves.	Achieved – The Strathclyde Family Wellbeing Scale was conducted separately with individual families. Therefore, there was no relationship between the observations in each group or between the groups themselves.
4. There should be no significant outliers	Achieved - Outliers were detected and eliminated as detailed in Chapter 6.
5. Dependent variable should be approximately normally distributed for each combination of the groups of the three independent variables.	Achieved – T1 scores were normally distributed for 15/16 items (see Chapter 6). Following PCA items were reduced to 10 items captured in three subscales. All items for T1 within the three subscales had acceptable values for Skewness and Kurtosis as detailed in Table 7.5 above.
6. There needs to be homogeneity of variances for each combination of the groups of the three independent variables.	Achieved - Levene's Test for homogeneity of variances was carried out when conducting the ANOVA and was not significant. Hence, there was homogeneity of variances.

8.7.3 ANOVA Results

A three-way Analysis of Variance (ANOVA) was conducted to explore the impact of location, age of person completing the scale and the number of family members in the household, on levels of wellbeing measured by the subscales of the Strathclyde Family Wellbeing Scale. The subscales were: Family Interaction, Family Cohesion and Family Wellbeing. An ANOVA was carried out, individually, on each dependent T1 variable: Interaction, Cohesion and Communication, using the three independent variables: Locat, Agecat and Famcat. See Table 8.11 below.

Participants were divided into three groups according to their age (Young: 0-24 years, Mid: 25-39 years, Old: 40 years and above); two groups according to location (LOCALITY 1 or Others) and two groups according to number of family members in the household (Small: up to 3 members or Large: 4 and above).

Table 8.11

The interaction effect (impact) of location, age of person completing the scale and the number of family members in the household on Family Interaction at T1

Tests of Between-Subjects Effects

Dependent Variable: MeanofT1Q2Q7Q11Q13

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	7.768[a]	11	.706	1.524	.124	.069
Intercept	709.345	1	709.345	1530.358	<.001	.871
agecat	.052	2	.026	.056	.946	.000
Locat	1.745	1	1.745	3.764	.054	.016
Famcat2	.028	1	.028	.061	.805	.000
agecat * Locat	.117	2	.058	.126	.882	.001
agecat * Famcat2	1.138	2	.569	1.228	.295	.011
Locat * Famcat2	.079	1	.079	.171	.679	.001
agecat * Locat * Famcat2	.076	2	.038	.082	.921	.001
Error	104.755	226	.464			
Total	2599.989	238				
Corrected Total	112.523	237				

a. R Squared = .069 (Adjusted R Squared = .024)

The interaction effect between location, age and number of family members on Family Interaction was not statistically significant, F (2, 226) = .082, p = .921. The interaction effect between location, and number of family members on Family Interaction was not statistically significant, F (1, 226) = .171, p = .679. The interaction effect between age and number of family members on Family Interaction was not statistically significant, F (2, 226) = 1.228, p = .295. The interaction effect between location and age and on Family Interaction was not statistically significant, F (2, 226) = .126, p = .882. There was no statistically significant main effect for number of family members on Family Interaction, F (1, 226) = .061, p = .805. There was no statistically significant main effect for location on Family Interaction, F (1, 226) = 3.764, p = .054, however, it was close to being significant. There was no statistically significant main effect for age on Family Interaction, F (2, 226) = .056, p = .946.

Table 8.12

The interaction effect (impact) of location, age of person completing the scale and the number of family members in the household on Family Cohesion at T1

Tests of Between-Subjects Effects

Dependent Variable: MeanofT1Q4Q8Q9

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	5.806[a]	11	.528	.911	.531	.042
Intercept	726.044	1	726.044	1252.915	<.001	.847
agecat	1.636	2	.818	1.411	.246	.012
Locat	3.837	1	3.837	6.621	.011	.028
Famcat2	.018	1	.018	.031	.861	.000
agecat * Locat	2.271	2	1.135	1.959	.143	.017
agecat * Famcat2	.136	2	.068	.117	.890	.001
Locat * Famcat2	1.179	1	1.179	2.035	.155	.009
agecat * Locat * Famcat2	.293	2	.147	.253	.777	.002
Error	130.963	226	.579			
Total	2633.621	238				
Corrected Total	136.769	237				

a. R Squared = .042 (Adjusted R Squared = -.004)

The interaction effect between location, age and number of family members on Family Cohesion was not statistically significant, *F* (2, 226) = .253, *p* = .777. The interaction effect between location, and number of family members on Family Cohesion was not statistically significant, *F* (1, 226) = 2.035, *p* = .155. The interaction effect between age and number of family members on Family Cohesion was not statistically significant, *F* (2, 226) = .117, *p* = .890. The interaction effect between location and age and on Family Cohesion was not statistically significant, *F* (2, 226) = 1.959, *p* = .143. There was no statistically significant main effect for number of family members on Family Cohesion, *F* (1, 226) = .031, *p* = .861. There was a statistically significant main effect for location on Family Cohesion, F (1, 226) = 6.621, p = .011. However, the effect size was small (Partial Eta squared = .028) **(**Cohen, Cohen, West & Aitken, 1983). There was no statistically significant main effect for age on Family Cohesion, *F* (2, 226) = 1.411, *p* = .246.

Table 8.13

The interaction effect (impact) of location, age of person completing the scale and the number of family members in the household on Family Communication at T1

Tests of Between-Subjects Effects

Dependent Variable: MeanofT1Q3Q12Q16

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	2.896[a]	11	.263	.511	.895	.024
Intercept	725.626	1	725.626	1407.450	<.001	.862
agecat	.589	2	.294	.571	.566	.005
Locat	.102	1	.102	.198	.657	.001
Famcat2	.055	1	.055	.107	.744	.000
agecat * Locat	.593	2	.296	.575	.564	.005
agecat * Famcat2	.101	2	.051	.098	.906	.001
Locat * Famcat2	1.192	1	1.192	2.313	.130	.010
agecat * Locat * Famcat2	1.381	2	.690	1.339	.264	.012
Error	116.517	226	.516			
Total	2736.723	238				
Corrected Total	119.412	237				

a. R Squared = .024 (Adjusted R Squared = -.023)

The interaction effect between location, age and number of family members on Family Communication was not statistically significant, F (2, 226) = 1.339, p = .264. The interaction effect between location, and number of family members on Family Communication was not statistically significant, F (1, 226) = 2.313, p = .130. The interaction effect between age and number of family members on Family Communication was not statistically significant, F (2, 226) = .098, p = .906. The interaction effect between location and age and on Family Communication was not statistically significant, F (2, 226) = .575, p = .564. There was no statistically significant main effect for number of family members on Family Communication, F (1, 226) = .107, p = .744. There was no statistically significant main effect for location on Family Communication, F (1, 226) = .198, p = .657. There was no statistically significant main effect for age on Family Communication, F (2, 226) = .571, p = .566.

To summarise, there was only one significant main effect for location on Family Cohesion at pre-test T1. There were no other significant main effects or interactions. The next section analyses pre- and post-data ie the change in Family Wellbeing using the three constructs of Family Interaction, Family Cohesion and Family from T1 to T2.

8.8 Analysis of Pre and Post Data: Change in Family Wellbeing from T1 to T2 using the three constructs of Family Interaction, Family Cohesion and Family Communication

The ANOVA conducted on the Subscale constructs: Interaction, Cohesion and Communication at T1 had only one significant main effect for location on Family Cohesion. There were no other significant main effects or interaction effects. This suggested that location, age or number of family members did not impact on two of the three constructs: Family Interaction or Family Communication. However, location may have some impact on the construct of Family Cohesion. Consequently, two possible methods for analysing pre and post data required consideration: analysis of covariance (ANCOVA) and repeated measure analysis of variance (ANOVA).

However, preliminary analyses indicated that the assumptions of ANCOVA were not met. Specifically, the assumption of homogeneity of regression slopes was

violated. This indicated that there was an interaction between the independent variable (Location) and the covariate (Cohesion ie Mean of T1Q4Q8Q9). Hence, the ANCOVA was terminated, and a Repeated Measures ANOVA was used instead to assess the impact of the intervention of the Family First Service on families' scores on the Family Wellbeing Scale, which is reported in section 8.9.

8.9 Repeated Measures ANOVA

A mixed between-within subjects analysis of variance (Tabachnick & Fidell, 2013) was conducted to assess the impact of the intervention of the Family First Service on families' scores on the Strathclyde Family Wellbeing Scale (measured by the three subscales: Family Interaction (Mean of Q2Q7Q11Q13), Family Cohesion (Mean of Q4Q8Q9) and Family Communication (Mean of Q3Q12Q16), across two time periods (pre-intervention T1 and post-intervention T2), between three different groups: location, age and number of family members.

8.9.1 Summary of test statistics for Family Interaction (Mean of Q2Q7Q11Q13), Family Cohesion (Mean of Q4Q8Q9) and Family Communication (Mean of Q3Q12Q16)

The assumptions underlying ANOVA were detailed in Table 8.10 and confirmed they were all met for T1 data. Tables 8.16 and 8.17 below show the Within-Subjects Factors and Between-Subjects Factors used in the Repeated Measures ANOVA. Table 8.18 summarises the test statistics for the assumptions that should be met for a mixed between-within subjects' analysis of variance to be conducted. All assumptions were met apart from Box's Test of Equality of Covariance Matrices and Levene's Test of Equality of Error Variances, which were both significant for Cohesion and therefore violated these assumptions.

However, Box's Test is a very sensitive statistic (Pallant, 2020), but if group sizes are over 30, then the multivariate analysis of variance is robust against violations of homogeneity of variance-covariance matrices assumption (Allen & Bennett, 2008). Table 8.17 shows that the total group sizes for age, location and family size all exceeded 30, suggesting that the repeated ANOVA will be robust to this. Levene's Test was only significant for the cohesion variable at T2, which was

previously identified in Table 8.3 as having a Kurtosis value = 2.232, which is slightly outside the accepted range for normality, and this may be responsible.

Table 8.16

Within-Subjects factor – comparison of the means of the three subscales at T1 and at T2

Timepoint	Dependent Variable	Dependent Variable	Dependent Variable
1	MT1 Interaction	MT1 Cohesion	MT1 Communication
2	MT2 Interaction	MT1 Cohesion	MT2 Communication

Table 8.17

Between-Subjects Factors – for age, location, and family size

		N
Age category	Mid	168
	Old	55
	Young	15
Location category LOCALITY 1 or other	LOCALITY 1	108
	Others	130
Small and Large families	Large	114
	small	124

Table 8.18

Summary of results for Box, Mauchly and Levene Tests

Test	**Variable**	**Significance**	**Interpretation**
Box's Test of Equality of Covariance Matrices	Interaction (Mean of T1/T2Q2Q7Q11Q13)	.081	Not significant. Assumption not violated.
	Cohesion (Mean of T1/T2Q4Q8Q9)	<.001	Significant. Assumption violated.
	Communication (Mean of T1/T2Q3Q12Q16)	.693	Not significant. Assumption not violated.
Mauchly's Test of Sphericity	Interaction (Mean of T1/T2Q2Q7Q11Q13)	Assumed as only two levels PreT1 and Post T2	Sphericity assumed
	Cohesion (Mean of T1/T2 Q4Q8Q9)	Assumed as only two levels PreT1 and Post T2	Sphericity assumed
	Communication (Mean of T1/T2 Q3Q12Q16)	Assumed as only two levels PreT1 and Post T2	Sphericity assumed
Levene's Test of Equality of Error Variances	Interaction (Mean of T1/T2Q2Q7Q11Q13)	.477 / .064	T1 / T2 Not significant. Assumption not violated.
	Cohesion (Mean of T1/T2Q4Q8Q9)	.120 / .002	T1 Not significant / T2 Significant Assumption not violated for T1 but violated for T2.
	Communication (Mean of T1/T2 Q3Q12Q16)	.816 / .137	T1 / T2 Not significant. Assumption not violated.

8.9.2 Mixed Repeated Measures ANOVA for Family Interaction (Mean of Q2Q7Q11Q13), Family Cohesion (Mean of Q4Q8Q9) and Family Communication (Mean of Q3Q12Q16)

The mixed between-within subjects analysis of variance to assess the impact of the intervention of the Family First Service on families' scores on the Strathclyde Family Wellbeing Scale measured by Interaction, Cohesion and Communication at pre-intervention time-point 1 and post-intervention time-point 2, between three different groups: location, age and number of family members, gave the following results for interactions. All effects are reported as significant at $p < .05$. All effect sizes are reported according to (Cohen et al.,1983) categorisation of estimated magnitude of an effect size for eta squared, threshold values as: small (.01), medium (.06), and large effects (.14).

Summary of results of mixed repeated ANOVA

There was a large main effect of time-point for Interaction, Wilks' Lambda = .722, F (1, 226) = 87.152, $p < .001$, (partial eta squared = .278). There was a large main effect of time-point for Cohesion, Wilks' Lambda = .733, F (1, 226) = 82.238, $p <$ .001, (partial eta squared = .267). There was a large main effect of time-point for Communication, Wilks' Lambda = .780, F (1, 226) = 63.591, $p < .001$, (partial eta squared = .220). This suggests that the intervention of the Family First Service between time-point 1 and time-point 2 had a significant impact on family interaction, family cohesion and family communication. There was a medium, significant interaction effect for Cohesion between time-point and location, Wilks' Lambda = .968, F (1, 226) = 7.375. p = .007, Partial eta squared = .032. This suggests that location appears to influence levels of Cohesion, as measured by the family wellbeing scale. Noticeably, time-point and location also came close to having a significant interaction effect on the variables of Interaction, and Communication. The graphs below clearly illustrate that significant positive score changes were made for Interaction, Cohesion and Communication for location between time-point 1 and time-point 2, especially for LOCALITY 1. There were no other significant interaction effects. The statistics for interaction effects are reported below.

Interaction

There was no significant interaction effect between time-point and age, Wilks' Lambda = .997, *F* (2, 226) = .343, *p* = .710, Partial eta squared = .003. There was no significant interaction effect between time-point and location, Wilks' Lambda = .985, *F* (1, 226) = .3513, *p* = .062, Partial eta squared = .015. There was no significant interaction effect between time-point and number of family members, Wilks' Lambda = .998, *F* (1, 226) = .340, *p* = .561, Partial eta squared = .002. There was no significant interaction effect between time-point and, age and location, Wilks' Lambda = .993, *F* (2, 226) = .745, *p* = .476, Partial eta squared = .007. There was no significant interaction effect between time-point and age and number of family members, Wilks' Lambda = .998, *F* (2, 226) = .178, *p* = .837, Partial eta squared = .002. There was no significant interaction effect between time-point and location and number of family members, Wilks' Lambda = .993, *F* (1, 226) = 1.538, *p* = .216, Partial eta squared = .007. There was no significant interaction effect between time-point and location and age and number of family members, Wilks' Lambda = .993, *F* (2, 226) = .850, *p* = .429, Partial eta squared = .007.

Cohesion

There was no significant interaction effect between time-point and age, Wilks' Lambda = .995, *F* (2, 226) = .523, *p* = .594, Partial eta squared = .005. There was a significant interaction effect between time-point and location, Wilks' Lambda = .968, *F* (1, 226) = 7.375. *p* = .007, Partial eta squared =.032. There was no significant interaction effect between time-point and number of family members, Wilks' Lambda = 1.000, *F* (1, 226) = .030, *p* = .862, Partial eta squared =.000. There was no significant interaction effect between time-point and age and location, Wilks' Lambda = .985, *F* (2, 226) = 1.682, *p* = .188, Partial eta squared = .015. There was no significant interaction effect between time-point and age and number of family members, Wilks' Lambda = .999, *F* (2, 226) = .104, *p* = .902, Partial eta squared = .001. There was no significant interaction effect between time-point and location and number of family members, Wilks' Lambda = .990, *F* (1, 226) = 2.261, *p* = .134, Partial eta squared = .010. There was no significant interaction effect between time-

point and location and age and number of family members, Wilks' Lambda = .997, *F* (2, 226) = .305, *p* = .738, Partial eta squared = .003.

Communication

There was no significant interaction effect between time-point and age, Wilks' Lambda = .997, *F* (2, 226) = .395, *p* = .674, Partial eta squared = .003. There was no significant interaction effect between time-point and location, Wilks' Lambda = .984, *F* (1, 226) = 3.716, *p* = .055, Partial eta squared = .016. There was no significant interaction effect between time-point and number of family members, Wilks' Lambda = .996, *F* (1, 226) = .823, *p* = .365, Partial eta squared = .004. There was no significant interaction effect between time-point and age and location, Wilks' Lambda = .988, *F* (2, 226) = 1.328, *P* = .267, Partial eta squared = .012. There was no significant interaction effect between time-point and age and number of family members, Wilks' Lambda = .997, F (2, 226) = .381, *p* = .683, Partial eta squared = .003. There was no significant interaction effect between time-point and location and number of family members, Wilks' Lambda = .994, *F* (1, 226) = 1.333, *p* = .249, Partial eta squared = .006. There was no significant interaction effect between time-point and location and age and number of family members, Wilks' Lambda = .985, *F* (2, 226) = 1.747, *p* = .177, Partial eta squared = .015.

Figure 8.1 shows that Family Interaction was lower in LOCALITY 1 at pre-intervention time-point 1 compared to other locations. Family Interaction in LOCALITY 1 and Other locations both improved post-intervention at time-point 2. But LOCALITY 1 improved more and almost reached the same level as Other locations at time-point 2.

Figure 8.1

Comparison of Family Interaction between LOCALITY 1 and Other locations in Council X at time-point 1 and time-point 2

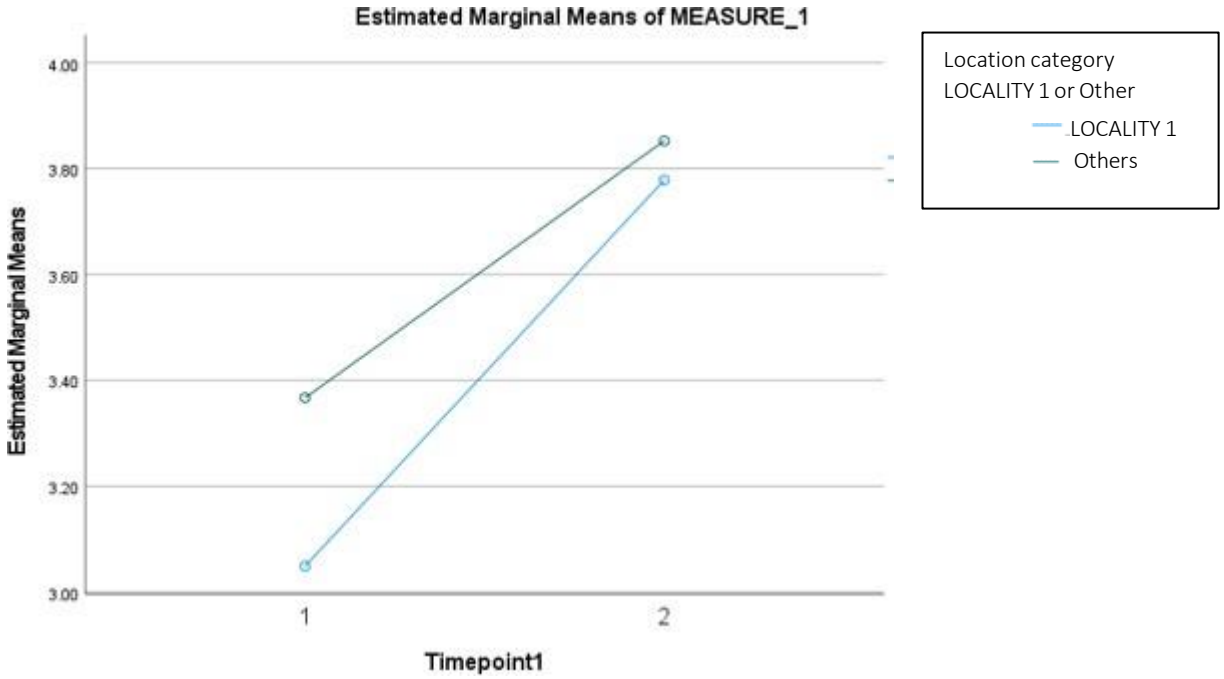


Figure 8.1 Location and Family Interaction at pre-intervention intervention time-point 1 and post-intervention time-point 2

Figure 8.2 shows that Family Cohesion was lower in LOCALITY 1 at pre-intervention Time-point 1 compared to other locations. Family Cohesion in LOCALITY 1 and other locations both improved post-intervention at time-point 2. But LOCALITY 1 improved more and reached the same level as other locations at time-point 2.

Figure 8.2

Comparison of Family Cohesion between LOCALITY 1 and Other locations in Council X at intervention time-point 1 and post-intervention time-point 2

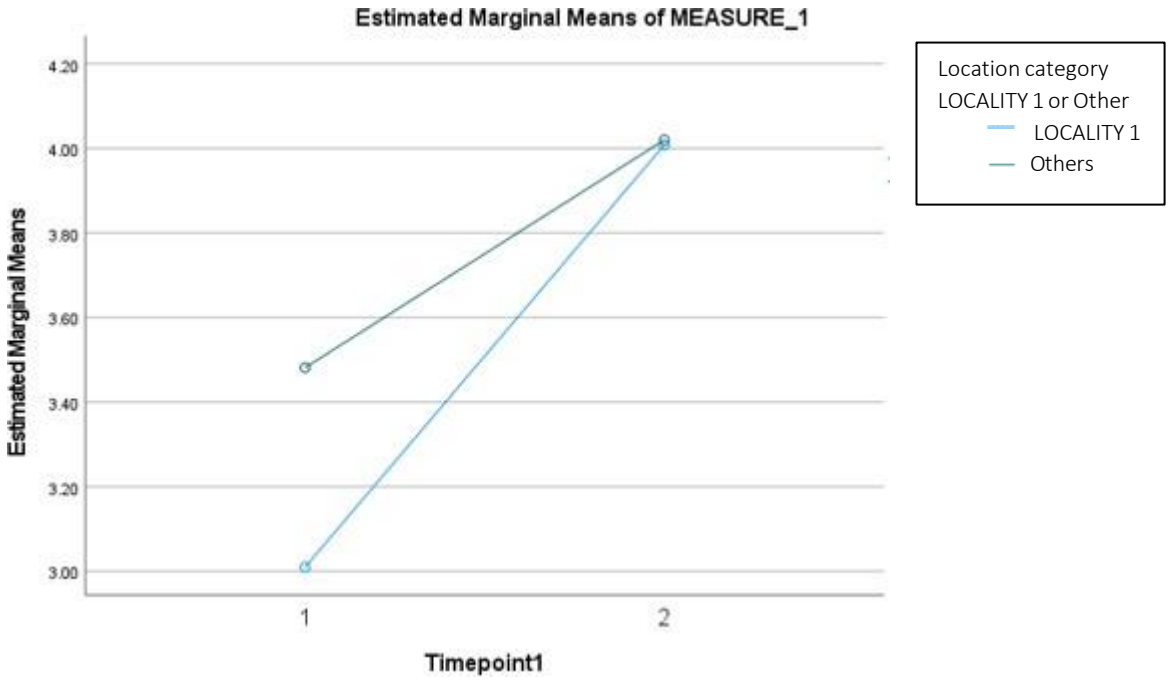


Figure 8.2 Location and Family Cohesion at pre-intervention intervention at time-point 1 and post-intervention time-point 2

Figure 8.3 shows that Family Communication was lower in LOCALITY 1 at pre-intervention at time-point 1 compared to other locations. Family Communication in LOCALITY 1 and other locations both improved post-intervention at time-point 2. But LOCALITY 1 improved more and exceeded the level of other locations at time-point 2.

Figure 8.3

Comparison of Family Communication between LOCALITY 1 and Other locations in Council X at intervention time-point 1 and post-intervention time-point 2

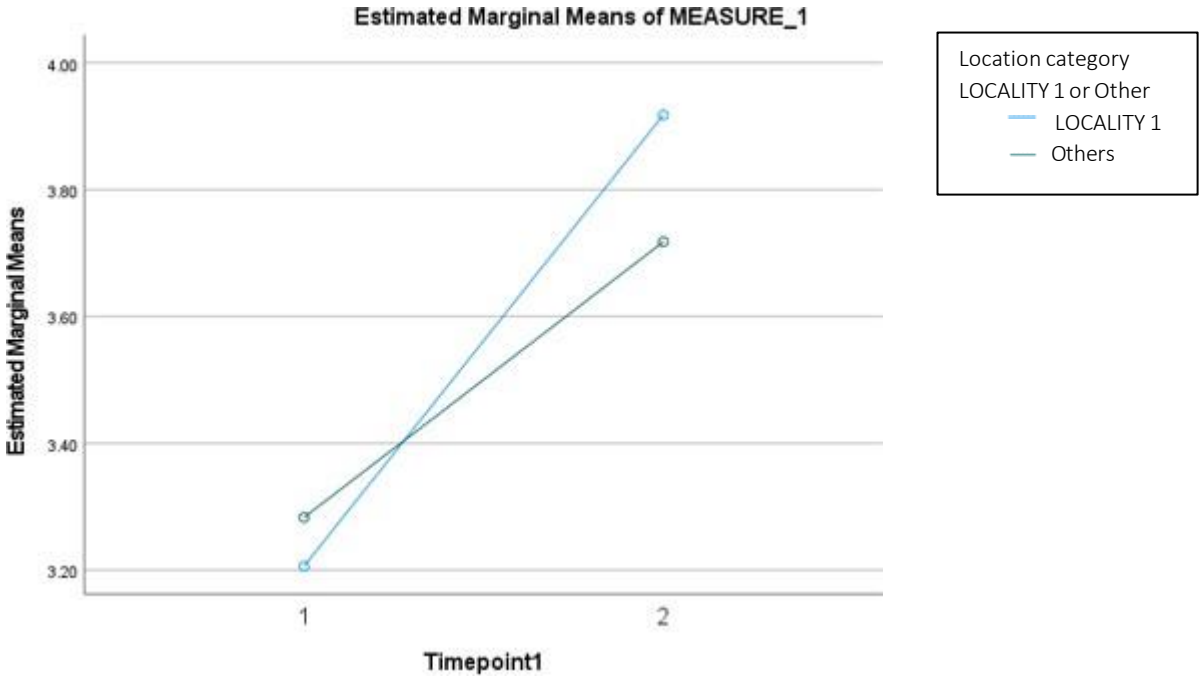


Figure 8.3 Location and Family Communication at pre-intervention time-point 1 and post-intervention time-point 2

The next chapter, Chapter 9, presents the findings of Study 3, the cross Validation of the results of Studies 1 and 2 of the Strathclyde Family Wellbeing Scale, by Participants' Evaluation of the Strathclyde Family Wellbeing Scale.

CHAPTER 9 RESULTS AND ANALYSIS

Study 3 Cross Validation of the Strathclyde Family Wellbeing Scale by Participants' Evaluation of the Strathclyde Family Wellbeing Scale

9.1 Rationale and Aims

Study 3 was designed to cross validate the findings from study 1 and study 2 to obtain qualitative evidence, to further validate the Strathclyde Family Wellbeing scale. Study 3 contributed to answering the primary Research Question: *How reliably can a short-form validated scale of family wellbeing measure the impact of early family-based intervention?* It also addressed the third aim of the thesis:

To investigate further the validity of the scores derived from the Strathclyde Family Wellbeing Scale by cross-validating findings with the pilot sample of families and the Family First Service who will be involved in interviews. Data will be collected by semi-structured interviews and focus groups and analysed by thematic analysis (Braun & Clarke, 2006).

Part 1 investigates the experiences and views of the professionals from the Family First Service who administered the Strathclyde Family Wellbeing Scale to families. Part 2 explores the experiences and views of parents who completed the Strathclyde Family Wellbeing Scale. The rationale, aims, design, analysis of data, procedures and ethics for all three studies, were discussed in Chapter 6: Methodology. Hence, Study 3 mainly focuses on the procedures and analysis of data, when conducting semi-structured interviews and the focus group for this part of the research. However, the specific methodology of focus groups is discussed briefly in this section. The results are presented at the end of the section.

PART 1 Evaluation of the Strathclyde Family Wellbeing Scale by Family First Service

9.2 Methodology

Focus groups are often employed when developing interventions (Barbour & Morgan, 2017) and can make valuable contributions to the review and adjustment of interventions (Eborall & Morton, 2017). Focus groups also facilitate the exploration of the relevant dimensions and appropriate wording for a questionnaire (Merton, 2001). This strongly supports their use in cross validating the data obtained from the Strathclyde Family Wellbeing Scale. Indeed, employing different methodologies may achieve more than just corroboration of findings, but provide new important information (Barbour 2014). This is particularly pertinent if there is divergence of findings, for example, in this study, if the qualitative evidence differed significantly between the focus group with professionals and the semi-structured interviews with parents, and from the quantitative data collated from the Family Wellbeing Scale. Consequently, the research design for this study was enhanced by using focus groups, which provided a supplement to the use of quantitative methods (Caillaud & Flick, 2017).

Focus groups can actually motivate individuals, who may be hesitant to contribute to discussions (Morgan 1988; Barbour 2007), which is especially important when investigating approval of an intervention, which offers a new approach (Eborall and Morton, 2017). This reflects the present study, where the Family First Service piloted a new scale to measure family wellbeing, where the confidence of practitioners and unfamiliarity with using such a tool may influence the outcome (Eborall and Morton, 2017). Focus groups can also enable participants to give genuine and critical opinions, where they may be reluctant in a more intense, individual interview setting outcome (Eborall and Morton, 2017). This is also particularly relevant to the current study, where the researcher has a working relationship with professionals from the Family First Service. Hence, focus group methodology was highly appropriate for the purpose of cross validation.

9.3 Procedures

Usually, a focus group consists of a homogeneous group of five to eight people, who are asked to discuss a range of questions posed by a facilitator (Robinson, 1999). This approach was followed in this study, where all five professionals from the Family First Service were invited to attend a focus group. They were given a Participant Information sheet (PIS) and Consent Form to inform them of the format of the focus group and to indicate their consent. The focus group was conducted by the trainee educational psychologist, who was currently placed in the educational psychology service, and the assistant psychologist. This followed the recommendations of the University of Strathclyde's Ethics Committee to mitigate against any bias if the researcher had carried them out himself.

The role of the facilitator requires skills, particularly, to promote discussion without unduly influencing the group to a particular viewpoint, such as a prior hypothesis (Sim, 1998). Consequently, the researcher briefed the trainee educational psychologist and the assistant psychologist beforehand and gave them a bespoke focus group schedule detailing the introduction, format and questions for the focus group. Robson (2002) highlighted the advantages of having a second researcher, so having both trainee and the assistant psychologist present was arranged, which would maximise data collection and accuracy.

Group discussion is an essential feature of focus groups, involving sharing views and experiences and passing comments (Kitzinger 1994). Hence, the focus group schedule (Appendix 2) set out the questions and gave advice on setting an informal tone for the interview as well as prompts, to facilitate the conversation. The focus group lasted about 45minutes and was audio recorded on an ipad and then sent for transcription to an independent professional. This process was fully explained in the PIS and Consent Form.

9.4 Data Analysis

Thematic analysis was used to analyse the findings, which is a technique for detecting, examining and recording patterns (themes) within data, and has the advantage of flexibility (Braun & Clarke, 2006). The selection of thematic analysis, articulated well with the theoretical method in this study, which was cross validation with scale data. Braun and Clarke (2006) highlight the importance of the researcher stating why they chose this method regarding what they want to find out by utilising this process.

The epistemological stance of critical realism for the overall research was explained in Chapter 6: Methodology, because it is compatible with social research characterised by a scientific approach (Robson, 2002). This stance was consolidated by Thematic Analysis, which can be viewed as 'contextualist' approach, located between essentialism and constructionism, and reflected by theories, such as critical realism (eg, Willig, 1999), which recognises how individuals comprehend their experience and, subsequently how the wider social context impacts on their comprehension (Braun & Clarke, 2006). Thematic analysis can thus be a facilitative process to mirror reality and to reveal what lies beneath its exterior.

A deductive, 'top down' (theoretical) thematic analysis was adopted rather than an inductive approach as it was the best fit with the researcher's epistemology, specific area of interest and research aims: to explore the views and experiences of practitioners from the Family First Service, when using the Strathclyde Family Wellbeing Scale with families. This recognised "that researchers cannot free themselves of their theoretical and epistemological commitments" (Braun & Clarke, 2006, p. 84). Hence, the analysis was determined by the focus of interest and consequently influenced the format of coding and themes to be specific in nature (Braun & Clarke, 2006). In line with this theoretical approach, the focus was on the experience of using the Strathclyde Family Wellbeing Scale by practitioners, and how it was captured in the data. Consequently, a semantic/explicit approach to analysing the themes was adopted, which examined what the practitioners actually said, rather than at a latent level (Boyatzis, 1998), which investigates beneath the discourse to identify underlying ideas and ideologies ((Braun & Clarke, 2006). The

codes and themes identified were then scrutinised to form a theoretical understanding of their importance and implications (Patton, 1990).

Thematic analysis was carried out in a nonlinear fashion and was recursive in nature (Braun & Clarke, 2006), which resulted in certain semantic interpretations and decisions being made, with codes being rejected or split and subthemes merged. The author recognised that subjectivity was an inevitable risk to data analysis and was transparent about this hazard. The author was guided throughout the data analysis by: *A tool for evaluating TA manuscripts for publication: Twenty questions to guide assessment of TA research quality*, developed by Braun and Clarke (2021) and contained in Appendix 8. The six stages of thematic analysis were then followed and applied to the transcript of the focus group with the Family First Service, as detailed in Table 9.1 below.

Table 9.1

Phases of Thematic Analysis

Phase	Description of the process
1. Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Note. From Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, *3*(2), 77-101.

9.5 Inter-rater reliability

The codes, subthemes and themes were created by hand rather than via technology. The researcher then subjected them to an inter-rater reliability assessment. Inter-rater agreement is the extent to which two or more raters find the same result, when measuring behaviour (Robson, 2002). Rater reliability is important because it indicates the extent to which the data gathered in a study accurately represents the variables measured (McHugh, 2012).

In this study, it involved the assistant psychologist inspecting the themes and subthemes, then indicating if she agreed with their description and if they matched with the codes/illustrative comments. The assistant psychologist recorded a 1 against a subtheme identified by the researcher to show agreement and a 0 if they disagreed. 1A indicated agreement but included a recommendation of a minor change to wording. 0A indicated a disagreement and an alternative eg new description or alternative wording. The difference in scores between researcher and assistant psychologist was calculated by subtracting the 0A scores assigned by the assistant from the scores assigned by the researcher.

This approach measured the extent to which the data collectors (researcher and assistant psychologist) assigned the same score to the same variable (theme/subtheme), defined as interrater reliability (McHugh, 2012). The method described above and demonstrated in Table 9.2 below, is called the *index of agreement* (Robson, 2002) *or percent agreement* (McHugh, 2012).

A discussion then took place to compare and resolve any differences. The results of the inter-rater reliability analysis for the thematic analysis of the Family First Service focus group are contained in Table 9.2. The table shows the number and percentage of inter-rater agreements and subsequent outcome of the discussion to resolve the differences.

(a) Percent Agreement

Table 9.2

Inter-rater reliability: comparison of agreement scores between researcher and assistant psychologist for thematic analysis of the Family First Service focus group

	Researcher score	**Assistant Psychologist score**	**Difference in scores between researcher/assistant psychologist**	**% agreement in scores**	**Outcome**
Total no. of Themes (5)	5	5	0	100	Because 1A was given for one theme, a minor change to the wording was agreed
Total no. of subthemes (19)	19	16	3	84	Because 0A was given for three subthemes, alternative descriptions were agreed for the three subthemes

(b) Cohen's Kappa

Another method of measuring inter-rater reliability is by calculating Cohen's Kappa, (Cohen, 1960). This is principally because kappa adjusts for chance agreement, which is not the case for percentage agreement (Bakeman, 2022). However, there has been criticism of the accuracy of Kappa because there are conditions which affect the value of Kappa. These include observer accuracy and independence as well as the number of codes or ratings (Bakeman and Quera, 2011). Nevertheless, Kappa was calculated as a further measure of inter-rater reliability in this study to strengthen the analysis of results.

Cohen proposed the Kappa result be categorised as follows: values ≤ 0 as indicating no agreement and 0.01–0.20 as none to slight, 0.21–0.40 as fair, 0.41–

0.60 as moderate, 0.61–0.80 as substantial, and 0.81– 1.00 as almost perfect agreement (McHugh, 2012).

Calculation of Cohen's kappa may be performed according to the following formula:

$$\kappa = \frac{Pr\,(a) - Pr\,(e)}{1 - Pr\,(e)}$$

Where Pr(a) represents the actual observed agreement, and Pr(e) represents chance agreement.

(i) Themes

For 100% agreement on the 5 themes for the focus group between researcher and assistant psychologist, there is no need to calculate Kappa. but for illustrative purposes it is demonstrated below.

Pr(a) = actual observed agreement = 5/5 = 1

Pr (e) = 0.5 because there was only a binary choice of response by the assistant psychologist, either *Yes* if agree or *No* if disagree. So, chance of agreement is 50% ie 0.5.

$$\kappa = \frac{Pr\,(a) - Pr\,(e)}{1 - Pr\,(e)}$$

$$= \frac{1 - 0.5}{1 - 0.5}$$

$$= \frac{0.5}{0.5}$$

$$= 1$$

(ii) Subthemes

Pr(a) = actual observed agreement between researcher and assistant psychologist = 16/19 = 0.842

Pr (e) = 0.5 as explained above,

$$\kappa = \frac{Pr\,(a) - Pr\,(e)}{1 - Pr\,(e)}$$

$$= \frac{0.842 - 0.5}{1 - 0.5}$$

$$= \frac{0.342}{0.5}$$

= 0.68

From the above categorisation of Kappa, 0.68 may be interpreted as substantial agreement between the researcher and assistant psychologist on the descriptions of the subthemes derived from the focus group data.

9.6 Results

The results of the thematic analysis are presented in table 9.3 below. One code/illustrative comment is listed in the table for each of the subthemes. In compiling the table, the author acknowledged that, following Braun and Clarke (2006), researcher judgement is required to decide what a theme is and flexibility on that decision is essential. In particular, they point out that the significance of a theme is not based merely on frequency of occurrence, but rather if it highlights a particularly relevant feature in relation to the overall research question. This approach was adopted when analysing the data and is reflected in the tables below, containing the results of the thematic analysis.

The following core components underpin the overall aim of developing a valid and reliable scale, which measures family wellbeing and the impact on families of support from the Family First Service. These are:

1. Outcomes (identified by Family First Service / families)

2. Impact (on Family First Service / families)

3. Validity (scale measures areas closely related to family wellbeing, identified by Family First Service / families)

4. Reliability (scale measures consistently)

5. Measurement (evidence that change occurred, identified by Family First Service / family)

These core components appear in the first column of Tables 9.3 and 9.4 and were cross referenced with the Themes that emerged from the thematic analysis, which are stated in the second column of the tables. Only one example of each Code/'Illustrative Statement' extracted from the focus group, is presented in the last column of the table, to facilitate understanding of the process of deriving the emergent theme. The Frequency column records the number of times the

code/illustrative statements actually occurred in the data, from which the subthemes were derived and subsequently the themes.

9.7 Comments on results of thematic analysis of focus group with Family First

The themes that emerged from the focus group with professionals from the Family First Service, appeared to map effectively on to the core components stated in section 9.6, which underpinned the research aims of the study. The results will be discussed in more detail in Chapter 10.

Table 9.3

Summary Results of Thematic Analysis of Family First Focus Group

Core Components	**Theme (N =5)**	**Subthemes (N=19)**	**Frequency**	**Illustrative Statement (Code)**
1.Outcomes	Scale supports Improvement of wellbeing	Solving problems	1	-It's solving some of these problems
		Helping relationships	1	-Difference that it's made to their everyday relationships within their family
		More confidence	1	-they've got more confidence
		boost wellbeing	4	-they can't believe it themselves and it's a real boost to their mental health and wellbeing
		Improved self-reflection	2	-it makes them aware as well that these issues that they might be having can potentially affect the whole family ..parents maybe didn't think of how these issues
		Progress	1	-let's, you do the wellbeing scale, look at how far you've come from the first scale to this one
2. Impact	Scale supports development of professional skills	Focused discussion	3	-we'd ask general questions but they're very specific now
		Increased confidence	4	- I think that our confidence has grown and we're more at ease using it
		Training/learning/skills	12	-it makes you feel you're professional and you're using a tool. You're not just going in, going 'oh well, how's your day today

		Knowledge & understanding	5	- I suppose it just gave us a whole new knowledge of all different parts of what wellbeing…
3. Validity	Language of scale	Identification of aspects of wellbeing	6	-That's why the questions are so good because it makes you focus on, you know, 'there is a sense of peace among us', 'we have a hopeful attitude'. We all kind of get what that means.
		Reflecting	4	- I think the respect question is close, links a lot to behaviour, because it does definitely resonate with parents
		Facilitating communication	4	- when we do the wellbeing scale other things might come out that wouldn't maybe have come out just with some of the plain questioning like 'how are you?'
4. Reliability	Accuracy of scale to measure family wellbeing	True/honest	2	- so when you actually open up the question and have the conversation you get a truer response to the question
		Accuracy of measurement *(two examples cited)	8	- I think they're all very accurate. I've certainly found, yeah, I really like the questions and I'm happy using them -*I feel the love one doesn't change very much* *
5. Measurement	Scale facilitates assessment of family wellbeing	Simplifies situations	3	-Breakdown concept
		Efficient and effective	8	-if we were to find out all that information, ask all those questions, you'd be there for weeks so the fact that you just ask it in a scale
		Helps parents to reflect.	2	-the questions.. just gets the parents to really think a bit more
		Demonstrates Progress	9	I'll say to like Xxxxx, have you put your pre and post in, look at the difference, look at what you're doing for that family,

PART 2 Evaluation of the Family Wellbeing Scale by Parents

9.8 Rationale and Aims

Please see 9.1 above.

9.9 Methodology

Semi-structured interviews often contribute to a fixed design Robson (2002), which this study is primarily defined as, as explained in Chapter 6. Similarly, in mixed methods research, semi-structured interviews can be useful as an addition to enhance other approaches, for example, if after developing a standardized scale, you find that significant questions remain, which require more open-ended questions and further investigation Adams (2015). This reflects the rationale and aims of this study, where cross validation was being conducted to explore the views of participants regarding the Strathclyde Family Wellbeing Scale.

9.10 Procedures

The sample size of families and process of invitation via the Participant Information and Consent Forms, to participate in interviews was fully explained in Chapter 6: Methodology, which resulted in five families taking part. According to Adams (2015), interviewers need to be astute and informed about the research. This was addressed by recruiting and briefing the trainee educational psychologist and assistant psychologist to conduct the interviews, as explained in Part 1, 9.3 above, regarding the Focus Groups. The interviews were conducted online following the recommendations of the University of Strathclyde Ethics Committee. The Covid-19 pandemic was still in circulation at this time, and for health and safety reasons, conducting online rather than in person interviews was taken as a precautionary measure.

A bespoke interview schedule (Appendix 1) was drafted following Robson (2002, p. 279), which comprised five questions that mirrored questions posed in the focus group schedule and adopted the same approach, of establishing rapport and an informal question to start the dialogue (Adams, 2015). The interview contained prompts, but these were reduced following one of the earlier interviews, which was

rather lengthy and exceeded requirements. This resulted in an interview schedule designed to last about 30 minutes.

9.11 Data Analysis

The transcription process was the same as for the focus groups and the six phases of thematic analysis (Braun and Clarke, 2006) were used again to analyse the findings, which followed the same philosophical approach and epistemology as per the focus group with the Family First Service and is fully explained earlier in 9.4.

9.12 Inter-rater reliability

The same method of inter-rater reliability assessment, as detailed in 9.5 above, was applied to compare the agreement of scores between the researcher and assistant psychologist for thematic analysis of the semi-structured interviews with parents. Similarly, a discussion to compare and resolve any differences was conducted. The results of the inter-rater reliability analysis for the thematic analysis of the semi-structured interviews with parents are contained in Table 9.4. The table shows the number and percentage of inter-rater agreements and subsequent outcome of the discussion to resolve the differences.

(a) Percent Agreement

Table 9.4

Inter-rater reliability: comparison of agreement scores between researcher and assistant psychologist for thematic analysis of the semi-structured interviews with parents

	Researcher score	**Assistant Psychologist score**	**Difference in scores between researcher/assistant psychologist**	**% agreement in scores**	**Outcome**
Total no. of Themes (5)	5	5	0	100	Because 1A was given for one theme, a minor change to wording of one theme was agreed
Total no. of subthemes (17)	17	15	2	88	Because 0A was given for two subthemes, alternative descriptions were agreed for the two subthemes

(b) Cohen's Kappa

As detailed in 9.5 above, another method of measuring inter-rater reliability is by calculating Cohen's Kappa:

$$\kappa = \frac{Pr\,(a) - Pr\,(e)}{1 - Pr\,(e)}$$

(i) Themes

Once again, there was also 100% agreement on the 5 themes for the interviews with parents, between researcher and assistant psychologist. Hence, the Kappa statistic is the same as demonstrated in 9.5(b) above and equals 1.

(ii) Subthemes

Cohen's Kappa for the subtheme was 0.76. From the categorisation of Kappa detailed in 9.5 (b) above, 0.76 may be interpreted as substantial agreement between the researcher and assistant psychologist on the descriptions of the subthemes derived from the data from the semi-structured interviews with parents.

9.13 Results

The results of the thematic analysis of the semi-structured interviews with parents are presented in table 9.5 below. As in 9.5 above, one code/illustrative comment is listed in the table for each of the subthemes. The Frequency column shows the number of times individual illustrative comment/ codes were stated, which shared a similar aspect and were categorised under a subtheme. In compiling the table, the author followed the same approach set out in 9.5 above, regarding selection of codes, identification of themes and presentation of items.

Table 9.5

Summary Results of Thematic Analysis of Parents' evaluation of Strathclyde Family Wellbeing Scale

Core components	**Theme (N =5)**	**Subthemes (N=17)**	**Frequency**	**Illustrative Statement (Code)**
Outcomes	Completion of the scale Improves family wellbeing	Understanding & Awareness	8	-I hadn't even thought about, those kind of concepts before in my life. So, those ones, they were interesting because I hadn't realised that that all contributes to how you're coping as a family
		Confidence & Empowerment	4	- it gave me so much confidence, and it still does. Even thinking about it now, I do, I feel proud of myself - made us so much stronger and like there's so much, such a tighter knit family now
		Improvement of wellbeing	9	
Impact	Scale is supportive of Relationship based approach	Caring approach of Family First workers	2	- It genuinely feels like somebody cares and you've got kinda somebody there that you can lean on
		Specific support Strategies suggested by Family First workers	5	-Xxxx came up with the idea of a story book
		Family First workers' input	6	- Do you think completing the scale helped them to support your family wellbeing? Parent: Em, yeah, definitely

		generally helped wellbeing		
Validity	Scale items are meaningful, resonate with families and assess wellbeing	Identification of specific Qs	7	- Yeah. It's number 6 – 'we feel close to one another ' – 'there is a sense of peace among us'. They two kinda stand out more because obviously ….
		Understanding	2	- like that 'cos the questions are really easy to understand
		Accurate	5	-How closely did you think the items and statements reflect the features of wellbeing in your family? Parent: Good.
		Promoting self-reflection	14	- (Questions are) Uh huh, 'cos I think, if I, it's been like somebody kinda holding up a mirror to me and what's going on
Reliability	Scale responses contingent upon relationship and type of questions	Honesty/Trust	4	- I wasn't entirely honest with Xxxxxx 'cos, because it's the first time meeting her I didn't have a relationship with her like I have now and
		Understanding	3	- Xxxxxx broke it down and explained it for me a wee bit when she was asking me the questions.
		Accuracy	3	would you say the family wellbeing scale accurately measured wellbeing in your family? I'm probably leaning towards 'agree'
		Consistency	3	-… respect the roles of each other that, 'love each other' plays in the family so that is always one that kinda, it does change but it's kinda always kinda the same
Measurement	Scale Facilitates Change	Accessible	4	- it makes it easier to focus on what you need to do-it was completing that scale, I was like 'wait a wee minute, well, our communication's not great, and this isn't great and this isn't great and it's, aye, like that you don't get many opportunities in life for somebody to sit down and show you that
		Illuminating	3	

		Highlighting Progress/change	11	-because you get asked beforehand and then at the end it's great because you're seeing the difference of how you've done as a family - it's great 'cos it like just, even looking at that, it's like, god, we have actually made an improvement , we have done well and we are doing better at that

9.14 Comments on of results of semi-structured interviews with parents

The themes that emerged from the semi-structured interviews with parents who completed the scale also appeared to successfully map on to the same key components stated in section 9.6, which underpin the research aims of the study. The results will also be discussed in more detail in Chapter 10.

The results from all three studies will be discussed in full in Chapter 10: Discussion.

CHAPTER 10: DISCUSSION, CONCLUSIONS, AND IMPLICATIONS FOR PRACTICE

10.1 Rationale and Aims

The central aim of this study was the development and validation of a new scale to measure family wellbeing and to explore how reliably, a short-form validated scale of family wellbeing, can measure the impact of early family-based intervention. The specific aims of the study were to:

1. Explore and determine the underlying dimensions of the Strathclyde Family Wellbeing Scale (SFWS) using Principal Components Analysis (PCA) / Principal Axis analysis.
2. Investigate the utility of the Strathclyde Family Wellbeing Scale using factor scores from the Principal Component Analysis as a measure of outcome and impact and as a measure of its utility to measure outcome and impact of family-based interventions.
3. Investigate further the validity of the scores derived from the Strathclyde Family Wellbeing Scale by cross-validating findings with the pilot sample of families and the Family First Service who will be involved in interviews. Data will be collected by semi-structured interviews and focus groups and analysed by thematic analysis (Braun & Clarke, 2006).

The findings of this study confirmed the development of a valid and reliable scale to measure family wellbeing. The results also confirmed that the Strathclyde Family Wellbeing Scale had utility to measure the outcome and impact of family-based interventions, using factor scores from the Principal Component Analysis.

10.2 Discussion

The results of Study 1 showed that principal component analysis successfully determined the underlying dimensions of the Strathclyde Family Wellbeing Scale (SFWS). This revealed a three-component solution with simple structure (Thurstone, 1947), which explained a total of 66.67% of the variance. All three components showed strong loadings and all variables loaded on only one component, with no

cross-loading variables. Reliability analysis obtained strong values for Cronbach's Alpha and McDonald's Omega.

This was a strong result, which resulted in the final model of the Strathclyde Family Wellbeing Scale being transformed from a 16-item scale to a 10-item x 3-dimensional scale. The components and the scale items that loaded under them were inspected and a Factor Label assigned to describe each of the underlying three dimensions. These were:

Component 1 - Family Interaction
Component 2 - Family Cohesion
Component 3 - Family Communication

The finding that the Strathclyde Family Wellbeing Scale was multidimensional, not unidimensional, and was composed of three subscales was not surprising. Such a finding reflected the view that most researchers now believe that wellbeing constitutes a multi-dimensional construct (e.g., Diener, 2009; Michaelson, Abdallah, Steuer, Thompson, & Marks, 2009; Stiglitz, Sen, & Fitoussi 2009).

The multidimensionality of the Strathclyde Family Wellbeing Scale also aligns well with other research, for example, that family wellbeing was defined by three central processes: communication, organisation and belief systems (Walsh, 2015). Similarly, The Circumplex Model (Olson, Waldvogel & Schlieff, 2019) identified three major dimensions of cohesion, flexibility, and communication. Indeed, cohesion and flexibility are two of the dimensions that were named in the Strathclyde Family Wellbeing Scale. Finally, the American Family Strengths Inventory (DeFrain & Stinnet, 2008), on which the Strathclyde Family Wellbeing Scale was based, identified six major qualities that DeFrain and Stinnet (2002b) claimed, were present in strong families across the world.

In Chapter 4, in the review of published scales that measured wellbeing, multidimensionality was also common in many of the measures, such as the thoroughly researched, Well-being measurement and the WHO health policy Health 2010: systematic review of measurement scales (Lindert, Bain, Kubzansky & Stein, 2015). This found 33 of the 60 scales were multi-dimensional. Consequently, it is asserted that a three-dimensional scale reflects themes identified by research in the field, and the profoundly complicated nature of the elements that underpin wellbeing in families. Comparison with a review of published scales also showed that the FWS

closed a gap in the measurement of wellbeing in families by contributing a new, short-form scale based on contemporary language (wellbeing) and concepts (strength-based).

However, it is argued that the significance of multidimensionality should be explained to practitioners who use the Strathclyde Family Wellbeing Scale, precisely because it highlights a complex psychological construct, which should be mirrored in their practice. For example, the Family First Service, as previously explained employ a relationship-based approach when working with families, which complements a strength-based, multi-dimensional scale. Additionally, multi-dimensionality will have implications for practitioners when scoring the Strathclyde Family Wellbeing Scale, which will require training to ensure competency. Training was also a theme identified in the focus group with practitioners. The three dimensions, it is proposed, may also be characterised as individual drivers to improve family wellbeing, following the methodology of improvement science, which further expands the utility of the Strathclyde Family Wellbeing Scale to have impact in practice. This is discussed in more detail in section 10.4.

The 10 items contained in the scale were distinctly identified by principal component analysis, evidenced in the Pattern Matrix, and were also highly compatible, in terms of their meanings, with research by Walsh (2015) and Olson, Waldvogel and Schlieff, (2019). A noticeable pattern was that item 5 *('We love one another')*, was identified as an outlier, and failed to satisfy acceptable limits for Skew (-2.147) and Kurtosis (3.702). Additionally, item 5 was rejected following principal component analysis. Furthermore, it was commented upon by professionals from the Family First Service during their focus group, as not changing much, which was identified through cross-validation of results by thematic analysis. Item 5 was perhaps too emotive a statement, leading parents to give prosocial answers, hence they gave consistently high scores for that item and thus there was little variation in responses. The significance of this pattern is that item 5 effectively acted as 'tracker' or 'marker' item and was a thread which connected each stage of the analysis of data, from outlier to principal component analysis to thematic analysis. It was consistently excluded by each of these processes in Studies 1, 2 and 3, thus demonstrating the consistency and rigour of quantitative and qualitative analysis carried out.

Consequently, it is suggested that the reliability and robustness of the results are increased.

Closer inspection of items contained in the cohesion subscale of the Strathclyde Family Wellbeing Scale, (‘*We have a hopeful attitude towards life’ / ‘We have a strong sense of belonging’ / ‘Life in our family is satisfying to us’*), show good alignment with the Circumplex Model (Olson, Waldvogel & Schlieff, 2019). Cohesion is defined in that model as the emotional bonding between family members, encompassing concepts such as time, space, friends, decision making and interests, and recreation (Olson, Waldvogel and Schlieff, 2019). This is also true for the Communication dimension. Thus, the results of the Strathclyde Family Wellbeing Scale can be theoretically contextualised in another model, not just the Family Strengths Model (Stinnet and DeFrain, 1985). Hence, the findings contribute more widely to the field of family psychology by introducing new empirical data from Scotland, enabling comparison and synthesis with previous research.

Dimension 2, ‘Cohesion’, was somewhat surprising because it revealed the sensitivity of the Strathclyde Family Wellbeing Scale to measure items, which perhaps were more intangible. These items were: *‘We have a hopeful attitude towards life’, ‘We have a strong sense of belonging’ and ‘Life in our family is satisfying to us’*. Such items echo the description by Pollard and Lee (2003), that wellbeing is a complex, multi-faceted construct. An implication is the Strathclyde Family Wellbeing Scale may potentially, enhance discussions with families to include not just functional aspects of family life, such as communication and interaction, which are the other two dimensions, but more subtle characteristics such as optimism and family temperament.

Finally, there had been some concern about developing the Strathclyde Family Wellbeing Scale, based on an assumption that ‘strong’ families have high levels of wellbeing, and that the scale could therefore be termed, the Strathclyde Family Wellbeing Scale, using the contemporary terminology of wellbeing. While such an assumption was not completely wide of the mark, nevertheless a link was being made between two constructs, which were not identical. However, such concern was unfounded because Dunst (2021), in a robust meta-analytic investigation, identified clear evidence of the links between different qualities of

strong families and different dimensions of well-being. Hence, the terminology and name are clearly appropriate. It is suggested that this study, thus also supports the meta-analysis by Dunst (2021), further contributing to research in this area.

In Study 2, a three-way analysis of variance (ANOVA) found no statistically significant main effects or interaction effects at time-point 1, for location, age and number of family members, on Interaction and Communication, or interaction effects on Cohesion. There was a significant main effect for location on Cohesion, but the effect size was small. Nevertheless, this suggests that family wellbeing measured by cohesion, is partly influenced by where you live in Council X; that is LOCALITY 1 compared to all other locations in Council X. Family Cohesion was measured by items: *Q4 We have a hopeful attitude towards life /Q8 We have a strong sense of belonging / Q9 Life in our family is satisfying to us.* These items appeared to generate a different response from families living in LOCALITY 1 compared to those living in the rest of Council X before support from Family First.

Further investigation by a Repeated Measures ANOVA, showed there was a large main effect of time on Interaction, Cohesion and Communication, indicating that time factor had a significant effect on them. This suggests that the intervention of the Family First Service between time-point 1 and time-point 2 significantly improved family wellbeing in all three constructs of interaction, communication and cohesion in all locations in Council X. The medium, significant interaction effect for cohesion between time-point and location, suggests that location appeared to influence levels of cohesion. Interestingly, time-point and location also came close to having a significant interaction effect on interaction, and communication. Hence, once again location, ie living in LOCALITY 1 rather than elsewhere in Council X influenced results.

Graphs illustrated that Family wellbeing was lower for families living in LOCALITY 1 for all three constructs of wellbeing compared to other areas of Council X, before intervention by Family First. After intervention the gap for interaction, cohesion and communication all narrowed between LOCALITY 1 and other locations in Council X. For LOCALITY 1, the level of interaction remained slightly lower, while for cohesion it reached the same level, and for communication it exceeded the rest of Council X. The graphs illustrated that significant positive score

changes were made for each of Interaction, Cohesion and Communication for location between time-point 1 and time-point 2, especially for LOCALITY 1. An interesting pattern was that larger gains were made for each construct of family wellbeing and at a faster rate in LOCALITY 1 than anywhere else in Council X, following intervention by Family First.

The findings can be interpreted and contextualised with reference to the inequalities reported by the Growing Up in Scotland (GUS) Study and the statistics contained in Council X Children's Population at a Glance 2018-19/2019-20, SIMD 2020 and the ADD2LOCALITY 1 Locality Plan 2017 – 2027. The statistics highlighted areas of high deprivation within LOCALITY 1, and consequently the stress and challenges to family wellbeing experienced by families. This may explain the lower levels of family wellbeing compared to the rest of Council X. Prolonged economic difficulties can increase anxiety, depression, substance abuse, and suicide (Catalano et al., 2011; Phillips & Nugent, 2014). Given that approximately 20% of children and young people in LOCALITY 1 live in families who are out of work (ADD2LOCALITY 1 Locality Plan 2017 – 2027), there may be higher levels of mental health issues and subsequently reduced family wellbeing.

The pattern of larger, faster gains in family wellbeing in LOCALITY 1 after intervention by Family First, may be due to other locations starting from higher levels of family wellbeing, hence they have smaller margins in which to show improvement. Statistics suggested the degree of difficulties faced by families in LOCALITY 1 are greater, and perhaps they responded more eagerly to support from Family First, which may explain the rate of improvement. However, some caution must be applied to avoid over interpretation because the statistics also showed that LOCALITY 1 contained relatively affluent areas as well. This may explain why, although there was a significant main effect for location on cohesion, the effect size was small.

However, a clear positive outcome was that intervention by Family First significantly improved family wellbeing in Council X regardless of location. This aligns with the GUS finding that protective factors in families can reduce threats to wellbeing. For example, homes, which nurture learning can promote cognitive skills regardless of socio-economic circumstances (Parkes, Sweeting, & Wight, 2014)). So,

Family First intervention, which improves family interaction, cohesion and communication lays the groundwork for a positive environment in which learning can flourish.

Hence, we can conclude that the subscales of the Strathclyde Family Wellbeing Scale clearly have utility to measure impact and outcome of family-based interventions using the scores obtained from the factors. Significantly, the subscales were sensitive enough to detect small interaction effects, following application of statistical techniques. Consequently, it is asserted that the Strathclyde Family Wellbeing Scale makes a valuable contribution to the collection of instruments developed to measure family wellbeing and related concepts.

In Study 3, the thematic analysis of the focus group with practitioners and interviews with parents, cross-validated the results of studies 1 and 2, confirming the validity, reliability and capacity of the scale to measure family wellbeing. For example, scale validity and reliability were supported by statements from Family First professionals such as: “That’s why the questions are so good because it makes you focus on, you know, ‘there is a sense of peace among us’, ‘we have a hopeful attitude’. We all kind of get what that means.” and “I think they’re all very accurate. I’ve certainly found, yeah, I really like the questions and I’m happy using them”. Similarly, parents commented: “it’s been like somebody kinda holding up a mirror to me and what’s going on”. However, perhaps not surprisingly, reliability was contingent upon the relationship with Family First professionals, as reflected by the parental comment: “I wasn’t entirely honest with Xxxxx ‘cos, because it’s the first time meeting her I didn’t have a relationship with her like I have now...”.

An unexpected finding was the scale did not just measure family wellbeing, but also appeared to be a driver for improvement. This was evidenced by comments by Family First: “they can’t believe it themselves and it’s a real boost to their mental health and wellbeing”. Similarly, parents commented: - “it gave me so much confidence, and it still does. Even thinking about it now, I do, I feel proud of myself-made us so much stronger and like there’s so much, such a tighter knit family now”. These statements augur well for interventions to support families, and hence potentially strengthen the protective factors in families that reduce threats to wellbeing (Parkes, A., Sweeting, H., & Wight, D, 2014).

A surprise, from a personal perspective, was the disclosure of some anxiety among practitioners about using the scale, captured in the subtheme of training and learning: “I think that our confidence has grown and we’re more at ease using it” and “It makes you feel you’re professional and you’re using a tool. You’re not just going in, going ‘oh well, how’s your day today”. The Strathclyde Family Wellbeing Scale was short and accessible, and professionals from the Family First Service presented as knowledgeable and thoughtful during training, so this was a somewhat unexpected finding. However, it confirmed the importance of developing*: Guidance on the administration of the Family Wellbeing Scale* (Appendix 4) for practitioners, and that family wellbeing remains a complex phenomenon, which requires skill and sensitivity when being supported by professionals.

From a personal standpoint held in part before conducting the research, there was some surprise that multiple changes in society, such as technological advances, social media, social attitudes and weakening of established pillars of authority, did not impact more heavily on fundamental elements, identified as crucial to good family functioning and wellbeing. A theme of consistency and stability of family traits for good wellbeing and categorisation of families, emerged from research on family psychology. The Family Strengths Model (Stinnet & DeFrain, 1985) was shown to be robust and relevant for families in contemporary society, with replication of results by the authors and others over time and in different countries. In particular, Kelley and Sequeira (1997), validated and extended their model and categorisation of strong family traits. Similarly, the findings of the classic study by Minuchin (1974), which categorised families into three types: harmonious, disengaged and enmeshed, were repeated by Johnson (2003) and again by Sturge-Apple, Davies and Cummings (2010).

The consistency of research findings on families provides a solid foundation on which to continue to explore interventions to support them, while acknowledging contemporary societal pressures, but also effectively utilising the stable family traits and categorisations identified. The successful development of a contemporary, short form, validated scale to measure family wellbeing based on empirical data in Scotland, provides a new instrument to continue the research on family psychology. The Strathclyde Family Wellbeing Scale offers potential to develop new

interventions and contribute to our understanding of wellbeing in families and how they function in present day society.

10.3 Study Limitations

Several limitations exist that may have impacted on the study and require consideration. The sample population was limited to families in Council X. While this still provided a large population to draw upon, Council X is mainly an affluent area of Scotland as explained in 3.7, which means that poverty and its impact on family wellbeing may have been reduced. Consequently, data collected by the Strathclyde Family Wellbeing Scale and via the focus group with Family First and semi-structured interviews with parents, might not fully reflect the influence of poverty related issues.

Methodological limitations also exist. Principal components analysis (PCA) assumes that the sample selected is the population, and consequently results cannot be generalised beyond that particular sample, as is also the case for principal axis factoring (Field 2005a). PCA and principal axis factoring typically produce similar solutions. When either method is used, conclusions are limited to the sample collected and generalisation of the results is possible only if analysis using different samples identifies the same factor structure (Field 2005a). Thus, interpretation of the results is again restricted to Council X and the families recruited to the Family First Service.

A further technical limitation was lack of a comparator tool to measure family wellbeing, which could reveal correlations with the Strathclyde Family Wellbeing Scale that was developed. This is recommended to explore the target construct (ie Family Wellbeing) fully and understand the construct from both theoretical and empirical perspectives (Clark & Watson,1995). However, it is argued that in the early stages of adapting the American Family Strengths Inventory (AFSI) (DeFrain & Stinnet, 2008), during the preliminary pilot, the AFSI was reduced to 64 items and split into two scales of 32 items. (see 6.3.5). This allowed a wide selection of items to be sampled from the original inventory and comparison of the results of the two scales following piloting with educational psychologists across Scotland. The results were instructive rather than directive as it was not as rigorous as the current

study. However, it did provide valuable information as to the efficacy of the items selected from the AFSI. Additionally, identifying an appropriate comparable scale would have been challenging, as reflected in the literature review of this study.

Finally, the logistics of persuading the Family First Service to pilot two scales, as well as training, collecting, and storing data was not a viable option or feasible in this study.

Implementation fidelity of the Strathclyde Family Wellbeing Scale relied on the skill of Family First professionals to administer the scale appropriately and collect data accurately. Despite this, it is possible that fidelity may have been compromised, for example, in terms of consistency. However, intensive training on use of the scale was given and the document: *Guidance on the administration of the Family Wellbeing Scale* (Appendix 4), reinforced the training, to mitigate any potential breaches of administration fidelity.

Finally, the subjectivity of thematic analysis is recognised, which extends to the themes and subthemes identified. Despite close adherence to thematic analysis procedures, inevitably there is a risk of bias on the part of the researcher. This was acknowledged in Study 3, by selection of a deductive, 'top down' (theoretical) thematic analysis as it was the best fit with the researcher's epistemology, specific area of interest and research aim. This concurred with the view "that researchers cannot free themselves of their theoretical and epistemological commitments" (Braun & Clarke, 2006, p. 84).

10.4 Implications for future research

The development of a new scale to measure family wellbeing makes an original contribution to the field of research on families. From the perspective of a practising educational psychologist trained in the ecological model, the Strathclyde Family Wellbeing Scale offers the opportunity to collect data on wellbeing in families across Scotland and beyond using a scale that is short, robust, and user-friendly. Consequently, application in other localities with a different sample of families could potentially result in a national profile of family wellbeing, as well as further validation of the scale.

It is suggested that further research using the Strathclyde Family Wellbeing Scale may be augmented, by utilising relatively new methodologies, such as Improvement Science and Translational Research, in which the researcher has been trained. The Model for Improvement uses the *Plan-Do-Study-Act (PDSA) Cycle* and *Tests of Change* to drive improvement (Langley, Moen, Nolan, K. N., Nolan, T. W, Norman & Provost, 2009). Following the Model for Improvement, the three dimensions: Interaction, Cohesion and Communication could be utilised as individual drivers, to set targets for families to improve specifically in those areas. This narrows and deepens the focus of interventions, potentially generating new strategies to support families in a targeted and more impactful way.

Translational Research connects researchers, practitioners, policymakers, and community members in various combinations with the purpose of creating better research, policies, programmes and practices (Bronfenbrenner Centre for Translational Research, Cornell University, 2023). It is asserted that the Strathclyde Family wellbeing Scale was developed, partly by drawing upon Translational Research methodology, because it involved the active participation of practitioners, families, and policy makers in Council X in the process. Such an approach can be continued by extending the findings of the Strathclyde Family Wellbeing Scale to influence policy such as the Whole Family Wellbeing Fund (Scottish Government, 2023) and parenting programmes such as Triple P (Sanders, 2003).

A Translational Research approach to wellbeing is exemplified by the relocation of ten departments to establish the multidisciplinary School of Health & Wellbeing, in the newly opened, Clarice Pears Building on 12 September 2023, at the University of Glasgow. The building was constructed on wellbeing principles and provides facilities for the public to use, and the School of Health & Wellbeing is proactively aiming to involve the community in research projects in a fundamental way, via design and collaboration.

Following the literature review of published tools developed to measure family wellbeing, in the paper: *Quick, simple measures of family relationships for use in clinical practice and research. A systematic review (2010),* the authors concluded there was a need for future research that obtained multi-informant data on families (Pritchett, Kemp, Wilson, Minnis, Bryce and Gillberg, 2010). The

Strathclyde Family Wellbeing Scale was only used with the parents of families referred to the Family First Service. However, ethical approval from the University of Strathclyde Ethics Committee was obtained to use the scale with young people from 12years and upwards. A Participant Information Sheet and Consent Form (Appendix 7) was also drafted for this age group. A future research study could be conducted using the Strathclyde Family Wellbeing Scale with this age range, which could validate the scale for use with this cohort. It would also progress and partly satisfy the recommendation of gathering multi-informant views of family life as recommended by Pritchett, Kemp, Wilson, Minnis, Bryce & Gillberg, 2010).

The literature review also examined the paper: *Family wellbeing of individuals with autism spectrum disorder: A scoping review (2015),* which explored family wellbeing from the perspective of families of individuals with autism (Tint and Weiss, 2015). Future research could similarly explore other perspectives and types of families, such as family wellbeing from the perspective of care experienced families who foster young people placed in their care, using the Strathclyde Family Wellbeing Scale. The scale could be used in practice, strategically, to assess the level of wellbeing in families prior to children and young people being adopted or fostered by families.

The Whole Family Wellbeing Fund (WFWF) (Scottish Government, 2023) is a multi-million-pound investment to support Children's Services Planning Partnerships to scale up and provide whole family support services in their areas. The Strathclyde Family Wellbeing Scale could be used to track progress and the measurement of WFWF outcomes, to evaluate strategic plans and service delivery. This approach is planned in Council X. Indeed, the researcher was recently contacted by lead professionals from the neighbouring Council Y and the West partnership (a conglomeration of local authorities), to request use of the Strathclyde Family Wellbeing Scale for the same purpose. WFWF representatives of the Scottish Government also attended the meeting.

10.5 Implications for Educational Psychologists

As discussed in 10.4 above, further research regarding the Whole Family Wellbeing Fund (WFWF) (Scottish Government, 2023) has already been actioned. The researcher as an educational psychologist, will be strategically involved in implementing the Strathclyde Family Wellbeing Scale to support the measurement of WFWF outcomes in Council X. Educational psychologists from Council X Psychological Service are members of the local authority Adoption & Fostering Panel and the Kinship Panel. They are well placed to promote the use of the Strathclyde Family Wellbeing Scale to assess family wellbeing in prospective adoption and fostering families, also suggested in 10.4.

The Strathclyde Family Wellbeing Scale, similarly, considered in 10.4, has utility to be used as a tool for improving wellbeing in families. Based on this thinking, the researcher was invited to present a poster on the Family Wellbeing Scale at the International Forum on Quality and Safety in Healthcare, Copenhagen May 2023, which showcased new initiatives to improve outcomes for people in the care sector. The concept of using the subscales as targeted drivers of improvement was proposed in the peer reviewed poster submission for the conference and will be explored further in practice with the Family First Service.

Finally, developing a scale presented a significant challenge of achieving established statistical and ethical standards of validity and reliability, based on data obtained from an appropriate population and sample size. This was reflected in the ethical approval process, which was rigorously followed by the University of Strathclyde Ethics Committee. Such a challenge has implications for practitioners and could present a substantial obstacle for educational psychologists in practice, who wish to develop similar instruments.

10.6 Conclusion

This study: The development and validation of a scale to measure family wellbeing (The Strathclyde Family Wellbeing Scale), successfully achieved its aims to:

1. Explore and determine the underlying dimensions of the Strathclyde Family Wellbeing Scale (SFWS) using Principal Components Analysis (PCA)/ Principal Axis analysis.
2. Investigate the utility of the Strathclyde Family Wellbeing Scale using factor scores from the Principal Component Analysis as a measure of outcome and impact and as a measure of its utility to measure outcome and impact of family-based interventions.
3. Investigate further the validity of the scores derived from the Strathclyde Family Wellbeing Scale by cross-validating findings with the pilot sample of families and the Family First Service who will be involved in interviews. Data will be collected by semi structured interviews and focus groups and analysed by thematic analysis (Braun & Clarke, 2006).

The literature review also demonstrated that the Strathclyde Family Wellbeing Scale could make a valuable and original contribution to the field of family studies. The potential impact at international level, to improve health care interventions was confirmed by its inclusion at the International Forum on Quality and Safety in Healthcare, Copenhagen, 2023. Additionally, perhaps other innovations such as developing a game to promote family wellbeing, which would complement the Strathclyde family wellbeing scale could be explored.

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APPENDIX 1

Semi-Structured Interview Guide for the Validation of the Family Wellbeing Scale: Family Participants

Introduction

Thank you for agreeing to participate in this interview, which is a follow-up to the Family wellbeing Scale, which you completed. We are interviewing you to understand what parents/carers and their children think about the Family Wellbeing Scale and how we might improve it to measure wellbeing. So there are no right or wrong answers to any of our questions, we are interested in your own experience. Participation in this study is voluntary and your decision to participate, or not participate, will not affect the support you received from the Family First Service/Family Wellbeing Service. The interview should take approximately 45minutes depending on how much information you would like to share. With your permission, I would like to audio record the interview because I don't want to miss any of your comments. Can I first of all assure you that you will remain completely anonymous and no records of the interview will be kept with your name on it? All responses will be kept confidential. This means that your de-identified interview responses will only be shared with research team members and we will ensure that any information we include in our report does not identify you as the respondent. You may decline to answer any question or stop the interview at any time and for any reason. Are there any questions about what I have just explained? May I turn on the digital recorder?

Please note that this guide only represents the main themes to be discussed with the participants and as such does not include the various prompts that may also be used (examples given for each question). Non-leading and general prompts will also be used, such as "Can you please tell me a little bit more about that?" and "What does that look like for you".

Establishing Rapport

Before we begin, it would be nice if you could tell me a little bit about yourself. Tailor a question here to specific person and/or situation. Example: "I hope I haven't taken you away from something you were really enjoying?"

1. Previous understanding of wellbeing/family wellbeing

Q. Can you tell me about your understanding of family wellbeing before you completed the Family Wellbeing Scale? [Scaling: Would you say - Very poor, poor, fair, good, excellent?]

Prompts: What were your particular concerns about your Family Wellbeing? (eg communication; spending time together; affection; outlook of the family (optimism); family bonds etc.)

2. Participant Experiences of completing the Family Wellbeing Scale (Validity)

Q. Was the Family Wellbeing Scale easy to understand? How closely did you think the items/statements reflect the features/aspects of wellbeing in your family?

Prompts: Has your understanding of family wellbeing changed? Did the scale influence your understanding of family wellbeing? Were there any statements that particularly resonated with you? What makes you say that? Did the scale help you to identify the particular concerns that you wanted to improve in your family wellbeing? Can you say what those items were? So would you say the items in the Family Wellbeing Scale accurately reflected the key elements/features of wellbeing in families? [Scaling: Would you say - Very poorly, poorly, fair, good, excellent? Or strongly disagree, agree, neither agree/disagree, agree, strongly agree].

3. Changes in participant family wellbeing scores post completion of scale (Reliability)

Q. How would you describe your family wellbeing since receiving support from Family First/Family Wellbeing? What does that look like for you?

Prompts: For example, has your family wellbeing improved, declined or remained the same? Do you think the scale reflected the change in your family wellbeing? How accurately would you say it measured the change? Were there any particular items/statements that especially accurately measured the change in your family wellbeing? Can you say what they were? How did they measure the change? What was the difference? *Eg Before we didn't spend much time together but now we do*. Were there any items/areas of family wellbeing that the scale did not measure the change well? So would you say the Family Wellbeing Scale accurately measured wellbeing in your family? [Scaling: Would you say - Very poorly, poorly, fair, good, excellent? Or strongly disagree, agree, neither agree/disagree, agree, strongly agree].

4. Changes in participant family wellbeing behaviours post completion of scale (Impact)

Q. What are the reasons you think your family wellbeing has improved, declined or remained the same?

Prompt: Thinking back to when you completed the scale, can you describe any situations where behaviour in your family has changed? Do you think using the scale helped you to change behaviour in your family? Can you say how it helped? Were you surprised by the change in your scores or were they what you expected. Do you think using the scale helped the conversations you had with practitioners from the Family First or Family Wellbeing Services? Can you say a bit more? Do you think completing the scale helped them to support your family wellbeing? In what way did it help? So would you say, completing the Family Wellbeing Scale had a significant impact on helping you to change your family wellbeing? [Scaling: Would you say - Very poorly, poorly, fair, good, excellent? Or strongly disagree, agree, neither agree/disagree, agree, strongly agree].

5. Conclusion.

Q. Would you recommend completing the Family Wellbeing Scale as a way of measuring wellbeing to other families with similar concerns? [Scaling: Would you say – Strongly disapprove, disapprove, neutral, approve, strongly approve]

Prompts: Can you explain why you would or would not recommend completing this scale? Is there anything else that you would like to comment on about the Family Wellbeing Scale that we haven't discussed today? Thank you very much for your time and the information you shared today.

APPENDIX 2

Focus Group Guide for the Validation of the Family Wellbeing scale

Focus Group with Family First Service

Introduction

Thank you for agreeing to participate in this focus group / interview, which is a follow-up to the Family wellbeing Scale, which you administered. We are interviewing you to understand what you think about the Family Wellbeing Scale, how it may have impacted your practise and how we might improve it to measure wellbeing. So there are no right or wrong answers to any of our questions, we are interested in your own experience. Participation in this study is voluntary and your decision to participate, or not participate, will not affect your practise in the Family First Service/Family Wellbeing Service. It is emphasised that the focus group/ (interviewee) should not be influenced by the existing professional relationship between the researcher and professionals and that professionals respect the views and confidentiality of the members of the group. An impartial, objective opinion from professionals is essential in order to contribute to the validation process of the Family Wellbeing Scale.

The focus group /interview should take approximately one hour depending on how much information you would like to share. With your permission, I would like to audio record the focus group / interview because I don't want to miss any of your comments. Can I first of all assure you that you will remain completely anonymous and no records of the focus group / interview will be kept with your name on it? All responses will be kept confidential. This means that your de-identified focus group / interview responses will only be shared with research team members and we will ensure that any information we include in our report does not identify you as the respondent. You may decline to answer any question or stop the interview at any time and for any reason. Are there any questions about what I have just explained? May I turn on the digital recorder?

Please note that this guide only represents the main themes to be discussed with the participants and as such does not include the various prompts that may also be used (examples given for each question). Non-leading and general prompts will also

be used, such as “Can you please tell me a little bit more about that?” and “What does that look like for you”.

Establishing Rapport

Before we begin, it would be nice if you could tell me a little bit about yourself. Tailor a question here to specific person and/or situation. Example: “Can you tell me which locality you work in eg LOCALITY 1, LOCALITY 2 etc?”

1. Previous understanding of concepts and constructs of family wellbeing

Q. Thinking back, can you tell me about your concept of family wellbeing **before** you administered the Family Wellbeing Scale? [Scaling: Would you say - Very poor, poor, fair, good, excellent?]

Prompts: Did you have a clear concept of it? What features/aspects of wellbeing did you think particularly defined family wellbeing in your experience? Can you give any specific examples? How did they impact on the family? (eg communication; spending time together; affection; outlook of the family (optimism); family bonds etc.)

2. Participant Experiences of administering the Family Wellbeing Scale and their perceptions of compatibility with constructs of family wellbeing (Validity)

Q. Thinking about your experience of using the Family Wellbeing Scale with families, was it easy to administer? How closely did you think the items/statements reflected the features/aspects of wellbeing as you understood them?

Prompts: How closely did you think the items/statements reflected the features/aspects of wellbeing that were raised as concerns by families? Did the scale help you to identify particular areas of wellbeing that you wanted to improve in families? Can you say what those items were? Were there any statements in the Family Wellbeing Scale that particularly resonated with you? Were there any statements in the Family Wellbeing Scale that particularly resonated with the families with whom you worked? What makes you say that? So would you say the items in the Family Wellbeing Scale were a good fit/match for wellbeing features in practise/real life? [Scaling: Would you say - Very poorly, poorly, fair, good, excellent? Or strongly disagree, agree, neither agree/disagree, agree, strongly agree].

3. Participant perceptions of measuring changes in family wellbeing using the Family Wellbeing Scale (Reliability)

Q. Thinking about when you used the Family Wellbeing Scale for the first time with families, how well would you say the Family Wellbeing Scale measured their wellbeing, taking into account the issues of concern? What about when you repeated the scale?

Prompts: Do you think the scale accurately reflected the change in family wellbeing after your input? Were there any items/statements that especially seemed to measure the change in family wellbeing particularly accurately? Can you say what they were? How did they measure the change? What was the difference in the scores? What did the change look like? Eg Before we didn't spend much time together but now we do - change from 2 to 5. Were there any items that the Family Wellbeing Scale did not appear to measure the change well? Ie was not sensitive enough to change. So would you say the items in the scale reliably measured changes in family wellbeing? [Scaling: Would you say - Very poorly, poorly, fair, good, excellent? Or strongly disagree, agree, neither agree/disagree, agree, strongly agree].

4. Changes in participant family wellbeing behaviours post completion of scale (Impact)

Q. Thinking of your overall experience of using the Family Wellbeing Scale, has it changed or influenced your concept of family wellbeing?

Prompt: Has using the Family Wellbeing Scale influenced or changed the way you practise? In what way? Can you tell me more about that? Do you think using the scale helped you to change behaviours in the families with which you worked? Can you say how it helped? Were you surprised by the impact the scale had on you or the families? Do you think using the scale helped the conversations you had with the families with which you worked? Can you tell me more about that? Do you think completing the scale helped you as a practitioner to support their family wellbeing? In what way did it help? So would you say the Family Wellbeing Scale had a significant impact on your practise? [Scaling: Would you say - Very poorly, poorly, fair, good, excellent? Or strongly disagree, agree, neither agree/disagree, agree, strongly agree].

5. Conclusion.

Q. Would you recommend completing the Family Wellbeing Scale as a way of measuring wellbeing in families? [Scaling: Would you say – Strongly disapprove, disapprove, neutral, approve, strongly approve]

Prompts: Can you explain why you would or would not recommend completing this scale? Is there anything else that you would like to comment on about the Family Wellbeing Scale that we haven't discussed today? Thank you very much for your time and the information you shared today.

Appendix 3

Family Wellbeing Scale

Your responses are voluntary and will not be identified by individual. They will be kept in the strictest confidence. Our aim is to improve Family Wellbeing.

ID Number: _____

Please place a cross in the circle that best applies to you.

Gender:

- ○ Male
- ○ Female
- ○ Other

Age:

- ○ 0-11
- ○ 12-18
- ○ 19-24
- ○ 25-39
- ○ 40-50
- ○ 50+

Locality:

- ○ Locality 1
- ○ Locality 2
- ○ Locality 3
- ○ Locality 4
- ○ Locality 5
- ○ Locality 6
- ○ Locality 7
- ○ Locality 8
- ○ Locality 9
- ○ Locality 10

Please read the statements below, and using the scale (1 – 5) indicate how the statement applies to your perception of your family.

Never (1)
Not much of the time (2)
Some of the time (3)
Quite a lot of the time (4)
All of the time (5)

1	We like to have fun together	1	2	3	4	5
2	We enjoy helping each other	1	2	3	4	5
3	We like to share our feelings with each other	1	2	3	4	5
4	We have a hopeful attitude towards life	1	2	3	4	5
5	We love one another	1	2	3	4	5
6	We feel close to one another	1	2	3	4	5
7	We listen to each other	1	2	3	4	5
8	We have a strong sense of belonging	1	2	3	4	5
9	Life in our family is satisfying to us	1	2	3	4	5
10	We have lots of good times together	1	2	3	4	5
11	We like to be kind to each other	1	2	3	4	5
12	We enjoy our family discussions	1	2	3	4	5
13	We respect the roles each of us plays in the family	1	2	3	4	5
14	There is a sense of peace among us	1	2	3	4	5
15	We like to hug each other	1	2	3	4	5
16	We find it easy to be honest with each other	1	2	3	4	5
TOTAL SCORE (X/80)						

Appendix 4

Guidance on the administration of the Family Wellbeing Scale

1. What is the Family Wellbeing Scale?

The Family Wellbeing Scale was developed to measure wellbeing in families. It consists of 16 items on a 5 point scale and asks participants to indicate what their wellbeing is on each item. It also asks participants to indicate their: age, gender, locality and number of family members.

2. When should the Family Wellbeing Scale be administered for the first time?

Practitioners should ask families to complete the scale on the ***first session or the second session*** at the latest unless here are exceptional circumstances. This is necessary to ensure consistency of practise and to measure accurately the impact that practitioners have on families. If it is carried out after that, their level of family wellbeing may already have changed since the practitioner contacted them to offer support.

3. When should the Family Wellbeing Scale be administered for the second time?

Practitioners should ask families to complete the scale again at the point of discharge. Although discharge times will vary depending on the family, as a guide, practitioners should consider repeating the scale ***after 10-12 sessions*** and it must be done by the ***12th session*** at the latest, even if they intend to continue working with the family. This also reflects similar practise in other counselling organisations (The Association for Family Therapy and Systemic Practice, 2021; British Association for Counselling and Psychotherapy, 2017). This requirement is to ensure consistency of application of the scale for research purposes. If the point of discharge is less than 10 sessions, then it is repeated at the last session.

4. How should the Family Wellbeing Scale be administered?

Step 1 Consent

Completing the scale is entirely voluntary and participants must give consent. Give the ***Participant Information and Consent form*** to the family member(s) and ensure they fully understand the purpose of completing the Family Wellbeing Scale and the research that is being conducted to validate the scale. Practitioners must specifically ask children over the age of 12 years to give consent to complete the scale (UNCRC, 1989, Articles 3, 12 and 13). ***No children under the age of 12 years should be asked to take part.*** Participants should sign the form or give verbal consent, if the scale is being completed by telephone or online, which is then recorded by practitioners.

Step 2 Completing the scale with participants

Practitioners may read the scale to participants or participants may choose to complete it independently. Practitioners should ensure that participants understand each of the statements to obtain as accurate a measure of family wellbeing as possible. The scale may be completed using pencil and paper or by the link to the Microsoft form version of the scale. If completed by paper, practitioners should carefully upload the paper version as soon as possible to the Microsoft form version.

If participants become distressed when completing the Family Wellbeing Scale, the process should be paused and time given to compose themselves and reflect on whether they wish to continue. They may also be offered further support from the Service Manager to discuss input from the Service. Practitioners may also suggest contacting Bridges Primary Care Mental Health team (Bridges PCMHT). Bridges PCMHT is a short-term psychological service that work with people who have mild to moderate mental health difficulties. They are a free service in Council X that support adults who are age 18 and over to help develop their coping skills and improve their mood. Bridges can help with common mental health difficulties, such as depression, panic attacks, stress and anxiety disorders. As a short-term psychological service, they generally offer 6 to 8 sessions, which can include one to one counselling. Access to the service is by referral by GP or other health care professional or they can self-refer, if 18 or older and registered to a GP in the Council X area. The referral form can be accessed at Bridges to Wellbeing contact form - Council X

This isn't a crisis service. If participants are having suicidal thoughts, please advise them to contact any of the following:

• Their GP
• NHS 24 on 111
• The Samaritans on 116 123
• Breathing Space on 0800 83 85 87

Step 3 Uploading the data from the Family Wellbeing Scale

Practitioners should click on the link, which takes them to the Microsoft forms version of the Family Wellbeing Scale. Practitioners can complete the scale with families directly using this link. If it has been completed by paper, click on the link and transfer the scores to the Microsoft form and upload the paper version. This should be done as soon as possible. The link is:

4. Storage of data

Families are informed that their answers to the questions in the scale will be stored in CHILDREN 1st's confidential pass word protected database which only CHILDREN 1st staff members are able to access. The Family First Service store the data on their confidential database and only they can access it. Researchers only have access to completely anonymised data, which will be stored on the University of Strathclyde's One Drive.

Step 5 Debriefing participants

Practitioners should discuss the scores obtained on the Family Wellbeing Scale when it is repeated with families for the second time at the point of discharge. This enables participants to see if any progress has been made with family wellbeing since support was given. Practitioners are reminded again of implementing the procedures outlined in **Step 2** above should participants become distressed when discussing their family wellbeing scores as they may not have improved or indeed have decreased.

The following prompts are suggested to assist the debrief process and ensure a positive, solution oriented approach is taken (Bavelas, De Jong, Franklin, Froerer, Gingerich, Kim, Korman, Langer, Lee, McCollum, Jordan and Trepper, 2013). Hence, the following principles should be adopted (Education Scotland, 2016):

Ten Principles of Solution Oriented Meetings

1. Listen to the person; listen for possibilities.
2. People have the necessary resources to make changes.
3. Everyone has their own ways of solving problems.
4. No sign-up, no change. Collaboration enhances change.
5. Language shapes and moulds how we make sense of the world.
6. A focus on future possibilities and solutions enhance change.
7. There are always exceptions to the problem.
8. Small changes can lead to bigger changes.
9. If it works do more of it; if it doesn't, do something different.
10. The problem is the problem, not the person.

Script for Individual Debrief Sessions and prompts

Active Empathic Listening – Remember:

· Accept and acknowledge the person and where they are at

· Listen for the core message – feelings and behaviour

· Be aware of TONE, VOLUME, CADENCE

· Listen, acknowledge and validate

·Reframe

Helpful Questions

Open:	Normally start with 'What', 'How' and 'When'.
Opening question:	'Can you tell me a bit about what happened from your point of view?'
Exploratory:	Could you say a bit more about . . .?
Specific:	When you say John upset you, what did he do?
Feelings:	How do you feel about that?

Example questions for the Family Wellbeing Scale

- What changes do you notice about your scores on the Family Wellbeing Scale this time?
- What items on the scale have the scores improved?
- What do you think you or others in your family did to improve these scores? Can you say a bit more about that?
- How do you feel about the changes in your scores?
- What difference will that make to your family wellbeing/your relationships at home?

Step 6 Semi-structured interviews and further research outputs

Remind participants that they may be invited to take part in a semi-structured interview with the researchers to discuss their experience of the scale, and that when the research on the scale is completed a summary report may be posted on the websites of the Service website. The report will summarise the main findings and conclusions of the research but will contain no details of any families that participated in the research. Hence, jigsaw identification of any families will not be possible. Finish the discussion by thanking the participants for taking part and praising them for all the hard work and effort they put in to improve their family wellbeing.

E McGee September 2021
Doctoral Student, University of Strathclyde

Appendix 5

The Family Wellbeing Scale: Participant information sheet for professionals

Name of department: School of Psychological Sciences and Health.

Title of the study: The development and validation of a scale to measure family wellbeing: The Family Wellbeing Scale

Who is conducting the research?

The research is being carried out by Eddie McGee who is a doctoral student at the University of Strathclyde. You can contact me by email at edward.mcgee@strath.ac.uk if you have any questions or concerns.

Dr Clare Daly is my research supervisor at the University of Strathclyde who can be contacted via email at: clare.daly@strath.ac.uk.

Introduction

You are invited to take part in a study about family wellbeing. The study is about testing the validity and reliability of the new measure: the Family Wellbeing Scale. Participants will be invited to take part in a focus group, or an interview if preferred, to discuss their experience of using the Family Wellbeing Scale. The findings will help to shape more effective support for families in the future.

Purpose of the research?

The purpose of the research is to build on research previously carried out by the Family First Service and has been designed to allow comparisons to previous findings. We will also look at themes within the research which may inform our future service provision.

Do I have to take part?

It is completely voluntary, if you don't want to take part, you do not have to give a reason. If you do want to take part, but change your mind later, you can pull out of the study up until the point of data collection. This is when everything is anonymised meaning we would be unable to identify your information to withdraw it from the research.

How do I withdraw from the research?

If you agree to take part in a focus group, data cannot be withdrawn afterwards because the data relates to a multi-way conversation. However, if you agree to do an individual interview, the data can be withdrawn up to three days afterwards, as after this point, the interview will be transcribed and anonymised. To do this please contact the researchers by email (contact details are above and at the end of this sheet).

After three days, the audio recording of your interview will be transcribed by an independent professional (a researcher within East Renfrewshire Council) and any potentially identifiable information will be removed. Your audio recording will then be deleted. The transcribed data will then be anonymised. Audio recordings will be made using an East Renfrewshire Council, encrypted device eg ipad, using only the audio record function. The audio recordings will be stored on this password protected device, which will be locked in a secure location in Council offices, before they are transcribed.

What do I have to do?

If you agree to take part, you will be asked to sign the Consent Form at the bottom of this page. Please return the Consent Form, by using an electronic signature and sending to the researcher via email.

Then what?

1. Arranging the focus group or interview

You can contact the researchers directly by their email addresses, if you wish to participate in the focus group or interview.

2. Focus group / Interview

To find out your views and experience of completing the Family Wellbeing Scale and whether you think it accurately and reliably measured family wellbeing we will invite you to a focus group or interview. The focus group / interview will take place at a time that suits you and will last approximately 1 hour. The focus group will consist of a maximum of 6 people from your Service, who have been using the Family Wellbeing Scale.

3. Types of questions

The questions will focus on your views of wellbeing, the relevance of the statements in the scale and how reliably you thought it measured wellbeing, as well as any impact on wellbeing on the families that you worked with and your professional practise. An example of a question may be: *Thinking about your experience of using the Family Wellbeing Scale with families, was it easy to administer?*

4. Who will conduct the interviews?

Other researchers, will carry out the interviews, including possibly trainee educational psychologists, who have all been PVG checked by Disclosure Scotland and will be fully briefed and supervised by experienced psychologists.

5. Location of interviews

The location of the focus group / interviews will be discussed and agreed with you and may be held in-person in council offices, or by telephone or online. Due to restrictions caused by Covid-19, online focus group / interviews are the preferred option.

6. Timeframe for focus group / interviews

The timeframe for interviews is planned for January 2022 and February 2022. However, this time may be extended if necessary depending on progress with conducting the interviews.

7. Audio recordings

The researchers would like permission to record the focus group / interviews to ensure your views are accurately documented. Audio recordings of the focus group / interviews will be transcribed by an independent professional and any potentially identifiable information will be removed. The audio recordings will then be deleted after the transcription process is completed.

What information is being collected in the project?

Focus group / Interview data being collected will focus on your views of wellbeing, the relevance of the statements in the scale and how accurately and reliably you thought it measured wellbeing, as well as any impact on the families you are working with and your professional practise. Examples of the kind of questions include:

Thinking about your experience of using the Family Wellbeing Scale with families, was it easy to administer? How closely did you think the statements reflect the aspects of wellbeing as you understood them? Did the scale help you to identify particular areas of wellbeing that you wanted to improve in families?

No personal or identifiable data is being collected because the audio recordings of the focus groups / interviews will be transcribed by an independent professional and any potentially identifiable information will be removed. The audio recordings will then be deleted. The researchers will then be sent only the anonymised transcribed data (ie data that does not identify you personally).

Who will have access to the information?

Only the researchers will have access to anonymous, transcribed interview data. All data will be anonymised in any research outputs, by removing any potentially identifiable information. For example, no direct attributable quotes will be used in any publications, thereby ensuring that participants cannot be identified in that way.

Where will the information be stored and how long will it be kept for?

Any potentially identifiable information will be removed, such as the names of participants and families. For example, no attributable direct quotations will be used in publications to ensure family participants and professionals who participated in any focus groups or semi-structured interviews will remain unidentifiable. Names or references to localities where professional participants work will be removed and any other information that may identify the professional. Results and findings reported will be supported by reference to themes that have emerged from the data rather than specific quotes from any individuals.

The audio recordings will be deleted after the transcription process is completed and the transcripts stored on the University of Strathclyde's One Drive. Only the researchers will have access to the transcripts. The anonymised data will be retained for a minimum of ten years after publication or public release.

Please also read our Privacy Notice for Research Participants

If you have any questions or you would like further information about any aspect of the project please contact edward.mcgee@strath.ac.uk

Then what?

When the research on the scale is completed a summary report of the main findings and conclusions may be posted on the Family First / Family Wellbeing website, which participants can access. Other outputs from the research will be developed for use within the local authority and nationally. This will include presentations to educational establishments, partner agencies and organisations. In addition, information may be included in newsletters, websites and published in journals. All future outputs and publications will not include any personal information that could identify participants.

Contact details:

Researcher, Eddie McGee, School of Psychological Sciences and Health, University of Strathclyde, George Street, G1 1QE edward.mcgee@strath.ac.uk

Chief Investigator details:

Dr Clare Daly, clare.daly@strath.ac.uk School of Psychological Sciences and Health, University of Strathclyde, George Street, G1 1QE

The project has been approved by the University Ethics Committee.

Secretary to the University Ethics Committee
Research & Knowledge Exchange Services
University of Strathclyde
Graham Hills Building
50 George Street
Glasgow
G1 1QE
Telephone: 0141 548 3707Email: ethics@strath.ac.uk

Consent Form for professionals

Name of department: School of Psychological Sciences and Health

Title of the study: The development and validation of a scale to measure family wellbeing: The Family Wellbeing Scale

- I confirm that I have read and understood the Participant Information Sheet for the above project and the researcher has answered any queries to my satisfaction.
- I confirm that I have read and understood the Privacy Notice for Participants in Research Projects and understand how my personal information will be used and what will happen to it (i.e. how it will be stored and for how long).
- I understand that my participation is voluntary and that I am free to withdraw from the project at any time, up to the point of completion, without having to give a reason and without any consequences.
- I understand that I can request the withdrawal from the study of some personal information and that whenever possible researchers will comply with my request.
- I understand that anonymised data (i.e. data that does not identify me personally) cannot be withdrawn once they have been included in the study.
- I understand that any information recorded in the research will remain confidential and no information that identifies me will be made publicly available.
- I consent to data from the focus group / interview being collected.
- I consent to audio recordings of the interview being made.
- am interested in being interviewed about my experience of using the Family Wellbeing Scale
- I consent to being a participant in the project.

(PRINT NAME)	
Signature of Participant:	Date:

Appendix 6

The Family Wellbeing Scale: Participant information sheet for families

Name of department: School of Psychological Sciences and Health
Title of the study: The development and validation of a scale to measure family wellbeing: The Family Wellbeing Scale

Who is conducting the research?

The research is being carried out by Eddie McGee who is a doctoral student at the University of Strathclyde. You can contact me by email at edward.mcgee@strath.ac.uk if you have any questions or concerns.
My research supervisor at the University of Strathclyde is Dr Clare Daly who can be contacted via email at: clare.daly@strath.ac.uk.
You are invited to take part in a study about family wellbeing. The study is about testing the validity and reliability of the new measure: the Family Wellbeing Scale. Participants will complete a questionnaire about wellbeing. The findings will help to shape more effective support for families in the future.

Purpose of the research?

The purpose of the research is to build on research previously carried out by the Family First Service and has been designed to allow comparisons to previous findings. We will also look at themes within the research which may inform our future service provision.

Do I have to take part?

It is completely voluntary, if you don't want to take part, you do not have to give a reason and it will not affect your involvement with the service. If you do want to take part, but change your mind later, you can pull out of the study up until the point of data collection. This is when everything is anonymised meaning we would be unable to identify your information to withdraw it from the research.

What do I have to do?

1. Questionnaire - If you agree to take part by completing the questionnaire, you will be asked to sign the Consent Slip at the bottom of this page and tick the consent box for the questionnaire. You will be asked to complete the questionnaire twice. First, when the professional starts to work with your family and then again after 10-12 sessions even if they continue working with the family. It may be done before that if input is less than 10-12 sessions. In which case, the scale will be repeated at the final session with the family. An example of a statement that you will be asked is:

On a scale of 1-5 (*1 being Never and 5 being All of the time*) rate the question - *We like to have fun together.*

Then what?

2. Interview

After you have completed the questionnaire, twice, as explained above, you may be asked to participate in a supplementary interview about the questionnaire, again this is voluntary. The purpose of the follow up interview is to gather your views on how easy the questionnaire is to complete and highlight any issues that may have been identified. Your answers from completing the questionnaire will not be linked to what you say in the interview. The discussion is only about the types of statements in the questionnaire not your answers.

a. Arranging the interview

You can contact the researchers directly by their email addresses, if you wish to participate in the interviews. Alternatively, you can discuss it with the professional that is working with you from the Family First or Family Wellbeing Service, who can contact the researchers on your behalf. If you want to participate please tick the consent boxes for the audio recording data on the Consent Slip at the bottom of this page. Then return it by email with electronic signature to the researchers or just give it to the professional who will return it on your behalf.

b. Interviews

To find out your views and experience of completing the Family Wellbeing Scale and whether you think it effectively measured family wellbeing we will invite you to an interview. The interview will take place at a time that suits you, for example, online at 2pm, and will last approximately 45 minutes.

c. Types of questions

The questions will focus on your views of wellbeing, the relevance of the statements in the scale and how reliably you thought it measured wellbeing, as well as any impact on your family wellbeing. An example of a question may be: *How closely did you think the statements in the scale reflect the aspects of wellbeing in your family?*

d. Who will conduct the interviews?

Other researchers, will carry out the interviews, including trainee educational psychologists, who have all been PVG checked by Disclosure Scotland and will be fully briefed and supervised by experienced psychologists.

e. Location of interviews

The location of interviews will be discussed and agreed with you. Due to restrictions caused by Covid-19, online or telephone interviews are the preferred option.

f. Timeframe for interviews

The timeframe for interviews is planned for February 2022 and March 2022. However, this time may be extended if necessary depending on progress with conducting the interviews.

g. Audio recordings

The researchers would like permission to record the interviews to ensure your views are accurately documented. Audio recordings will be made by using a Council X,

encrypted device eg ipad, using only the audio record function. The audio recordings will be stored on this password protected device, which will be locked in a secure location in Council offices, before they are transcribed. Audio recordings of interviews will be transcribed by an independent professional and any potentially identifiable information will be removed. The audio recordings will then be deleted after the transcription process is completed.

h. Potential anxiety associated with completing the questionnaire or interviews

If you feel anxious while completing the questionnaire or during the interview, the interview will be paused and time given to decide if you want to continue. You may also seek further support from:

- Bridges Primary Care Mental Health team (Bridges PCMHT). The referral form can be accessed at Bridges to Wellbeing contact form - Council X
- Your GP
- NHS 24 on 111
- Breathing Space - A confidential phone line for anyone in Scotland over the age of 16, feeling low, anxious or depressed. Tel. 0800 83 85 87 or https://breathingspace.scot/

What information is being collected in the project?

Only anonymised answers to questionnaire data (ie data that does not identify you personally) are collected and shared with the researchers to help with their research. Interview data being collected will focus on your views of wellbeing, the relevance of the statements in the scale and how accurately and reliably you thought it measured wellbeing, as well as any impact on your family wellbeing. The researchers will then be sent only the anonymised transcribed data (ie data that does not identify you personally). Professionals from the Family First or the Family Wellbeing Service will not have access to data from any interviews.

Who will have access to the information?

Only the researchers will have access to anonymous, transcribed interview data. All data will be anonymised in any research outputs, by removing any potentially

identifiable information. For example, no direct attributable quotes will be used in any publications, thereby ensuring that participants cannot be identified in that way.

Where will the information be stored and how long will it be kept for?

Any potentially identifiable information will be removed, such as names of family members. The audio recordings will be deleted after the transcription process is completed and the transcripts stored on the University of Strathclyde's One Drive. The anonymised data will be kept retained for a minimum of ten years after publication or public release.

How do I withdraw from the research?

You will have ***up to three days*** to withdraw both your questionnaire or interview data from the research if you change your mind and do not wish it to be included in the research. To do this please contact the researchers by email (contact details are below). ***After three days***, your completely anonymous questionnaire data is sent to the researchers. The researchers have no details, which can identify you such as your name or address. The audio recording of your interview will be transcribed by an independent professional (a researcher within Council X) and any potentially identifiable information will be removed, such as your name or the name of the professional working with you. Your audio recording will then be deleted. The transcribed data will then be anonymised.

Please also read our Privacy Notice for Research Participants

If you have any questions or you would like further information about any aspect of the project please contact edward.mcgee@strath.ac.uk

Then what?

When the research on the scale is completed a summary report of the main findings and conclusions may be posted on the Family First website, which participants can access. Other outputs from the research will be developed for use within the local authority and nationally. This will include presentations to educational establishments, partner agencies and organisations. In addition, information may be included in

newsletters, websites and published in journals. All future outputs and publications will not include any personal information that could identify participants.

Contact details:

Researcher, Eddie McGee, School of Psychological Sciences and Health, University of Strathclyde, George Street, G1 1QE edward.mcgee@strath.ac.uk

Chief Investigator details:

Dr Clare Daly, clare.daly@strath.ac.uk School of Psychological Sciences and Health, University of Strathclyde, George Street, G1 1QE

The project has been approved by the University Ethics Committee.

Secretary to the University Ethics Committee
Research & Knowledge Exchange Services
University of Strathclyde
Graham Hills Building
50 George Street
Glasgow
G1 1QE
Telephone: 0141 548 3707
Email: ethics@strath.ac.uk

Consent Form for families

Name of department: School of Psychological Sciences and Health

Title of the study: The development and validation of a scale to measure family wellbeing: The Family Wellbeing Scale

- I confirm that I have read and understood the Participant Information Sheet for the above project and the researcher has answered any queries to my satisfaction.
- I confirm that I have read and understood the Privacy Notice for Participants in Research Projects and understand how my personal information will be used and what will happen to it (i.e. how it will be stored and for how long).
- I understand that my participation is voluntary and that I am free to withdraw from the project at any time, up to the point of completion, without having to give a reason and without any consequences.
- I understand that I can request the withdrawal from the study of some personal information and that whenever possible researchers will comply with my request.
- I understand that anonymised data (i.e. data that does not identify me personally) cannot be withdrawn once they have been included in the study.
- I understand that any information recorded in the research will remain confidential and no information that identifies me will be made publicly available.
- I consent to all data (questionnaire and audio recordings) being collected
- I consent to data from the questionnaire being collected
- I consent to audio recordings of the interview being made.
- I am interested in being interviewed about my experience of using the Family Wellbeing Scale.
- I consent to being a participant in the project.

(PRINT NAME)	
Signature of Participant:	Date:

Appendix 7

The Family Wellbeing Scale: Participant information sheet for young people

Name of department: School of Psychological Sciences and Health

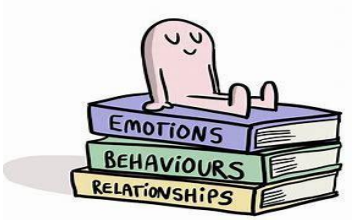
Title of the study: The development and validation of a scale to measure family wellbeing: The Family Wellbeing Scale

1. Invitation

We would like you to help us with our research study. Please read this information carefully and talk to your mum, dad or carer about the study. Ask them if there is anything that is not clear or if you want to know more. Take time to decide if you want to take part. It is up to you if you want to do this. If you don't then that's fine, you'll be helped by the person from the Family Wellbeing Service just the same.

2. Why are we doing this research?

We want to find out about wellbeing in families. Wellbeing is about feeling good. We want to test a new questionnaire to see if it can measure family wellbeing. This will help us to give better support for families in the future.



3. Why have I been asked to take part?

You have been invited to take part because you have a person working with you from the Family Wellbeing Service. Your mum, dad or carer told us that they'd be happy to help us by answering some questions and you can join in if you want.

4. Do I have to take part?

No! It is entirely up to you. If you do decide to take part:

- You will be asked to sign a form to say that you agree to take part (an assent form). Children over the age of 12 are usually considered to be mature enough to have a view on whether they want to take part, and need to be asked if they agree to participate. If you sign the form this shows you agree.
- You will be given this information sheet and a copy of your signed assent form to keep.

You are free to stop taking part at any time during the research without giving a reason. If you decide to stop, this will not affect the help you get from the Family wellbeing Service.

5. What happens to any information that I have given if I change my mind?

If you change your mind later, you can pull out of the study up until the point of data collection. This is when everything is anonymised meaning we would be unable to identify your information to withdraw it from the research. You will have up to **3 days** to withdraw your questionnaire or interview information. Please tell your parents/carers that you want to withdraw your data so that they can contact the researcher.

6. What do I have to do?

1. Questionnaire

You will be asked to answer questions about wellbeing in your family using a questionnaire.

You will be asked to complete the questionnaire twice. First, when the person from the Family Wellbeing Service starts to work with your family and then again after 10-12 sessions even if they continue working with your family. It may be done before that if they don't need 10-12 sessions.

An ***example*** of a statement that you will be asked is:

On a scale of 1-5 (1 being Never and 5 being All of the time) rate the question - We like to have fun together.

You will be asked to sign the Assent Form at the bottom of this page and tick the agree box for the questionnaire.

Then what?

2. Interview

After you have completed the questionnaire, you may be asked to do an interview about the questionnaire, again this is entirely up to you.

The purpose is to hear your views on the questionnaire.

The discussion is only about the types of statements in the questionnaire not the answers that you gave when you filled in the questionnaire.

Example *– Did you find the questionnaire easy to understand?*

You will be asked to sign the Assent Form at the bottom of this page and tick the agree box for the interview.

How is the interview done?

The interview will be arranged in February or March by your mum and dad or carer and done online. It will last about 45 minutes. We would like to record what you say.

7. Will anyone else know I'm doing this?

All information that is collected about you during the research will be kept strictly confidential. Information will be anonymous, which means that you will not be able to be identified from it. Not even the researchers will know who you are.

8. Where will my information be kept? For how long?

All information that is collected about you will be stored securely on a laptop that needs a password to open it. The laptop will be locked in an office.

Once the study is complete all anonymised information will be kept for 10 years.

9. Is there anything to be worried about if I take part?

No! There is nothing to worry about. But if you do feel worried, talk to your mum or dad or carer or person from the Family Wellbeing Service. Or you can call Childline free on 0800 1111 or online https://www.childline.org.uk/

10. What happens after the study?

We will use the information from families to improve the questionnaire we use with families and to teach others about family wellbeing. We will share what we learn with other researchers, in magazines and on websites, and we will write about it on Children 1st so that you and other children can read about it. We won't let anyone know who we spoke to and nothing we share will say who said it.

11. Contact for further information

Researcher, Eddie McGee, School of Psychological Sciences and Health, University of Strathclyde, George Street, G1 1QE edward.mcgee@strath.ac.uk

Chief Investigator details:

Dr Clare Daly, clare.daly@strath.ac.uk School of Psychological Sciences and Health, University of Strathclyde, George Street, G1 1QE

Please also read our Privacy Notice for Research Participants

Thank you for taking the time to read this – please ask any questions if you need to.

The project has been approved by the University Ethics Committee.

Secretary to the University Ethics Committee
Research & Knowledge Exchange Services
University of Strathclyde
Graham Hills Building
50 George Street
Glasgow
G1 1QE
Telephone: 0141 548 3707
Email: ethics@strath.ac.uk

Assent Form for young people

Name of department: School of Psychological Sciences and Health

Title of the study: The development and validation of a scale to measure family wellbeing: The Family Wellbeing Scale

- I confirm that I have read and understood the Participant Information Sheet for the above project and the researcher has answered any queries to my satisfaction.
- I confirm that I have read and understood the Privacy Notice for Participants in Research Projects and understand how my personal information will be used and what will happen to it (i.e. how it will be stored and for how long).
- I understand that my participation is voluntary and that I am free to withdraw from the project at any time, up to the point of completion, without having to give a reason and without any consequences.
- I understand that I can request the withdrawal from the study of some personal information and that whenever possible researchers will comply with my request.
- I understand that anonymised data (i.e. data that does not identify me personally) cannot be withdrawn once they have been included in the study.
- I understand that any information recorded in the research will remain confidential and no information that identifies me will be made publicly available.
- I agree to all data (questionnaire and audio recordings) being collected.
- I agree to data from the questionnaire being collected.
- I agree to audio recordings of the interview being made.
- I want to be interviewed.
- I agree to be a participant in the project.

(PRINT NAME)	
Signature of Participant:	Date:

Appendix 8

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20 questions to guide your evaluation of a TA paper
A resource editors and reviewers of TA papers, to facilitate quality in TA

The following list of questions appears as ***Table 1: A tool for evaluating thematic analysis (TA) manuscripts for publication: Twenty questions to guide assessment of TA research quality*** in: Braun, V. & Clarke, V. (2020) One size fits all? What counts as quality practice in (reflexive) thematic analysis?, *Qualitative Research in Psychology*, DOI: 10.1080/14780887.2020.1769238

These questions are designed to be used either independently, or alongside our methodological writing on TA, and especially the current paper, if further clarification is needed.

Adequate choice and explanation of methods and methodology

1. Do the authors explain why they are using thematic analysis (TA), even if only briefly?
2. Do the authors clearly specify and justify which *type* of TA they are using?
3. Is the use and justification of the specific type of TA consistent with the research questions or aims?
4. Is there a good 'fit' between the theoretical and conceptual underpinnings of the research and the specific type of TA (i.e. is there conceptual coherence)?
5. Is there a good 'fit' between the methods of data collection and the specific type of TA?
6. Is the specified type of TA consistently enacted throughout the paper?
7. Is there evidence of problematic assumptions about, and practices around, TA? These commonly include:
   - Treating TA as one, homogenous, entity, with one set of – widely agreed on – procedures.
   - Combining philosophically and procedurally incompatible approaches to TA without any acknowledgement or explanation.
   - Confusing summaries of data topics with thematic patterns of shared meaning, underpinned by a core concept.
   - Assuming grounded theory concepts and procedures (e.g. saturation, constant comparative analysis, line-by-line coding) apply to TA without any explanation or justification.
   - Assuming TA is essentialist or realist, or atheoretical.
   - Assuming TA is only a data reduction or descriptive approach and therefore must be supplemented with other methods and procedures to achieve other ends.
8. Are any supplementary procedures or methods justified, and necessary, or could the same results have been achieved simply by using TA more effectively?
9. Are the theoretical underpinnings of the use of TA clearly specified (e.g. ontological, epistemological assumptions, guiding theoretical framework(s)), even when using TA inductively (inductive TA does not equate to analysis in a theoretical vacuum)?
10. Do the researchers strive to 'own their perspectives' (even if only very briefly), their personal and social standpoint and positioning? (This is especially important when the researchers are engaged in social justice-oriented research and when representing the 'voices' of marginal and vulnerable groups, and groups to which the researcher does not belong.)
11. Are the analytic procedures used clearly outlined, and described in terms of what the authors actually did, rather than generic procedures?
12. Is there evidence of conceptual and procedural confusion? For example, reflexive TA (Braun & Clarke, 2006) is the claimed approach but different procedures are outlined such as the use of a codebook or coding frame, multiple independent coders and consensus coding, inter-rater reliability

measures, and/or themes are conceptualised as analytic inputs rather than outputs and therefore the analysis progresses from theme identification to coding (rather than coding to theme development).

13. Do the authors demonstrate full and coherent understanding of their claimed approach to TA?

A well-developed and justified analysis

14. Is it clear what and where the themes are in the report? Would the manuscript benefit from some kind of overview of the analysis: listing of themes, narrative overview, table of themes, thematic map?
15. Are reported themes topic summaries, rather than 'fully realised themes' – patterns of shared meaning underpinned by a central organising concept?
    - If so, are topic summaries appropriate to the purpose of the research?
        - If the authors are using reflexive TA, is this modification in the conceptualisation of themes explained and justified?
    - Have the data collection questions been used as themes?
    - Would the manuscript benefit from further analysis being undertaken, with the reporting of fully realised themes?
    - Or, if the authors are claiming to use reflexive TA, would the manuscript benefit from claiming to use a different type of TA (e.g. coding reliability or codebook)?
16. Is a non-thematic contextualising information presented as a theme? (e.g. the first theme is a topic summary providing contextualising information, but the rest of the themes reported are fully realised themes). If so, would the manuscript benefit from this being presented as non-thematic contextualising information?
17. In applied research, do the reported themes have the potential to give rise to actionable outcomes?
18. Are there conceptual clashes and confusion in the paper? (e.g. claiming a social constructionist approach while also expressing concern for positivist notions of coding reliability, or claiming a constructionist approach while treating participants' language as a transparent reflection of their experiences and behaviours)
19. Is there evidence of weak or unconvincing analysis such as:
    - Too many or two few themes?
    - Too many theme levels?
    - Confusion between codes and themes?
    - Mismatch between data extracts and analytic claims?
    - Too few or too many data extracts?
    - Overlap between themes?
20. Do authors make problematic statements about the lack of generalisability of their results, and or implicitly conceptualise generalisability as statistical probabilistic generalisability (see Smith, 2018)?

Reference

Smith, B. (2018). Generalizability in qualitative research: Misunderstandings, opportunities and recommendations for the sport and exercise sciences. *Qualitative Research in Sport, Exercise and Health, 10*(1), 137-149.