Investigating the prevalence and consequences of family structure transitions on children living in low-, middle-, and high-income countries

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Submitted in partial fulfilment of the requirements of the Degree of Doctor of Philosophy

Statement of Originality

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Abstract

Family structure transitions are changes in household composition caused by changes in the parents' cohabiting relationship status. These transitions are normative in many high-income countries and have been associated with several negative child outcomes, albeit inconsistently. The instability hypothesis theorises that transitions lead to negative outcomes through the pathway of stress. However, evidence for this hypothesis is mixed: transitions are not always stressful, and are not always associated with negative child outcomes. Further, almost all the research on the instability hypothesis focuses on high-income countries, despite the social context likely influencing the prevalence and consequences of transitions. Therefore, to examine these transitions through a more global lens, this thesis aims to: RQ1) identify the prevalence of transitions in LMICs, RQ2) understand the consequences of transitions for children's physical health and educational achievement in LMICs, and RQ3) test and extend the instability hypothesis. Two large-scale, longitudinal datasets (Young Lives and Growing Up in Ireland) were used, which sample children and their caregivers in Ethiopia, India, Peru, Vietnam, and Ireland. The prevalence of family structure transitions by age 12 was: 14.8% in Ethiopia, 5.6% in India, 22.0% in Peru, and 7.7% in Vietnam (RQ1). Family structure transitions were not associated with children's physical health or educational achievement in the four LMICs, but they were negatively associated with these outcomes in Ireland (RQ2). Several moderators of the instability hypothesis which reduced the stress associated with transitions were identified: household size, living in a multigenerational and extended kin household, and child-caregiver closeness and conflict (RQ3). These findings suggest that transitions are relatively common in some LMICs, which underscores the need to broaden the contexts in which family instability is studied. The findings also show that transitions can lead to stress and negative child outcomes, but that the social and family context matters.

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Chapter 1: Literature Review

1.1 Introduction

In this chapter, I discuss the literature pertaining to the research aims addressed in this thesis. The chapter begins by defining family structure transitions and outlining evidence on the prevalence and consequences of these transitions. The theoretical underpinnings of the research in this thesis will then be discussed – namely, the instability hypothesis (Fomby & Cherlin, 2007; Wu & Martinson, 1993) and the selection hypothesis (Wu & Martinson, 1993). An extension of the instability hypothesis will be considered. A description of the social contexts of the countries included in this research (Ethiopia, India, Peru, Vietnam, and Ireland) will be provided. Finally, the aims and hypotheses of my PhD research project will be presented.

1.2 Family Structure Transitions

Family structure transitions are changes in household composition caused by changes in the parents' cohabiting relationship status (Brown, 2006; Cavanagh & Fomby, 2019; Hadfield, Ungar, et al., 2018; Smith et al., 2017). While some of the literature includes non-parental transitions, such as sibling or grandparent transitions, when examining family instability (e.g., Evans et al., 2017; Mollborn et al., 2012; Perkins, 2017, 2019; Sanner et al., 2018; Sun & Li, 2014), this thesis — like most of the family structure transition literature — focuses exclusively on parental romantic relationship transitions. Family structure transitions can involve the child's parents or the parents' romantic partners (i.e., stepparents) leaving the household (e.g., moving from a two-parent family to a single-parent family following a divorce) or entering the household (e.g., moving from a single-parent family to a stepfamily following a remarriage). These transitions are not limited to marital partners; a family structure transition can also result from non-married, cohabiting partners moving into and out of the household.

1.2.1 The Prevalence of Family Structure Transitions

Family structure transitions have garnered increasing research attention over the past decade. Research focusing on identifying trends in the prevalence of these transitions has shown that, in some high-income countries (see Table 1.1. for country income status definitions), a

sizeable proportion of children experience changes in their family structure throughout childhood (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017; Hadfield, Ungar, et al., 2018). For example, 56% of children in the United States and 32% of children in the United Kingdom who are born to married parents will experience at least one change in their family structure by their 12th birthday (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017). Families living in other high-income countries, however, do not experience transitions at this rate: less than one in 10 children living in Italy, Spain, and Poland who are born to married parents will experience a family structure transition by age 12 (DeRose, Lyons-Amos, et al., 2017). Most of the research on family structure transitions is conducted in the United States (Hadfield, Amos, et al., 2018), where these transitions are unusually common (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017). Indeed, several reviews of the family instability literature focus exclusively on research conducted in the United States (e.g., Cavanagh & Fomby, 2019; Eickmeyer et al., 2020; Raley & Sweeney, 2020; Smock & Schwartz, 2020). Thus, there is a need to study these transitions in a broader range of geographical contexts.

The importance of studying family instability across contexts can be demonstrated by Cherlin's (2009) seminal work on the American family. This research draws upon various aspects of the social context to explain why Americans experience exceptionally high relationship turnover (i.e., a higher rate of partnering and re-partnering) in comparison to other high-income countries (Andersson & Philipov, 2002; Andersson et al., 2017; Cherlin, 2009; Dronkers, 2016; Musick & Michelmore, 2018). Cherlin points to the contention between the rise of individualism and the historical institution of marriage which leads to people striving for two opposing ideals: independence and companionship. This has resulted in people entering and exiting romantic relationships at a fast rate. Thus, these factors of the social context have created an environment which has resulted in high rates of family structure transitions (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017). Despite the American relational context being known to be unique, most of what we know about family structure transitions comes from this country (Hadfield, Amos, et al., 2018; Hadfield, Ungar, et al., 2018). The existing family structure transition research is therefore not representative of families living in other high-income countries, and is likely to be even less representative of families living in low- and middle-income countries (LMICs).

Although we know a lot about the prevalence of family structure transitions in the United States and in some other high-income countries, there is still an unfortunate lack of evidence

on the prevalence of these transitions for children living in LMICs, where approximately 90% of the world's children live (Blum & Boyden, 2018). Further, the familial context is evolving globally (Furstenberg, 2019). For example, cohabitation before, after, or as an alternative to marriage is becoming increasingly normative (DeRose, Lyons-Amos, et al., 2017; Holland, 2017; Odimegwu et al., 2020; Ortiz-Ospina & Roser, 2020). Couples who choose to marry are doing so later in life (Odimegwu et al., 2020; Ortiz-Ospina & Roser, 2020; Raymo et al., 2015; Stevenson & Wolfers, 2007), with some notable exceptions including India and Vietnam (Furstenberg, 2019). Trends in divorce rates are changing in many countries; across 30 OECD countries, divorce has increased in 18 countries and declined in 12 countries (Ortiz-Ospina & Roser, 2020). So, we know that the familial landscape is changing in many parts of the world, and these changes will likely have implications for family instability, yet we know very little about family instability for those living outside of high-income countries.

To address the lack of research on family structure transitions in LMICs, the first aim of this thesis is to identify the prevalence of family structure transitions in LMICs. The Young Lives data will be used, which samples children and their caregivers living in four LMICs: Ethiopia, India, Peru, and Vietnam. These prevalence estimates will be validated using data from the nationally representative Demographic and Health Surveys (DHS), which also samples children and their caregivers in these four countries. The Young Lives prevalence estimates will be put into context by comparing them with well-established prevalence estimates from 17 high- and upper-middle-income countries to provide an insight into how common family structure transitions are in a variety of countries. The prevalence of family structure transitions in Ireland will also be calculated using the Growing Up in Ireland (GUI) data, but these estimates cannot be compared with the Young Lives or comparison country estimates because they cover a different developmental period (ages 9 to 17/18 vs. birth/ages 1 to 12).

Table 1.1.

Definitions of High, Upper-Middle, Lower-Middle, and Low-Income Countries

Country income status	Definition
High-income	Gross national income per capita of $13,205 or more
Upper-middle income	Gross national income per capita between $4,256 and $13,205
Lower-middle income	Gross national income per capita between $1,086 and $4,255
Low-income	Gross national income per capita of $1,085 or less

Note. Definitions are provided by The World Bank (2022a) and reflect the 2023 fiscal year.

1.3 The Countries Included in this Thesis

I focus on five countries in this thesis: Ethiopia, India, Peru, Vietnam, and Ireland (see Table 1.2. for information on the demographic and socioeconomic characteristics of each country). The four countries included in the Young Lives study – Ethiopia, India, Peru, and Vietnam – represent a variety of social contexts in the four major regions of the developing world (Young Lives, 2017). Ireland represents a high-income country with a unique family context, which will be described below (Fahey, 2012). Together, these countries are particularly interesting to study, because it allows for an insight into how the social context – that is, "the sociocultural forces that shape people's day-to-day experiences" (Burke et al., 2009, p. 2) – influences family instability. Some of these forces include social attitudes and norms, individualism versus collectivism, laws, and religious laws and beliefs. In the sections that follow, I will describe how each of these aspects of the social context could influence family instability in the five countries studied in this thesis.

1.3.1 Social Attitudes and Norms

What society perceives as socially acceptable regarding family life is likely to influence the prevalence of family instability. In comparison to some high-income countries such as the United States, where divorce is normative and largely socially accepted (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017; Furstenberg, 2019; Statista, 2022), divorce is stigmatised and associated with shame or failure, particularly for women, in all four of the Young Lives countries (Alvarado & del Carmen Vilchez, 2015; Cultural Atlas Editors, 2016; Abebe, 2015; Van Der Gagg, 2020; Thadathil & Sriram, 2020). Further, in India, Peru, and Vietnam, more than half of people disapprove of women being single parents (62.9%, 50.0%, and 58.1%,

respectively, with Ethiopia nearing these levels at 45.9%) (World Values Survey, 2020; Crivello et al., 2019; Newton-Levinson et al., 2014). Collectively, this stigmatisation could mean that the transition from a two-parent family to a single-parent family is unlikely, or that experiencing these transitions is more stressful, particularly if it is a consequence of divorce and will result in a single-mother household.

Family structure transitions resulting from a divorce or separation are just one type of transition. Other types of family structure transitions can involve the entrance of a marital or cohabiting partner into the home. Could these types of transitions be more common and less stressful in the Young Lives countries, because they result in the traditional two-caregiver household? This is not likely in India where remarriages do not hold the same status as first marriages, particularly for remarried women who are considered "impure" compared to those in first marriages (Dommaraju, 2016; Holden, 2016; Mishra & Jayakar, 2019). This might explain why remarriage is more common in India for men rather than women (Dommaraju, 2016). Similarly, women in Ethiopia face strong social disapproval if they remarry, whereas divorced men can remarry without social repercussions (Tafere et al., 2020). Thus, whilst two-parent families are the norm in many countries around the world, including India and Ethiopia (Wilcox et al., 2019), family structure transitions which result in two-caregiver families may still be subject to unfavourable social attitudes, which could decrease the prevalence of these types of transitions.

In Ireland, family values are conservative (Fahey, 2012) which was reflected in concerns that legalising divorce would give "couples too easy a way out" (Burley & Regan, 2002, p. 211). A decade after divorce was legalised, 21.2% of Irish people still believed that divorce was "never justifiable" (Burley & Regan, 2002; Moore, 2011). Ireland's conservative family values and attitudes towards divorce may explain why this country has one of the lowest divorce rates in the world (Eurostat, 2019; Fahey & Field, 2008; Fahey, 2014). On the other hand, there is increasing acceptance for non-traditional family structures such as single-mother families in Ireland (Fahey, 2014), and the number of single-parent and cohabiting families is rising (Fahey & Field, 2008; Fahey, 2014). This has important implications for family instability, as living in these family structures increases the likelihood of experiencing a family structure transition (Brown et al., 2016; Cavanagh & Huston, 2006; Gaydosh & Harris, 2018; Gold et al., 2020; Raley & Sweeney, 2020; Ryan & Claessens, 2013).

1.3.2 Individualism versus Collectivism

Individualist cultures are characterised by people behaving according to their self-interests (Fatehi et al., 2020). In contrast, collectivist cultures are characterised by people behaving according to the needs of the group, such as the family or the wider community (Fatehi et al., 2020). When considering the impact of cultural values on the prevalence of family structure transitions, we might expect that transitions are more common in countries with individualistic rather than collectivistic cultures, as Cherlin suggested in his work on the American family (Cherlin, 2009). Indeed, there is research which suggests that divorce is more common and viewed more favourably in individualistic cultures, as people put their own interests first, as opposed to their parents' interests or religious practices, when forming and dissolving romantic relationships (Toth & Kemmelmeier, 2009).

Ethiopia, Peru, and Vietnam are collectivist cultures (World Values Survey, 2020). So, if individualistic cultures are associated with a higher prevalence of family structure transitions, it is likely that the prevalence of transitions in these three countries will be lower than in countries characterised by high individualism such as the United States, which has one of the most individualistic cultures in the world (Hofstede Insights, 2022a). India scores somewhere in between individualist and collectivist (Hofstede Insights, 2021a), and so this aspect of the social context may be less influential on the prevalence of family structure transitions than in other countries. Ireland scores highly on individualism (Hofstede Insights, 2021b), and so we might expect the prevalence of family structure transitions in this country to be more similar to the United States – where transitions are common – than in the Young Lives countries.

1.3.3 Family Laws

The aforementioned aspects of the social context focus on individual and societal perceptions of what is acceptable regarding family life. In addition to what is considered to be acceptable, legislation dictates what is possible when it comes to family life and, in particular, family instability. For example, divorce laws dictate how long a couple must be separated for before they can obtain a divorce, and therefore how easy it is to get divorced. In Ethiopia, mutual divorce (i.e., when both spouses want a divorce) can be obtained after six months of marriage (Brookman, n.d.a). This period is slightly longer in India where one year of separation is required for Hindus (Vakil Search, 2019) – divorce laws differ depending on the religion of

the couple, but Hinduism is the predominant religion in India (Kramer, 2021). In Peru, the separation period is even longer; up to four years of separation can be required if a couple has a child (Brookman, n.d.b). After extensive searching, I could not find any information about the period of separation required prior to divorce in Vietnam. Divorce in Ireland was legalised in 1997 (Family Law (Divorce) Act, 1996) – decades later than many other European countries such as Belgium, France, Italy, and Norway (González & Viitanen, 2009), and only then by a marginal majority (50.28%) (Fahey, 2014). In comparison to other European countries, the criteria required to obtain a divorce was unusually stringent when the legalisation was first introduced (Burley & Regan, 2002); four years of separation were required before a divorce could be granted until as recently as December 2019 when this period was reduced to two years (Citizens Information, 2021), which is still relatively restrictive.

The introduction of unilateral divorce (i.e., when one spouse ends a marriage without the consent of the other) has also been associated with family instability. In the United States, the introduction of unilateral divorce was associated with small, short-term increases in divorce rates (Drewianka, 2008). Similar patterns were also found in Mexico (Aguirre, 2019) and in multiple European countries (González and Viitanen, 2009). There is a discussion, however, about the direction of the relationship between the law and behaviour change. Some research suggests that the law often reflects changes in attitudes and behaviour, rather than the reverse (Hiller & Rescoules, 2013). That is, attitudes shift, and then the law adapts accordingly, and so perhaps laws are less integral in influencing family instability because they are often a consequence rather than a catalyst of change. This was evidenced in the Irish context where family instability was rising many years before divorce legislation was introduced (Fahey, 2012), and so there was only a marginal rise in divorce rates after divorce was legalised (Burley & Regan, 2002; Fahey, 2012).

As well as stipulating the process of divorce, laws also dictate people's ability to re-marry. In some countries such as Peru, remarriage laws can be restrictive, particularly for certain groups of people; widowed and divorced women in Peru must wait 300 days after the death of their husband or the divorce before they can re-marry (OECD, 2019). Individuals can remarry six months after obtaining a divorce in Ethiopia (Wikiprocedure, 2021), and after 90 days for Hindus in India (Hindu Marriage Act, 1995). Again, I could not find any information about this in Vietnam, despite extensive searching. In Ireland, there is no specified length of

time required between divorce and remarriage – individuals can remarry as long as the divorce from their previous marriage is finalised (Family Lawyer Dublin, 2022). In countries with restrictive remarriage laws, the number of family structure transitions that children experience may be lower, because the law is less permissive of couples entering, exiting, and re-entering romantic relationships at a fast rate. That being said, cohabitation is becoming increasingly normative in many parts of the world (Furstenberg, 2019; Ortiz-Ospina & Roser, 2020), and so remarriage laws may have relatively little impact on family instability because people may be more likely to enter new cohabiting relationships rather than marital relationships.

1.3.4 Religion

Levels of religiosity vary greatly between countries. In the United Kingdom, for example, 30% of people answered "yes" to whether or not they "feel religious", compared with 99% of people in Ethiopia, 76% in India, 82% in Peru, and 34% in Vietnam, and 90% in Ireland (Central Statistics Office, 2016a; The Telegraph, 2018). The impact of religion on romantic relationships has received a lot of research attention. Using data from 11 countries, Wilcox and colleagues (2019) demonstrated that couples who are highly religious (i.e., those who attend religious services regularly, and whose partner is just as or more religious as they are) experience higher relationship quality and greater sexual satisfaction than couples who are less religious (i.e., those who rarely attend religious services, and whose partner is less religious than they are) or secular. Drawing on data from 84 countries, Wang and Schofer (2018) showed that countries with higher levels of religiosity (i.e., countries with a higher proportion of individuals who identify as Catholic or Muslim) experience lower divorce rates. One possibility, therefore, is that rates of family structure transitions may be relatively low in the Young Lives countries with high levels of religiosity (i.e., Ethiopia, India, and Peru), given that couples in these contexts may experience higher-quality relationships with a reduced likelihood of divorce.

As well as religious beliefs, religious laws also have implications for relationship formation and dissolution. In Catholicism (the predominant religion in Peru and Ireland) divorce is not recognised, and a marriage can only end following the death of one partner (BBC Bitesize, 2022). An annulment can be granted, but they are typically complex and costly procedures (The Guardian, 2015). Once separated, the couple are expected to live celibate lives, as sexual relationships are seen as being exclusive to the marital context (BBC Bitesize, 2022;

Catholics Come Home, 2022). Hinduism (the most popular religion in India) holds similar views to Catholicism on sexual relationships outside of marriage, meaning that cohabitation is largely frowned upon (Emeng, 2021). Hinduism views marriage as an expression of faith rather than a civil contract, and so religious dissolution is therefore not possible (The Guardian, 2000). However, it is possible to obtain a divorce, but this is generally not socially acceptable (Hindu Marriage Act, 1956; Legal Service India, 2022). Orthodox Christianity (the largest religion in Ethiopia) is strongly opposed to divorce, with 70% of Ethiopian Orthodox Christians believing that divorce is "morally wrong" (Diamant, 2017). The Ethiopian Orthodox Church does not permit its members to remarry following a separation unless their partner is deceased (Schembri, 2015), which limits people's ability to form relationships following the end of a marriage. In contrast to the conservative religious laws in Catholicism, Hinduism, and Orthodox Christianity, divorce is accepted in Buddhism (the predominant religion in Vietnam) as a way to end the suffering of an unhappy couple (Buddhism Info, 2022). Remarriage is also seen as an acceptable avenue for people to rediscover happiness (Woodham Academy, n.d.). Because there are fewer religious barriers to divorce and remarriage in this context, family instability may be more prevalent in Vietnam compared to the other four contexts where religious laws are more restrictive.

Taken together, individual elements of the social context likely act in concert rather than in isolation to influence family instability (Cherlin, 2009). To develop a deeper understanding of how the social context influences the prevalence and consequences of family structure transitions, it is critical to study these transitions in a broader range of social and cultural contexts to identify if and how the findings differ across countries: this thesis endeavours to address this gap.

Table 1.2.

Demographic and Socioeconomic Characteristics of the Countries of Focus

	Ethiopia	India	Peru	Vietnam	Ireland
Population	117,000,000	1,390,000,000	33,000,000	98,000,000	5,000,000
Income status	Low	Lower-middle	Upper-middle	Lower-middle	High
% of couples who are married	63	74	24	72	37
% of children born to unmarried parents	11	1	76	2	37

Note. Population and income status data is from The World Bank and represents the year 2021 (The World Bank, 2021). Percentage of 18- to 49-year-olds married and percentage of children born to unmarried parents in Ethiopia, India, Peru, and Vietnam are from the Demographic and Health Survey (DHS) data: Ethiopia 2011, India 2015-16, Peru 2012, and Vietnam 2005. Percentage of couples who are married in Ireland is from the Central Statistics Office (CSO, 2016b). Percentage of children born to unmarried parents in Ireland is from Eurostat (Eurostat, 2016).

1.4 The Consequences of Family Structure Transitions

Along with identifying trends in the prevalence of family structure transitions, another strand of family instability research focuses on understanding the consequences of these transitions for children's development. Some research suggests that family structure transitions – whether they involve an entrance or exit from the household – are a negative and stressful experience which disadvantage those who experience them (Cavanagh & Fomby, 2019). More specifically, these transitions have been associated with worsened physical health, wellbeing, educational achievement, and externalizing and internalizing symptoms for children (Bzosteck & Beck, 2011; Cavanagh & Fomby, 2019; Davies et al., 2019; Fomby & Cherlin, 2007; Fomby & Bosick, 2013; Heard, 2007; Osborne & McLanahan, 2007; Pasqualini et al., 2018; Perkins, 2019). The negative consequences of family structure transitions can persist throughout the life course, as transitions are associated with a decreased likelihood of college enrolment and completion, and an increased likelihood of having a pre-marital birth (Fomby, 2013; Fomby & Bosick, 2013; Hampden-Thompson & Galindo, 2015; Wu & Martinson, 1993). There is also evidence to suggest that the effects of family structure transitions are cumulative. That is, children who experience multiple family

structure transitions do worse than children who experience one transition (Bachman et al., 2011; Cavanagh & Huston, 2008; Fomby & Cherlin, 2007; Lee & McLanahan, 2015; Magnuson & Berger, 2009).

Within this literature, there is evidence which suggests that the effects of family structure transitions are heterogenous, and often not present (Cavanagh & Fomby, 2019; Coleman & Glenn, 2010; Hadfield, Amos, et al., 2018). Some studies from the United Kingdom and the United States, for example, have found racial and ethnic differences in the effects of family structure transitions on children (Lee & McLanahan, 2015). Black and Latino/a children who experience family instability experience little-to-no differences in multiple outcomes (e.g., academic performance, socioemotional behaviour, early sexual initiation, and likelihood of being arrested or incarcerated in adulthood) compared with White children (Bosick & Fomby, 2018; Fomby & Cherlin, 2007; Fomby et al., 2010; Wu & Thomson, 2001). Other studies have found socioeconomic differences; the effects of family instability on children's problem behaviour and income mobility are greater for children who live in middle- or upper-income families (Bloome, 2017; Ryan et al., 2015). Conversely, children living in more disadvantaged contexts are more likely to display negative/aggressive behaviour towards their peers following family instability than their counterparts (Cavanagh & Huston, 2006). Therefore, although some children experience worsened developmental outcomes following a family structure transition, others do not. This thesis aims to shed light on the differential effects of these transitions.

1.4.1 The Consequences of Family Structure Transitions Across Contexts

The vast majority of research on the effects of family structure transitions on children's outcomes focuses on high-income countries (Hadfield, Amos, et al., 2018); we know very little about family structure transitions for those living in LMICs. Some children living in LMICs experience a multitude of social, economic, and environmental challenges (e.g., poverty, child labour, malnutrition, access to clean water, armed conflict) which threaten their development (Bell et al., 2013; Blum & Boyden, 2018; Vostanis, 2017) – family structure transitions may be an additional challenge impeding the development of these children. Alternatively, in line with the socioeconomic disadvantage hypothesis, family instability may be less impactful for children living in these contexts because they face a myriad of other significant stressors which outweigh the potential impacts of family instability (see Cavanagh & Fomby, 2019). Indeed, this hypothesis is supported by research

from the United States which shows that more privileged children (i.e., White, from a middle- or upper-income household) fare worse as a result of experiencing family instability than their less privileged counterparts (Bloome, 2017; Fomby et al., 2010; Ryan et al., 2015; Wu & Thomson, 2001). Thus, the impacts of family structure transitions might be quite different for children living in LMICs compared with children living in high-income contexts.

To understand the impacts of family structure transitions in a wider variety of geographical and cultural contexts, the second aim of this thesis is to identify the impact of family structure transitions on children's physical health and educational achievement in LMICs. The Young Lives data will be used, which samples children and their caregivers living in Ethiopia, India, Peru, and Vietnam. To provide a high-income country comparison from a country that is underrepresented in the family instability literature, I will also identify the impact of family structure transitions on children's physical health and educational achievement using the GUI data.

1.4.2 The Consequences of Family Structure Transitions in LMICs

The literature that exists on the consequences of family structure and transitions for children living in LMICs predominately focuses on comparing children living in married versus non-married family structures, with the exception of two papers which have examined the impact of changes in family structure on child mortality, school entry, and wellbeing (Gaydosh, 2017; Hu, 2020). This body of research suggests that living in non-married family structures (i.e., single-parent, divorced, or cohabiting families) can increase children's risk of mortality, anaemia, stunted growth, being underweight, and living in poverty, and decrease children's likelihood of school enrolment (Bhuiya & Chowdry, 1997; Clark & Hamplova, 2013; Cuesta et al., 2017; DeRose, Salazar-Arango, et al., 2017; Ntoimo & Odimegwu, 2014; Schmeer, 2013; Smith-Greenaway, 2020; Thiombiano et al., 2013). Comparing the outcomes of children living in two-married-parent families with children living in non-married family structures is non-optimal for several reasons. First, these studies focus on examining between-person rather than within-person differences by comparing the outcomes of children living in different family structures at one point in time, rather than comparing children to themselves before and after experiencing a family structure transition. The former approach is sufficient if we assume that children remain in the same family structure throughout childhood. However, we know that many children experience changes in their family

structure throughout childhood (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017; Smith et al., 2017), making the latter approach more appropriate and reflective of children's experiences. Second, this approach employs a deficit-comparison perspective by using two-married-parent families as a reference group against "non-traditional" family structures. Third, comparing children living in two-married-parent families with children living in other family structures neglects the possibility that children who live with two-married-parents may not remain in this family structure throughout their childhood, or that those living in single-parent, cohabiting, or stepfamily structures could transition into a two-married-parent family. That is, this approach does not account for the fact that families experience changes in family structure over time. Finally, this comparative approach does not address the instability hypothesis, which theorises that changes in family structure are more important than family structure itself (Fomby & Cherlin, 2007; Wu & Martinson, 1993).

1.5 The Selection Hypothesis

The selection hypothesis theorises that parents possess characteristics which make them more likely to experience multiple family structure transitions, and their children more likely to experience negative developmental outcomes (Figure 1.1.) (Wu & Martinson, 1993). This hypothesis was proposed in Wu & Martinson's (1993) seminal study, which was the first to examine how changes in family structure affect children's development. Prior to this, research focused on comparing the outcomes of children living in different family structures at one point in time. That is, comparing the outcomes of children living in two-parent families to children living in "non-traditional" family structures (e.g., single-parent families and stepfamilies), rather than examining the impact of changes in family structure – indeed, this is still a very common approach. Using data on families living in the United States, they tested three hypotheses to explain the effects of family structure transitions on children's risk of having a pre-marital birth: 1) childhood socialisation (i.e., children born to single mothers are socialised differently to children born in two-parent families), 2) social control (i.e., single parents find it more challenging to supervise their children than two-parent families), and 3) instability and change (i.e., changes in family structure are associated with major family disruption and stress). Their findings provided support for the instability and change hypothesis; being born to and living in a single mother household did not increase children's risk of having a pre-marital birth, but experiencing changes in family structure did – the

effects were particularly strong for White and Hispanic women. Thus, family structure transitions appeared to matter more than family structure alone.

Building on the work of Wu & Martinson (1993), Wu (1996) tested whether the effects of family structure transitions on children's risk of having a pre-marital birth could be explained by selection effects using data on children and families living in the United States. That is, could children's risk of having a pre-marital birth be explained by differences in income, rather than experiences of family instability? The findings replicated those of Wu & Martinson (1993); family structure transitions increased children's risk of having a pre-marital birth even when controlling for income, thus providing support for the impact of family structure transitions on children's outcomes. Wu & Thomson (2001) later investigated the impact of family structure transitions on children's age at first sexual intercourse in the United States. They found that being born to non-married parents, living in a single-mother household, and living in an absent-biological-father household were not associated with early sexual initiation for either Black or White women, but family structure transitions were associated with early sexual initiation for White women. This provided further support for the impact of family structure transitions – rather than family structure – on children's outcomes. Taken together, this early evidence suggests that family structure transitions impact children over and above selection effects.

Figure 1.1.

The Selection Hypothesis
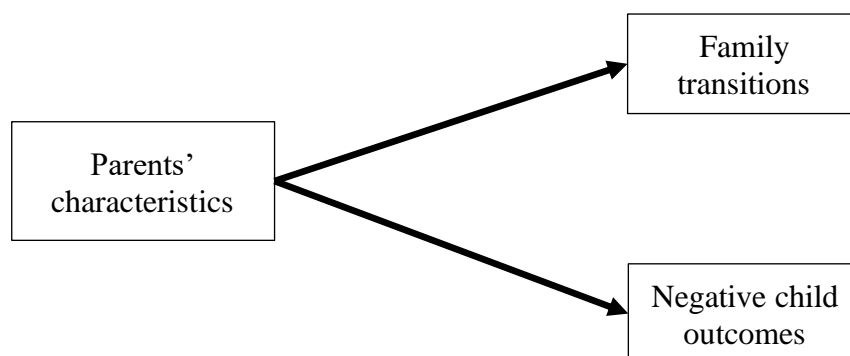
1.6 The Instability Hypothesis

The instability hypothesis, first introduced in Wu & Martinson's (1993) paper as the "instability and change" hypothesis, theorises that family structure transitions are stressful, and this stress, in turn, leads to negative outcomes for children (Figure 1.2.) (Fomby &

Cherlin, 2007; Wu & Martinson, 1993). The fundamental principle of the instability hypothesis is that changes in family structure are more consequential for children than family structure itself; it is the (sometimes repeated) disruption of the family system which leads to stress and negative child outcomes. Therefore, all transitions – irrespective of whether they involve a parent or caregiver moving in or out of the household – are stressful, because they require an adjustment to a new family system, which is a stressful and challenging experience.

Fomby & Cherlin's (2007) pivotal study was the first to formalise the instability hypothesis and the selection hypothesis and directly test them against one another. Using a large, nationally representative sample of American children and their parents, the authors aimed to test whether family structure transitions negatively impacted children's cognitive achievement, externalising behaviour problems, and (for 10- to 14-year-old children) delinquent behaviour. Two models were run: the first examined the association between family structure transitions and children's outcomes, and the second examined the same association whilst controlling for several characteristics of the mother (i.e., number of family structure transitions the mother experienced in childhood and adolescence, age at first sexual intercourse, age at first birth, age at the birth of the study child, drug and alcohol use, delinquent behaviour, self-esteem, and cognitive achievement), thus controlling for the selection hypothesis. Their aim was to determine whether the inclusion of the mothers' characteristics would reduce (either partially or to non-significance) the association between family structure transitions and children's outcomes. The findings provided evidence for both the instability hypothesis and the selection hypothesis for White children; mothers' characteristics reduced the strength of the association between family structure transitions and children's cognitive achievement, externalising problem behaviour, and delinquent behaviour. The association between family instability and children's outcomes was not statistically significant for Black children. Although the effect sizes for the association between family structure transitions and children's cognitive achievement, externalising problem behaviour, and delinquent behaviour were reduced, they remained statistically significant, suggesting that family structure transitions impact children above and beyond mothers' characteristics (i.e., selection effects). Fomby (2013) later replicated these findings when looking at the association between family structure transitions and children's college enrolment by age 24; even when controlling for selection variables, family structure transitions were still associated with a decreased likelihood of college enrolment.

Figure 1.2.

The Instability Hypothesis: A Stress Mediation Model
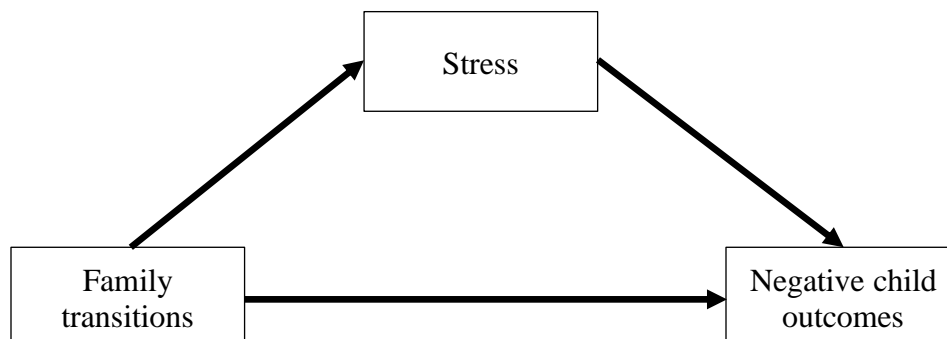
1.6.1 Conceptualising "Stress"

Wu & Martinson (1993) noted that "various stresses may accompany major family disruption" (Wu & Martinson, 1993, p. 212), yet "stress" is not explicitly defined or conceptualised in the formative works of Wu & Martinson (1993) or Fomby & Cherlin (2007). Therefore, the existing instability hypothesis literature has conceptualised and measured stress in a variety of ways, which include: parenting (e.g., changes to parental roles and routines), maternal functioning (e.g., depression), child functioning (e.g., social support), family functioning (e.g., mother-child relationship quality), mobility (e.g., moving home or school), and financial stress (e.g., changes to the household's financial situation) (Hadfield, Amos, et al., 2018). The analyses in this thesis will use two stressors: financial stress and parenting stress.

1.6.1.1 Financial Stress

Financial stress is the most common conceptualisation of stress in the instability hypothesis literature (Hadfield, Amos, et al., 2018), perhaps because many of the studies testing the instability hypothesis use secondary datasets which often include strong measures of financial stress (e.g., household income, socioeconomic status). There are several avenues through which family structure transitions could lead to financial stress. First, if a caregiver leaves the household because of a divorce, this transition will likely be financially stressful due to the cost of divorce (e.g., court and solicitor fees, counselling or mediation) and a reduction in household income (Kapelle & Baxter, 2020; Raley & Sweeney, 2020). If a cohabiting partner

leaves the household, household income is still reduced, assuming that both parties contribute financially (Fisher & Low, 2015). Thus, both marital and cohabiting partners leaving the home can be associated with financial stress. Family structure transitions which involve a caregiver entering the household can also be financially stressful; those who remarry tend to re-partner with people who earn less (Eeden-Moorefield & Pasley, 2013; Schnor et al., 2017), and so a partner entering the household could be a financial strain if existing resources need to be spread across more people.

Financial stress has been measured in a myriad of ways in the existing literature, including: household income, financial problems, income-to-needs ratio, material disadvantage, poverty, food insufficiency, and socioeconomic status (which encompasses household income, parents' occupation, and parents' education) (Hadfield, Amos, et al., 2018). In this thesis, household income and a multidimensional measure of socioeconomic status will be used to measure financial stress. Like the instability hypothesis more generally, support for household income as a mediator in the family structure transition – child outcome relationship is mixed. For example, household income mediated the relationship between family structure transitions and children's likelihood of school completion, college enrolment and completion, maths scores, and number of visits to the doctor (Brockmann, 2013; Fomby, 2013; Hampden-Thompson & Galindo, 2015; Sun & Li, 2011), but it did not mediate the relationship between family structure transitions and an increased likelihood of obesity, asthma, worse general physical health, children's behaviour problems, or academic achievement (Bzostek & Beck, 2011; Ryan & Claessens, 2013; Wagmiller et al., 2010). Multidimensional measures of financial stress appear to mediate the relationship between family instability and children's outcomes more consistently. The relationship between family structure transitions and children's educational attainment, verbal and non-verbal skills, depressive symptoms, psychological distress, physical illness, BMI, and multiple partnership dissolutions in adulthood was mediated by a multidimensional measure of financial stress (Lacey et al., 2013, 2014; Sommers, 2020; Stannard et al., 2022; Sun & Li, 2014; Wickrama et al., 2013). However, some studies which have tested multiple stress variables have found that other stressors such as family cohesion were stronger mediators of the family structure transition – child outcome relationship than a multidimensional measure of socioeconomic status (e.g., Rattay et al., 2018). Additionally, Hu (2020) found that parent-child relationship quality and parental conflict mediated the family instability – child wellbeing association, but economic resources did not.

1.6.1.1.1 Income versus Multidimensional Measures of Financial Stress

There are pros and cons of using household income and multidimensional measures of financial stress as mediators in the family structure transition – child outcome relationship. It may be easier to detect a change in household income rather than a change in a multidimensional measure of financial stress. For example, if a caregiver enters or exits the household, an increase or decrease in household income may be more likely than a change in access to amenities (e.g., cooking facilities, hot water), housing tenure (e.g., owns/mortgage, private renting, social housing), or children's participation in extra-curricular activities – some of the items which are included in the multidimensional measures of financial stress used in the existing literature. However, income may not tell us a lot about how financially stressed households are, because parents tend to prioritise the allocation of resources towards their children, and so although household income might decrease, children may be relatively unaffected (Leturcq & Panico, 2019). Further, families may receive benefits to compensate for the change in income (Fusco et al., 2011), and so multidimensional measures of financial stress may provide a more comprehensive representation of socioeconomic status, because households may have a low income without experiencing deprivation due to the assistance they receive (Letucrq & Panico, 2019). This may explain why evidence testing the instability hypothesis using household income as a stressor is inconsistent; if parents attempt to protect their children from the financial implications of family instability, and if they receive assistance to lessen the impacts, household income may be relatively unaffected by family structure change.

1.6.1.2 Parenting Stress

Parenting stress is another common conceptualisation of stress in the existing literature (Hadfield, Amos, et al., 2018). Family structure transitions – both the entrance and exit of parents and caregivers – have the potential to impact parenting stress (Beck et al., 2010). The exit of a caregiver from the household could increase parenting stress because the parent who remains in the household with the child may have to take on more childcare responsibilities (assuming that one parent gets primary custody of the child) or work, and they may have less time and energy to care for their child compared to pre-transition (Beck et al, 2010; Bzostek

& Beck, 2011). The entrance of a caregiver could also increase parenting stress, because the formerly single parent must adapt to sharing the caregiving responsibilities with another parent, which might result in conflict due to differing parenting styles or expectations of the children (Coleman et al., 2000). A parent moving into the household can also lead to children misbehaving because they feel as though they have to compete for their parent's attention (Crosbie-Burnett & Ahrons, 1985), thus making the parenting role more stressful (Thomson et al., 2001).

Parenting stress has been measured in a variety of ways in the existing literature, including: father involvement, parenting routines, parenting style, parenting quality, parental aspirations, and parental rejection (Hadfield, Amos, et al., 2018). In this thesis, parents' negative/stressful perceptions of their parenting role will be used as a measure of parenting stress. As with the evidence for financial stress, evidence for parenting stress as a mediator is mixed. Some studies have found that parenting stress mediates the association between family instability and children's behavioural problems, internalising behaviour, cognitive development, school engagement, grade point average, physical illnesses, wellbeing, and depressive symptoms (Coley et al., 2015; Havermans et al., 2014; Heard, 2007; Hu, 2020; Sun & Li, 2014; Wickrama et al., 2013). Other studies have found that parenting stress was a statistically significant mediator for some outcomes but not others. For example, Coley and colleagues (2015) found that parenting mediated the relationship between family instability and total behavioural problems and internalising problems, but not for externalising problems or physical and mental health. Several studies have failed to find an indirect association between family structure transitions, parenting stress, and a range of children's outcomes including cognitive achievement, literacy, internalising and externalising behaviour, physical health, BMI, suicidal thoughts, and early sexual initiation (Bachman et al., 2009; Barnett et al., 2020; Bzostek & Beck, 2011; Fagan, 2013; Sommers, 2020; Sweeney, 2007; Zito & De Coster, 2016).

In sum, evidence for stress mediating the association between family structure transitions and children's outcomes is mixed, irrespective of the way that stress is conceptualised. I opted to use financial and parenting measures of stress because they are the most frequently used in the instability hypothesis literature (Hadfield, Amos, et al., 2018), allowing me to compare my findings using data from five low-, middle-, and high-income countries with the existing

literature, which predominantly focuses on high-income countries. These variables are also the strongest stress variables available in the two secondary datasets used in this thesis.

1.6.2 A Systematic Review of the Instability Hypothesis

Since its inception, several studies have used the instability hypothesis as a theoretical framework for understanding the effects of family structure transitions on children's outcomes. To synthesise the existing evidence base and to understand the circumstances under which this hypothesis is supported, Hadfield and colleagues (2018) conducted a systematic review of the instability hypothesis. The review included peer-reviewed papers dated from 2007 – the year of Fomby & Cherlin's landmark paper – to 2017. To be included in the systematic review, the papers had to: be published in English; have a minimum sample size of 25 across at least two rounds of data; include a measure of family structure transitions before age 18; and be a quantitative or mixed-methods study, because the authors were interested in evaluating the evidence for a mediation effect (Hadfield, Amos, et al., 2018). Studies that examined the impact of family structure transitions on children's outcomes without including stress as a mediator were not included in the systematic review.

The authors focused on studies which used the stress variables described in papers by Amato (2000) and Coleman et al., (2000) – these papers summarise the evidence on the impact of divorce and remarriage on children's outcomes. Therefore, the stress variables of interest were: financial stress (e.g., changes in household income), parent and child functioning (e.g., social support, psychological stress), family and parenting (e.g., changes in roles and routines), and mobility (e.g., moving school or house). Additionally, the authors included parents' depression as a stress variable because stressful life events can lead to depression (Hadfield, Amos, et al., 2018). Measures of family instability had to exclusively involve changes to the parents' romantic relationships (i.e., marriage, divorce, remarriage, or moving in and out of dating or cohabiting relationships) as opposed to siblings, grandparents, or other family members moving in and out of the household. After discarding the papers which failed to meet the inclusion criteria described above, the final sample for the systematic review was 39 studies. There were more analyses than studies, because several studies tested the instability hypothesis using multiple stressors and child outcomes.

The central conclusion of the systematic review is that the evidence for the instability hypothesis is mixed; family structure transitions are often not associated with stress or with negative outcomes for children. More specifically, the family structure transition – stress relationship was statistically significant in 28 out of 84 analyses, and the stress – child outcomes relationship was statistically significant in 147 out of 308 analyses (Hadfield, Amos, et al., 2018). Because family structure transitions are not uniformly stressful, this suggests that there are specific circumstances under which transitions lead to stress. This thesis aims to unpack the instability hypothesis to shed light on some of those circumstances.

An important insight gleaned from Hadfield, Amos, et al.,'s (2018) review is that most of the instability hypothesis research is conducted in the United States; few papers included in the review provided evidence for this hypothesis in other high-income countries, and none provided evidence from LMICs. The relationship between family structure transitions, stress, and children's outcomes may differ in LMICs compared with high-income countries. Family structure transitions may be more detrimental for children living in LMICs because they could push families more easily into poverty – more families are close to the edge, and government safety nets for families are by-and-large not strong – with detrimental impacts for child development (Dornan & Woodhead, 2015; Kousky, 2016; Engle & Black, 2008). Thinking about the four LMICs included in this thesis then, family structure transitions might be particularly financially stressful in Ethiopia, since it has the highest proportion of families living in poverty (The World Bank, 2022b), and therefore a higher proportion of families who could be pushed into additional hardship following a change in family structure.

1.6.3 Recent Studies Testing the Instability Hypothesis

Since the publication of Hadfield and colleagues' (2018) systematic review, several studies have continued to investigate the relationship between family structure transitions, stress, and children's outcomes. Some of these studies have found evidence to support the instability hypothesis. For example, Davies and colleagues (2022) found that children's internalised antagonistic perceptions of their families mediated the association between parental relationship instability and children's cognitive function and learning abilities. Research by Bernardi (2019) examined the association between experiencing a parental departure from the household and wealth accumulation in adulthood. Their findings showed that several variables mediated this association, namely: human capital (i.e., education, wage, cognitive

ability) and their own subsequent family dynamics (i.e., being in a first marriage with a college-educated partner, not having children, or having children before age 25).

Most studies, though, have found little-to-no evidence to support the instability hypothesis. Stannard and colleagues (2022) tested whether maternal psychological distress, living standards (i.e., whether household income was less than £35 a week, if they received free school meals, and if they had damp in their house), childhood behaviour and cognition, and educational attainment mediated the relationship between parental separation and the number of coresidential dissolutions children experienced in adulthood. Their findings showed that childhood living standards mediated this association. Evidence for the other mediators, though, differed by sex; lower childhood cognition and problem behaviour mediated the relationship between parental separation and the number of coresidential dissolutions men went on to experience, and maternal psychological distress mediated this association for women.

Several studies have found that support for the instability hypothesis differs depending on how "stress" is operationalised. For instance, Karberg and Carbrera (2020) examined the association between changes in the mother's cohabiting romantic relationship status and children's aggressive behaviour. They tested whether several parenting variables mediated this association, including coparenting support (i.e., a mother-report of whether they felt supported by the child's biological father), mother and father involvement (i.e., a report from the mother and father on how many days per week they do certain activities with their child, such as putting them to bed, reading stories, and taking the child to visit a relative), and maternal responsiveness (i.e., an observation of the warmth and responsiveness between the mother and their child). Evidence for these mediators was limited; coparenting mediated the relationship between mother's union instability and children's aggressive behaviour, but mother and father involvement and maternal responsiveness did not. Research by Sommers (2020) investigated the indirect association between changes in the mother's romantic relationship status and children's BMI. Several mediator variables were tested: maternal parenting stress, harsh parenting, coparenting quality, socioeconomic status. The findings revealed that socioeconomic status was the only mediator that explained the relationship between mother's relationship transitions and children's BMI. Rattay and colleagues (2018) found that the relationship between family structure transitions and adolescent's health was mediated by family cohesion, but the mediation was not as strong for socioeconomic status –

only the effect of a transition from a stepfamily to a single-parent family on adolescent's health was mediated by this stressor. Hu (2020) also found that the relationship between family structure transitions and children's wellbeing was mediated by parent-child relationship quality and parental conflict, but not by economic resources and non-pecuniary resources (i.e., child-reported parental strictness, and joint activities and communication between children and adult family members).

Some studies testing the instability hypothesis have found no evidence at all of a mediation effect. Barnett and colleagues (2020) investigated whether parenting behaviour and parents' depressive symptoms mediated the relationship between parental romantic relationship changes and children's internalising and externalising symptoms and self-regulation. Neither mediator explained the association between parental romantic relationship changes and any of the three outcomes. Bosick and Fomby (2018) tested whether the association between mother's union instability and men's likelihood of arrest and incarceration were mediated by their marital status in adulthood, whether they had experienced a relationship dissolution in adulthood, and if they had a biological child. Although the authors found a relationship between the mediator and the outcomes – married men were less likely to be arrested, while men who had a biological child were more likely to be arrested and incarcerated – there was no evidence to suggest that men's own family formation behaviours mediated the association between maternal relationship instability and likelihood of arrest or incarceration.

Six out of the nine studies described above tested the instability hypothesis in the United States. The other three studies tested the instability hypothesis in other high- or upper-middle-income countries, namely the United Kingdom (high-income) (Stannard et al., 2022), Germany (high-income) (Rattay et al., 2018), and China (upper-middle income) (Hu, 2020). China is on the brink of becoming a high-income country (Xuanmin, 2022), and so the only study testing the instability hypothesis in a LMIC is towards the upper end of low- and middle-income. Thus, since the publication of Hadfield and colleagues' (2018) systematic review, research on the instability hypothesis continues to focus predominantly on the United States, and there is a significant lack of research testing this hypothesis in LMICs. This thesis aims to address this considerable gap by testing the instability hypothesis in a diverse range of low-, middle-, and high-income countries.

Taken together, the conclusion of Hadfield and colleagues' (2018) systematic review combined with evidence from subsequent studies testing the instability hypothesis strongly

suggests that family structure transitions are not always stressful and, therefore, do not always lead to negative outcomes for children. This variability in stress might explain why the effects of family structure transitions on child outcomes are inconsistent. That is, if family structure transitions are not always stressful, there might be specific circumstances which expose children to, or shield them from, the stress associated with these transitions (i.e., risk and protective factors). This thesis aims to extend the instability hypothesis by exploring some of those circumstances.

1.7 Risk and Protective Factors

1.7.1 Family Relationship Quality

Family structure transitions cause disruption to the family system which, in some cases, leads to stress (Wu & Martinson, 1993; Hadfield, Amos, et al., 2018). These transitions are increasingly recognised as a process rather than a discrete event (Cao et al., 2022; Coleman & Glenn, 2010). Therefore, the circumstances that unfold prior to and following a family structure transition are likely to either increase or decrease the stress associated with these transitions. The double ABC-X model of family stress and adaptation suggests that family functioning impacts families' adjustment to stressors (McCubbin & Patterson, 1983). That is, when families function cohesively, they are better able to adapt to stress (Crosbie-Burnett, 1989; McCubbin et al., 1980). Indeed, qualitative research involving interviews with mothers and their children has identified that family relationship quality plays a protective role during family instability (Hadfield & Nixon, 2018). Below, I will consider how family relationships (specifically, the child-parent and interparental relationships) could influence the stress associated with experiencing changes in family structure.

1.7.1.1 The Child-Parent Relationship

Family instability can impact the child-parent relationship (Hu, 2020). Children who live in single-mother households tend to have closer, more interdependent relationships with their mothers (Gangong & Cloeman, 1994). Therefore, family structure transitions which result in single-parent households will likely increase the level of closeness between the child and the parent who remains in the same household as the child. On the other hand, children who experience the entrance of a stepparent into the household tend to experience a decline in

closeness with their resident parent (King, 2009; Mooney et al., 2009), which can be due to the new partner lessening the hope of their parents repartnering (Berger, 1998), or from the child having to compete for their mother's attention (Crosbie-Burnett & Ahrons, 1985). The quality of the child-parent relationship will likely influence the stress associated with family structure transitions because the child-parent relationship is a resilience resource (Masten, 2018). So, if parents share a close, warm relationship with their child, this could buffer against the stress associated with experiencing a family structure transition.

1.7.1.2 The Interparental Relationship

The interparental relationship can exert both positive and negative influences on stress, specifically, parenting stress (Harold et al., 2016; Krishnakumar & Buehler, 2000). Healthy interparental relationships can be beneficial for parenting stress because the positive emotions generated by the romantic relationship enable parents to engage in positive parenting behaviours (Krishnakumar & Buehler, 2000). In contrast, interparental conflict can lead to emotional distress for parents which impacts their parenting capacity (Erel & Burman, 1995; Hakvoort et al., 2012; Sturge-Apple et al., 2006; Sturge-Apple et al., 2012). Interparental conflict can also affect parenting through the child-parent relationship; the emotions generated by the interparental conflict can transfer over to the child-parent relationship (i.e., the "spillover hypothesis") (Erel & Burman, 1995; Hakvoort et al., 2012; Krishnakumar & Buehler, 2000), thus causing parents to appraise the relationship with their child more negatively. Therefore, the quality of the interparental relationship has the potential to increase or reduce the parenting stress associated with experiencing a family structure transition.

1.7.2 The Family Context

Social support, which can be defined as "support accessible to an individual through social ties to other individuals, groups, and the larger community" (Lin et al., 1979, p. 109), can act as a protective buffer against stress (Cohen & Wills, 1985; Ozbay et al., 2007). More specifically, social support can act as a buffer against stress experienced within the family context (McCubbin & Patterson, 1983). Types of social support include emotional support (e.g., love and empathy) and instrumental support (e.g., money or childcare) (Ozbay et al., 2007). Even if support is not directly received, perceptions of social support also positively influence peoples' adjustment to stressful life events (Wethington & Kessler, 1986). Therefore, it is possible that having access to real or perceived social support could reduce

the stress associated with experiencing a family structure transition. One proximal avenue through which parents could find this support is through their family members.

1.7.2.1 Grandparents and Extended Kin

The parental loss perspective suggests that family structure transitions – particularly those from a two-parent family to a single-parent family – can lead to a lack of resources, including money and social support (Amato, 1993). Living in the same household as grandparents or other extended kin could be advantageous, because they might be able to compensate for these reduced resources (Mehio-Sibai et al., 2009; Myroniuk & Payne, 2019). Grandparents are less likely to provide financial support (Huo et al., 2018), but many grandparents provide other types of crucial support such as childcare (Settles et al., 2009), which negates some of the expenses associated with childcare and enables parents to continue to work and earn money for the household. This type of social support may be particularly vital for families living in more disadvantaged contexts (e.g., families living in LMICs), because they are less likely to have the financial resources to afford childcare costs (Barnett, 2008). However, although some family members have the capacity to provide support, others require support (e.g., elderly or sick relatives). Thus, family members have the potential to exacerbate as well as reduce the financial stress associated with family structure transitions.

1.7.2.2 Household Size

In addition to who is in the household, how many people are in the household might also matter. If a household is large and includes family members who can provide various types of support, this could reduce the stress associated with family structure transitions. Indeed, research suggests that living in a household which includes more than a couple and their children (i.e., a larger household) decreases the likelihood of living in poverty (Cuesta et al., 2017), and so living in a larger household may reduce the financial stress associated with experiencing a family structure transition. However, if a household is large but involves dependent adults or children who require support themselves, this could increase the stress associated with family structure transitions as resources have to be stretched across more people. Therefore, the size of the household may act as both a risk and protective factor, depending on the household members' capacity to contribute towards the household.

In sum, the mixed instability hypothesis literature suggests that family structure transitions are not experienced in the same way by everyone; transitions may be deleterious for some, but neutral or even positive for others. The third aim of this thesis is to test and extend the instability hypothesis across five low-, middle-, and high-income countries. Five rounds of the Young Lives data (ages 1 to 15) and three rounds of the GUI data (ages 9 to 17/18) will be used to address this research aim. Using the Young Lives data is advantageous because almost all of the instability hypothesis research focuses on high-income countries; this dataset will allow me to test this hypothesis in four LMICs. The GUI dataset is particularly well-suited to addressing this research aim, because it includes a rich set of variables on family relationship quality, including data on the child-caregiver and interparental relationships.

1.8 Research Aims and Hypotheses

This PhD project will address three research aims. The first aim is to identify the prevalence of family structure transitions in LMICs. This will be achieved through analysing four rounds (ages 1 to 12) of the Young Lives data, which samples families living in Ethiopia, India, Peru, and Vietnam. The Young Lives prevalence estimates will be validated using the nationally representative DHS data in the same four countries. The Young Lives prevalence estimates will then be compared with estimates on the prevalence of family structure transitions by age 12 from 17 high- and upper-middle-income countries (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017). Prevalence estimates will also be generated using the GUI data, but these estimates cannot be compared with the Young Lives or comparison country data because they cover a different developmental period (age 9 to 17/18 vs. birth/age 1 to 12).

The second aim is to identify the consequences of family structure transitions in LMICs. The outcomes of interest are children's physical health and educational achievement. The analyses will be run using five rounds (ages 1 to 15) of the Young Lives data. The analyses will also be run using three rounds (ages 9 to 17/18) of the GUI data to provide a high-income comparison country from a country currently underrepresented in the family instability literature. It is hypothesised that family structure transitions will be more impactful for children in countries where the prevalence of transitions is low, because transitions are less normative and thus potentially more stressful (Fomby et al., 2010; Perkins, 2019; Ryan & Claessens, 2013).

The third aim is to test and extend the instability hypothesis. These analyses will be run using five rounds (ages 1 to 15) of the Young Lives data and three rounds (ages 9 to 17/18) of the GUI data. To test the instability hypothesis, stress will be added as a mediator to the family structure transition – child outcome relationship. Stress will be conceptualised as financial stress in the Young Lives analyses, and as financial stress and parenting stress in the GUI analyses; a parenting stress variable was not available in the Young Lives data. As per the instability hypothesis, I hypothesise that stress will mediate the relationship between family structure transitions and children's outcomes. To extend the instability hypothesis, family context and family relationship quality moderator variables will be added to the family structure transition – stress relationship. Three separate family context moderators will be tested: household size, living in a multigenerational household, and living in an extended kin household. Nine separate family relationship quality variables will be tested: parental arguing, parental shouting, parental physical abuse, primary caregiver romantic relationship satisfaction, secondary caregiver romantic relationship satisfaction, child-primary caregiver conflict, child-primary caregiver closeness, child-secondary caregiver conflict, and child-secondary caregiver closeness. I hypothesise that having high closeness and low conflict in the child-caregiver relationships will reduce the parenting stress associated with family structure transitions. I do not have a directional hypothesis about caregiver relationship satisfaction, because a transition into a highly satisfied relationship might reduce stress, but a transition out of a highly satisfied relationship might increase stress.

In Chapter 2, I will discuss the theoretical model for the thesis; describe the Young Lives and GUI datasets and the variables of interest; outline analytic methods; describe my use of Linear Mixed Models; and outline my analysis plan. In Chapter 3, I will provide prevalence estimates for family structure transitions in the four Young Lives countries (aim one) and in Ireland, and describe the impacts of these transitions on children's physical health and educational achievement (aim two). In Chapter 4, I will test the instability hypothesis in the Young Lives countries and in Ireland (aim three). In Chapter 5, I will extend the instability hypothesis by adding moderators to the family structure transition – stress pathway in the Young Lives countries and in Ireland (aim three). Finally, in Chapter 6, I will discuss the focal findings of this thesis in relation to the existing literature, suggest potential future directions for research, outline the strengths and limitations of this research, discuss the theoretical and practical implications of the findings, and provide concluding remarks.

Chapter 2: Methods

2.1 Introduction

The focus of this chapter is to outline the methodologies used to answer the three research aims in this thesis. This chapter begins by describing the research aims and the theoretical model. The chosen studies – namely, the Young Lives and Growing Up in Ireland (GUI) studies – will then be described in detail, followed by a description of the specific variables used in the analyses. The chosen method of statistical analysis and why it was the most optimal method of analysis will be described, along with an analysis plan for each aim. The chapter will end with a conclusion.

2.2 Research Aims and Theoretical Model

This thesis had three research aims which can be mapped onto one theoretical model (Figure 2.1.). In this section, I will outline each of the aims, and demonstrate how each one builds on the theoretical model. I will also describe the analytic techniques used to address each research aim.

Figure 2.1.

Theoretical Model Encompassing the Research Aims Investigated in this Thesis
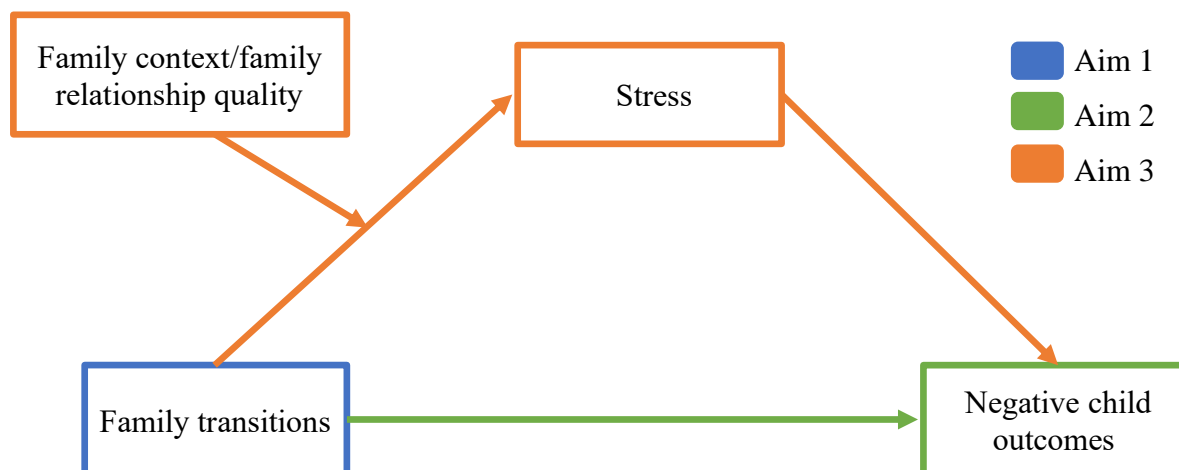
2.2.1 Aim 1

Family structure transitions are prevalent in many high-income countries (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017), but we know very little about these transitions for children living in LMICs who make up the vast majority of the world's children (Blum & Boyden, 2018). To address this substantial gap, the first aim of this thesis was to identify the prevalence of family structure transitions in low- and middle-income countries (LMICs) (Figure 2.2.). To optimally estimate the prevalence of transitions in these contexts, four rounds of younger cohort data from the Young Lives study (ages 1 to 12) were used, which samples families living in four LMICs: Ethiopia, India, Peru, and Vietnam. The Young Lives estimates were validated using the nationally representative Demographic and Health Surveys (DHS), which also sample families living in these four countries. The Young Lives prevalence estimates were compared with data from 17 high- and upper middle-income countries on the prevalence of family structure transitions by age 12 (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017).

Figure 2.2.

Aim 1: Identifying the Prevalence of Family Structure Transitions in LMICs
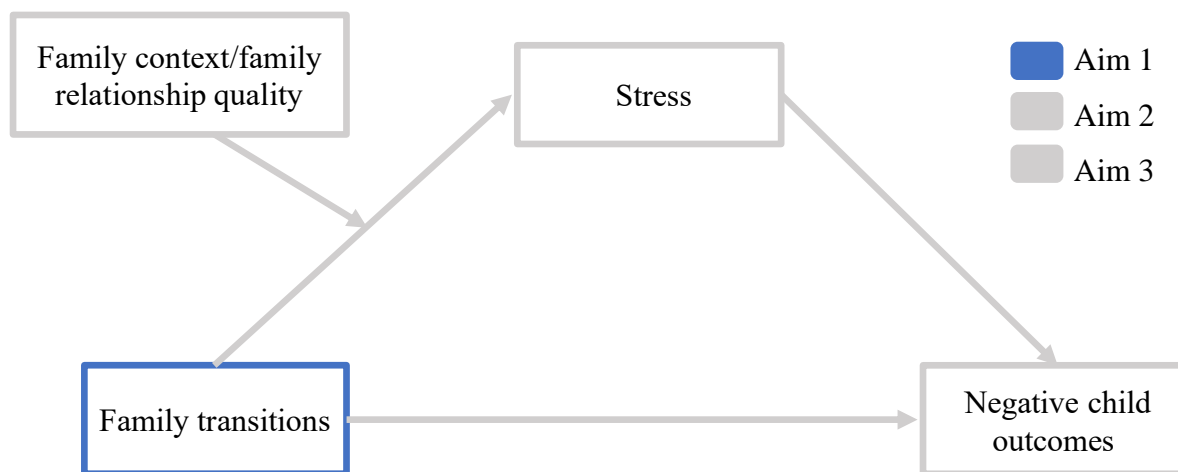
2.2.2 Aim 2

Family structure transitions are associated with a host of negative outcomes for children, including worsened physical health and educational achievement (Bzosteck & Beck, 2011; Cavanagh & Fomby, 2019; Davies et al., 2019; Fomby & Cherlin, 2007; Fomby & Bosick, 2013; Heard, 2007; Osborne & McLanahan, 2007; Pasqualini et al., 2018; Perkins, 2019). Most of this research focuses on children living in high-income countries, even though the

mechanisms through which family structure transitions impact children are likely to be applicable globally. A small number of papers have looked at the impact of living in different family structures at one point in time on children living in LMICs (e.g., Bhuiya & Chowdry, 1997; Clark & Hamplova, 2013; Cuesta et al., 2017; DeRose, Salazar-Arango, et al., 2017; Ntoimo & Odimegwu, 2014; Schmeer, 2013; Smith-Greenaway, 2020; Thiombiano et al., 2013), and even fewer have looked at how changes in family structure (i.e., family structure transitions) impact children's outcomes (e.g., Gaydosh, 2017; Hu, 2020). As per the instability hypothesis, changes in family structure may matter more than family structure itself (Fomby & Cherlin, 2007; Wu & Martinson, 1993). Therefore, to address this gap, the second aim of this thesis was to determine whether family structure transitions are associated with child physical health and educational achievement in LMICs (Figure 2.3.). As with aim one, younger cohort data from the Young lives study was used, which allowed me to examine the impacts of family structure transitions in contexts seldom studied in the existing family instability literature. In this analysis, five rounds (ages 1 to 15) of data were used to include the maximum amount of data possible. To provide a high-income country comparison from a country currently underrepresented in the family structure transition literature, I ran these analyses using three rounds (ages 9 to 17/18) of child cohort data from the GUI study.

Figure 2.3.

Aim 2: Testing the Direct Association between Family Structure Transitions and Children's Physical Health and Educational Achievement in LMICs
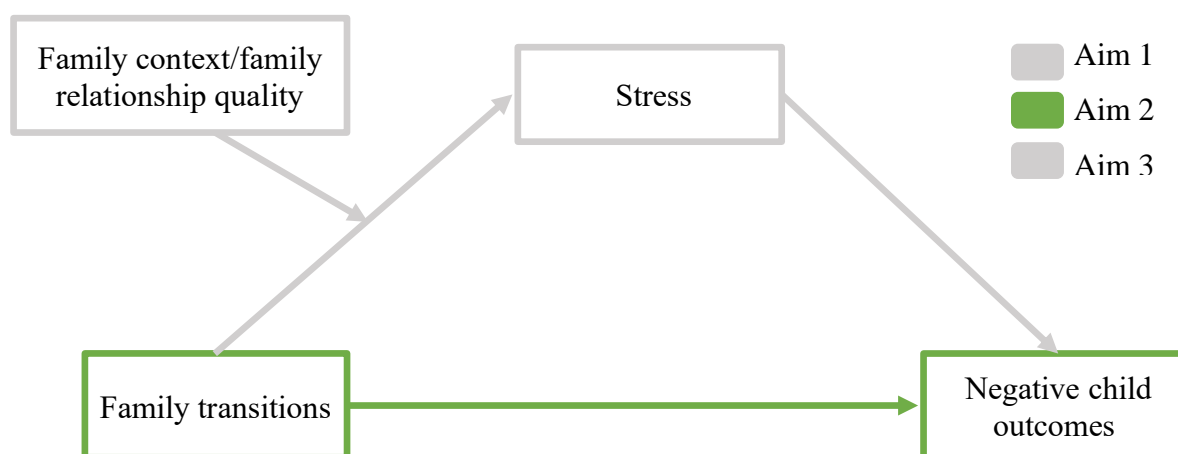
2.2.3 Aim 3

The predominant theoretical framework in the family structure transition literature is the instability hypothesis, which theorises that transitions impact children's outcomes through the pathway of stress (Fomby & Cherlin, 2007; Wu & Martinson, 1993). However, a recent systematic review of the instability hypothesis demonstrates that evidence for this hypothesis is mixed (Hadfield, Amos, et al., 2018), which suggests that transitions are not always stressful, and do not always lead to negative outcomes for children. Further, almost all the research testing the instability hypothesis focuses on high-income countries, even though it is likely that family structure transitions are a stressful experience for those living in LMICs too. To shed light on the mixed instability hypothesis literature, and to broaden the contexts in which the instability hypothesis is studied, the third and final aim of this thesis was to test and extend the instability hypothesis (Figure 2.4.). First, I tested whether stress mediated the family structure transition – child physical health/educational achievement association. Then, I added variables to the family structure transition – stress pathway to identify potential moderators of the instability hypothesis. I ran these analyses using five rounds of the younger cohort data from the Young Lives study (ages 1 to 15), and three rounds of the child cohort data from the GUI study (ages 9 to 17/18). Using both of these datasets was advantageous because it allowed me to compare evidence for the instability hypothesis across a range of geographical and cultural contexts. In addition, because of the rich variables included in the GUI data, it allowed me to look closely at how family relationships influence the stress associated with family structure transitions.

Figure 2.4.

Aim 3: Testing and Extending the Instability Hypothesis
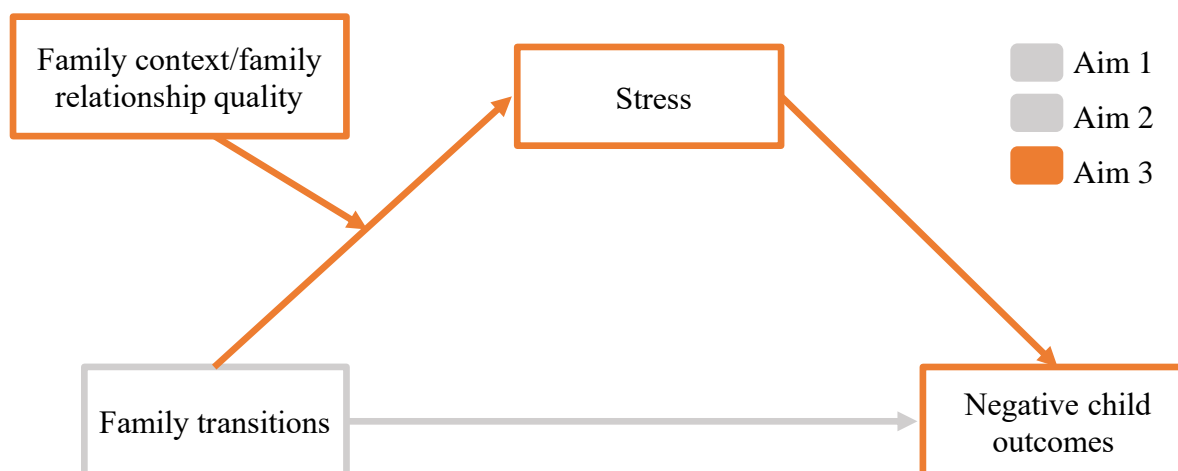
2.3 Secondary Data

Due to the scope of these research aims – that is, examining changes in children over time across multiple contexts – I used secondary data to complete the analyses. Specifically, to investigate the prevalence and consequences of family structure transitions over time in the most rigorous way possible, secondary *longitudinal* data was used. Although cross-sectional data can be (and is frequently) used to measure family instability, this approach focuses on comparing children to one another, rather than following the same children over time. The latter approach is preferable because it naturally controls for other influences on children's outcomes that are not family structure transitions, such as where they go to school or their socioeconomic status. Therefore, this approach naturally controls for the selection hypothesis, which suggests that parents possess characteristics which make them more likely to experience multiple transitions, and their children more likely to experience unfavourable developmental outcomes (Wu & Martinson, 1993).

2.3.1 Secondary Longitudinal Data in Family Research

From as early as the 1960's, several large-scale, longitudinal studies have been conducted which gather information on children and their families over time (Hofferth, 2005). Although some of these studies were not initially designed to examine family relationships, they include a wealth of information which allows researchers to study families over several years (e.g., the 1970 British Cohort Study, the German Socio-Economic Panel Study, the Taiwan Birth Cohort Study). For example, many studies include a household roster which documents who is living in a household at any given time. As such, researchers are able to observe changes in the who is living in the household over time, and therefore discern whether a family structure transition has occurred. These studies also tend to include data on children's developmental outcomes (e.g., physical health, wellbeing, cognitive function). Inclusion of such information is crucial to assess whether children's outcomes differ as a function of experiencing a family structure transition. Thus, these datasets are a rich and valuable resources for researchers studying family instability, hence they are frequently used in the family structure transition literature. In fact, of the 39 studies included in a systematic review of the instability hypothesis, 26 of them used the same eight, large-scale longitudinal datasets (Hadfield, Amos, et al., 2018) (see Table 2.1. for information about these studies).

2.3.2 Advantages of Secondary Longitudinal Data

Large-scale, longitudinal datasets have many benefits for those who want to examine changes in children and families over time. First, these types of studies take many years to design and implement (Doyle & Golding, 2009); the availability of this data is extremely beneficial for researchers who want to study family processes over time, because they can gain a wealth of information at a relatively low time and financial cost. By their nature, these types of studies have large sample sizes (i.e., thousands or tens of thousands of participants) which increases the statistical power required to generate accurate parameter estimates (Kievit et al., 2021). As well as being large-scale, some – but not all – are nationally representative, which enhances the generalisability of the findings and allows inferences about entire populations. Thus, secondary longitudinal datasets give researchers access to high-quality data about children and their families which would otherwise take many years to collect. In this PhD, I have used data from two large-scale, longitudinal cohort studies: Young Lives and Growing Up in Ireland. Below, I will provide detailed information about these two datasets, and illustrate why I chose to use these datasets to answer my research aims.

Table 2.1.

Longitudinal Studies which are Frequently Used in the Instability Hypothesis Literature

Study	Country	Sample size (N)	Sample age range	Number of timepoints	Type of data collected
Early Childhood Longitudinal Survey (birth cohort)	United States	$N = 10,700$*	9 months – 6/7 years	4	Multi-informant information on children's cognitive, social, emotional, and physical development in the home, childcare, and school setting
Early Childhood Longitudinal Survey (kindergarten cohort)	United States	$N = 21,260$*	5 – 11 years	6	Multi-informant information on children's cognitive, social, emotional, and physical development; children's home, school, and classroom environment; home educational activities; classroom curriculum
Fragile Families and Child Wellbeing Study	United States	$N = 4,898$	1 – 22 years	6	Mother/father, primary caregiver and child-reported attitudes, relationships, parenting, mental/physical health, economic and employment status, neighbourhood characteristics, program participation

UK Millennium Cohort	United Kingdom	$N = 18,818$	9 months – 22 years	8	Children's physical, cognitive, socio-emotional and behavioural development, schooling, leisure, identity and attitudes, relationships, risky behaviour, family context, parenting, socioeconomic circumstances
National Education Longitudinal Survey	United States	$N = 26,432*$	13 – 26 years	5	Children's school, work, and home experiences; educational support and aspirations; neighbourhood characteristics; extra-curricular activities; risky behaviours
National Longitudinal Study of Adolescent Health (Add Health)	United States	$N = 20,000*$	12 – 43 years	5	Children's psychosocial, behavioural, cognitive, and health development; family context; socioeconomic circumstances; school and neighbourhood context; biological data (e.g., genetic markers)
National Longitudinal Survey of Youth (1979)	United States	$N = 12,686$	14 – 62 years	28	Participants' health, education, and employment; household, geographical, and family context; relationship and sexual behaviour; risk behaviour; attitudes; socioecomic circumstances
Welfare, Children, and Families: A Three-City Study	United States	$N = 2,400$	0 – 20 years	3	Neighbourhood and family context; relationship and sexual behaviour; risky behaviour; education; health; work, socioeconomic circumstances

Note. *Nationally representative sample. Sample size represents the number of respondents at round one. The studies included in this Table are those which are used twice or more in the studies included in Hadfield, Amos, et al.'s (2018) systematic review of the instability hypothesis. For more information about each of the studies, please visit the study websites: Early Childhood Longitudinal Survey (birth cohort): https://nces.ed.gov/ecls/birth.asp; Early Childhood Longitudinal Survey (kindergarten cohort): https://nces.ed.gov/ecls/kindergarten.asp; Fragile Families and Child Wellbeing Study: https://fragilefamilies.princeton.edu/about; UK Millennium Cohort: https://cls.ucl.ac.uk/cls-studies/millennium-cohort-study/; National Education Longitudinal Survey: https://nces.ed.gov/surveys/nels88/; National Longitudinal Study of Adolescent Health (Add Health): https://addhealth.cpc.unc.edu; National Longitudinal Survey of Youth (1979): https://www.nlsinfo.org/content/cohorts/nlsy79; Welfare, Children, and Families: A Three-City Study: https://www.icpsr.umich.edu/web/DSDR/studies/4701.

2.4 Data Requirements

In order to best investigate the prevalence and consequences of family instability over time, an optimal study should include data that allows you to categorise children's family structures. The method of categorisation should be available at multiple timepoints so that changes in children's family structure over time (i.e., family structure transitions) can be identified. Family structure transitions are measured in a variety of ways in the existing literature, including changes in marital, cohabiting, and/or dating relationship status, and residential changes (Hadfield, Amos, et al., 2018). Using self-reported changes in marital or dating relationship status could result in undercounting the prevalence of certain family structures, because people have different definitions of what certain family structures are (Hadfield & Nixon, 2013). For example, some may class themselves as living in a stepfamily if they live with a cohabiting partner, whereas others may categorise themselves as living in a stepfamily only if they are living with a marital partner. Further, some parents may avoid disclosing that they live in certain family structures if they live in a context where those family structures are stigmatised (e.g., single-parent/single-mother households). Therefore, datasets that include a household roster which allow you to track changes in the parents' cohabiting relationship status are favourable, because where the child's parents are living can be determined (i.e., in the same household as the child or not, and with another parent/partner or not), rather than relying on self-reported family structure. This method allows changes to both the mother's and father's cohabiting relationship status to be determined, which is valuable because the existing literature largely focuses on mothers' marital status, despite evidence which suggests that both maternal and paternal family structure transitions are stressful and associated with negative child outcomes (e.g., Heard, 2007; Sun & Li, 2011).

A good study of family instability should also include a measure of child development. The family instability literature looks at the impacts of family structure transitions on a myriad of developmental outcomes, including physical health, school performance, cognitive achievement, wellbeing, and socioemotional and problem behaviour (Cavanagh & Fomby, 2019; Fomby & Cherlin, 2007). Therefore, the ideal study would contain a strong measure of at least one of these outcomes in order to examine whether family instability is associated with children's outcomes.

To test the instability hypothesis, which theorises that stress mediates the relationship between family structure transitions and children's outcomes (Fomby & Cherlin, 2007; Wu & Martinson, 1993), the ideal study should include a measure of stress. The instability hypothesis does not provide a conceptualisation of "stress", so the existing literature uses a variety of stressors (e.g., financial stress, parent functioning, school and residential mobility) (Hadfield, Amos, et al., 2018). A study that includes a stress variable that is used in the existing instability hypothesis literature and – most importantly – makes the most theoretical sense in the context of my research aims is required. It is essential that the study includes information about the family context (e.g., household size, household members) in order to extend the instability hypothesis (i.e., to unpack the specific circumstances under which transitions lead to stress). Ideally, information about the quality of family relationships would also be included to quantitatively test a theory derived from the qualitative literature which suggests that family relationship quality (e.g., closeness and conflict between family members) influences the impact of family instability on children (Hadfield & Nixon, 2018).

To examine family structure transitions through a more geographically and culturally diverse lens, the ideal study should sample families living in at least one LMIC. This would allow for an exploration into how common family structure transitions are and how they impact children living in contexts which are understudied in the extant literature. It would also allow the instability hypothesis to be tested outside of high-income countries, where there is a limited evidence base.

Two studies which allowed me to address my research aims in the most effective way possible are the Young Lives study and the GUI study. The Young Lives study is an international study of childhood poverty which samples children and their caregivers living in four LMICs: Ethiopia, India, Peru, and Vietnam. The GUI study is the largest study of children and families in Ireland. Below, I will describe both studies in detail, and outline why they were chosen to answer the research aims in this thesis.

2.5 The Young Lives Study

I searched for datasets which sample children and their families living in LMICs. The Institute for Fiscal Studies (IFS) website has a directory of longitudinal studies conducted in

LMICs (IFS, 2019). Using this directory, I looked for studies which: collected data within the past 20 years; sampled children and their caregivers at regular timepoints throughout childhood; asked about their family lives and children's developmental outcomes; included a measure of stress; and were publicly available to researchers. The Young Lives study was the only study to fulfil these criteria, and it is exceptionally valuable because it samples children living in *multiple* LMICs.

2.5.1 The Young Lives Study: Research Methods

The Young Lives study samples 12,000 children and their caregivers living in four LMICs: Ethiopia, India, Peru, and Vietnam. These four countries were selected from a shortlist of 25 countries to: represent the four major regions of the developing world; include both low- and middle-income countries; reflect diverse socioeconomic and political systems; and have the local capacity to conduct the study. The aim of the Young Lives study is to understand the causes and consequences of childhood poverty. Therefore, 20 regions within each country were purposefully selected to oversample poorer areas and exclude rich areas. The final sample contained children living in poor and not-so-poor regions. Within the 20 selected regions, households containing one-year-old children (to be included in the younger cohort) or seven-to-eight-year-old children (to be included in the older cohort) were randomly selected. This combination of purposive and random sampling ensured that the study was able to fulfil its aims, whilst also reflecting a variety of children's experiences (Young Lives, 2017). The Young Lives sample has also been compared with other datasets, such as the nationally representative Demographic and Health Survey, which revealed that, although children living in poorer areas were oversampled, the Young Lives sample includes a diverse range of children in each country (Young Lives, 2017).

Young Lives collects data from two cohorts: the younger cohort and the older cohort (Figure 2.5.). For both cohorts, data collection began in 2002 with six rounds of data currently available to researchers. Round one data collection began when the younger cohort were age 1, and sampled them every three-to-four-years at ages 5, 8, 12, 15, and 19. In round one, the older cohort were age 8 and were sampled periodically at ages 12, 15, 19, 22, and 25. The sixth round of data was collected during the COVID-19 pandemic – after the analyses for this thesis were complete – so this thesis uses the first five rounds of younger cohort data from the

Young Lives study (see Appendix A for the means, standard deviations, and ranges of child age at each round for each country). The older cohort data was not used in the analyses in this thesis because data collection began during middle childhood (age 8), and so transitions in the first eight years of life would have been missed if this cohort's data were used. Further, children are more likely to leave the household (and therefore not be living in the household when a family structure transition occurs) when they are older. So, using the older cohort data would have resulted in having more missing data, because children would be more likely to live in a different household to their parents.

Figure 2.5.

Sampling in the Young Lives Study
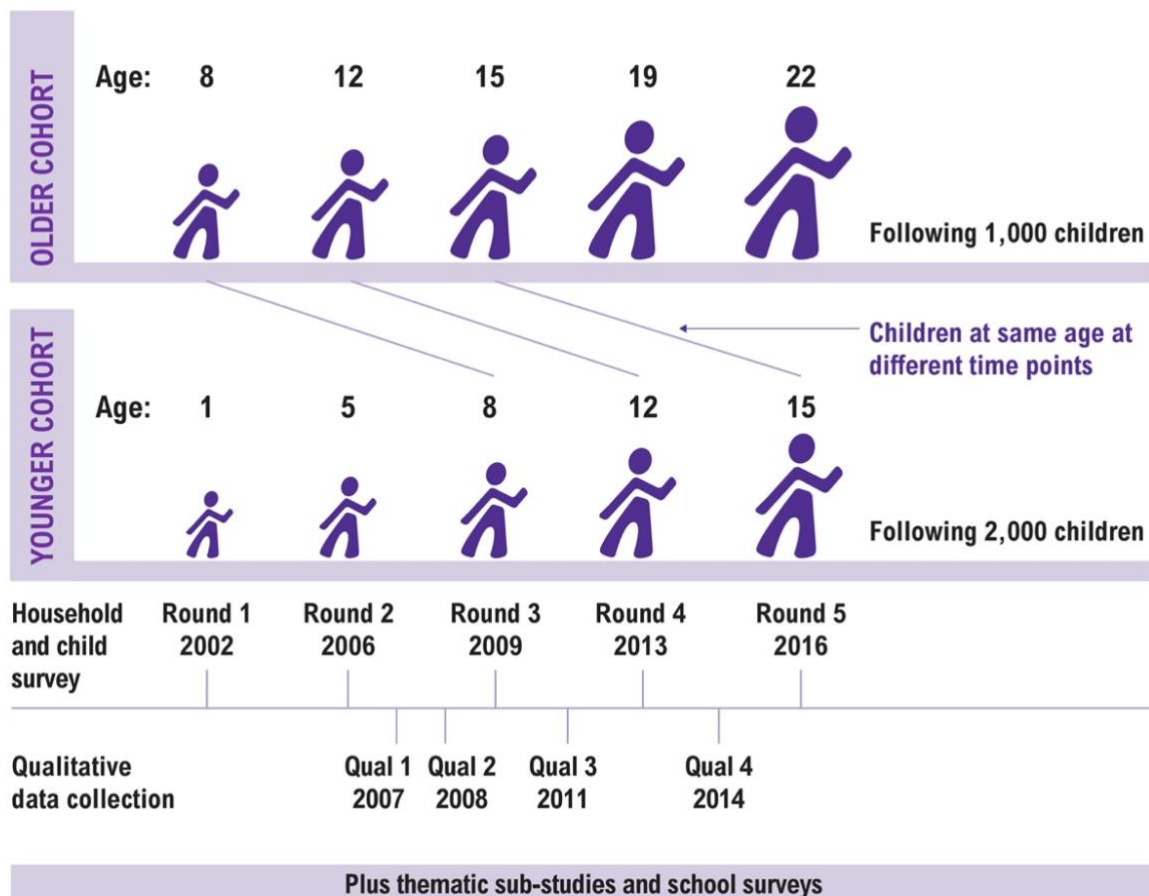
Source: Young Lives.

The Young Lives study uses a multi-method approach involving questionnaires and interviews. Sub-studies have also been conducted to gain a deeper insight into issues of particular interest, such as children's experiences of violence, parental death, child marriage, and early-child rearing (Young Lives, 2021a). The questionnaire data was used in all the analyses in this thesis. The questionnaire data was collected at every round and consists of

two main questionnaires: the household and child questionnaire, and the school questionnaire. The household and child questionnaire has three main components which are the household questionnaire, the child questionnaire, and the community questionnaire. All these questionnaires were administered at research sites by trained fieldworkers using face-to-face interviews. The household questionnaire includes information on a range of topics including household composition, child health, livelihoods, socioeconomic status, and education. This questionnaire is completed by the child's primary caregiver at all rounds. The child questionnaire asks about the child's social experiences, including their attitudes towards work and school, their likes and dislikes, and how they feel they are treated by others. This is completed by the child from round three (age 8) onwards, but similar questions about the child's health, wellbeing, and care of the child were asked to the caregivers in previous rounds. The community questionnaire collects information about the social, economic, and environmental context of each community, including topics such as employment, political representation, and crime. This questionnaire is largely the same in each country, but they include additional questions to capture country-specific information (e.g., the impact of government policy and programmes) (Young Lives, 2021b). This is completed by key informants from the community at all rounds. The school questionnaires were introduced in 2010 (i.e., between rounds three and four) and include a sample of the schools in the Young Lives regions. The aim of this questionnaire is to examine the multilevel factors (i.e., child, class, teacher, and school) associated with children's learning outcomes through surveys, assessments, and observations (Rolleston et al., 2013). Finally, the qualitative component of the Young Lives study follows a sub-sample of 50 children from both cohorts in each country and was collected between survey rounds (twice between round two and three, once between round three and four, and once between round four and five) (Figure 2.5.). The aim of this component of the study was to gather information about children's changing life trajectories, complementing the questionnaire data with a more in-depth account of children's experiences. In this thesis, the household and child questionnaires were used to understand household composition, stress, family context, and children's physical health and educational achievement.

2.5.2 Researching Family Instability Using the Young Lives Study

The Young Lives dataset is particularly well-suited for researching family instability for several reasons. First, it is longitudinal and samples children from early infancy through

adolescence, and so the prevalence of family structure transitions in the Young Lives countries can be compared with well-established prevalence estimates in high- and upper-middle income countries (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017). Second, it includes a household roster, so children's family structures can be identified at each round by determining where the child's parents and their partners (if any) were living (in the same household as their child or not). The household rosters can also be used to glean information about the family context (e.g., household size, household members), which is necessary for addressing my final research aim (i.e., examining the instability hypothesis). It collects data on multiple developmental outcomes (e.g., physical health, educational achievement) which allows for an investigation into how changes in family structure impact children's outcomes over time. It includes a high-quality financial stress variable – the wealth index variable – which will be discussed in detail later in this chapter, and so the instability hypothesis can be tested and extended upon. Finally, it samples children and their families living in four diverse LMICs (Ethiopia, India, Peru, and Vietnam), which enables for an exploration into if and how family instability impacts children living in contexts seldom studied in the existing literature.

2.6 The Growing Up in Ireland Study

My third research aim was to extend the instability hypothesis by identifying whether the family context and family relationship quality moderate the stress associated with family structure transitions. Thus, a study that included variables which assess the quality of the child-caregiver and interparental relationships was needed to address this aim. Because the GUI study is a study of children and families, it includes fine-grained measures of family relationships which allowed me to effectively address this research aim.

2.6.1 The Growing Up in Ireland Study: Research Methods

The GUI study is the largest study of children and families in Ireland. The study involves two cohorts: the infant cohort and the child cohort. This thesis uses the child cohort data because educational achievement is an outcome of interest, and so I wanted to include data from children who were old enough to be assessed on this outcome. The study began in 2008 when children were 9 years old. Children were followed up on four occasions at ages 13, 17/18,

and 20. Rounds one to three (ages 9, 13, and 17/18) were used in the analyses in this thesis because round four (age 20) was not available to researchers when the analyses were conducted. Children and their families were also invited to participate in a COVID-19 survey in December 2020 – this data was not included in the analyses in this thesis because it was released after the analyses in this thesis were conducted.

Children were recruited via primary schools; a list of all the public and private schools in Ireland was generated and, of those schools, 3,177 had 9-year-olds in attendance. One thousand one hundred and five schools were selected after stratification on five characteristics: county, gender mix, disadvantaged status, religious denomination, and the total number of 9-year-old pupils. The aim was to recruit all 9-year-olds from the selected schools up to a maximum of 40 students per school. Of the 910 schools that agreed to participate in the study, 57% of children and their families agreed to take part in the study. Households where the child attended a school with disadvantaged status were under-sampled, with a response rate of 42%. A total of 8,568 children and their families were recruited, which reflects approximately 14% of 9-year-olds living in Ireland between August 2007 and May 2008.

Data were collected in the children's schools and their homes. In the school setting, the Principal reported on the general characteristics of the school (e.g., size) and some personal details about themselves (e.g., age, gender, qualifications). The study children's teachers completed one questionnaire on the details of the classroom (e.g., size, teaching methods) along with their personal details, and a second questionnaire which asked questions about the study child (e.g., school readiness, academic performance). The interviewer administered several cognitive tests in the school setting, including the Drumcondra reading and maths tests. Several questionnaires were also administered in the participants' homes, including the primary caregiver, secondary caregiver, and child questionnaires. The primary and secondary caregiver questionnaires included information on household composition, the child's health, the family context, and sociodemographic information. The child questionnaires contained information on their feelings towards school, diet, activities, and their likes and dislikes. Observations were also carried out by the interviewers which recorded information such as how often the respondent asked for clarification, or if the respondent was reluctant to answer a question.

The caregivers and the child completed an additional sensitive questionnaire. Children were asked about the quality of their relationship with their caregivers. Caregivers were asked about the quality of their romantic relationship and their relationship with their child. One of the unique aspects of the GUI data is that it includes secondary caregiver reports, which is optimal for answering my research questions because I am interested in whether family relationship quality impacts the stress associated with family structure transitions; having data from the secondary caregiver means that I can provide a complete account of family functioning and the impact it may have on experiencing a family structure transition.

There are two versions of the GUI data, and they are accessed in different ways. The Anonymised Microdata Files (AMF) include a basic subset of variables from the full dataset and can be accessed through the Irish Social Science Data Archive. The Researcher Microdata Files (RMF) include data from the sensitive questionnaires as well as potentially identifying data, and can only be accessed through the Central Statistics Office (CSO) after attending a training course, signing an agreement, and being appointed as an Officer of Statistics. The data must be accessed via a Research Data Portal, and only by researchers in Ireland. This thesis used the RMF data because this data included the variables from the sensitive questionnaires which provided the best possible data for answering the research questions in this thesis (i.e., the variables on family relationship quality). To adhere to the RMF statistical disclosure guidelines, any cell sizes less than 30 were not reported in this thesis. All the GUI outputs in this thesis were checked and released by the CSO.

2.7 Description of Variables

The overall aim of this thesis is to examine the instability hypothesis through a geographically and culturally diverse lens. There are three variables of interest in the instability hypothesis: family structure transitions, stress, and child outcomes. Below, I will describe each of these variables and how they were conceptualised and measured in this thesis. Additional variables included in the analyses (i.e., control variables, and the family context/family relationship quality variables) will be described in detail in the relevant subsequent chapters.

2.7.1 Family Structure Transitions

In this thesis – and in line with existing research – family structure transitions were defined as a change in household composition caused by a changed in the parents' cohabiting relationship status (e.g., moving from a two-parent family to a single-parent family) (Cavanagh & Fomby, 2019; Hadfield, Amos, et al., 2018; Hadfield, Ungar, et al., 2018). While some of the existing family instability literature includes other types of transitions (e.g., siblings or grandparent transitions) (Mollborn et al., 2012; Perkins, 2017, 2019; Sun & Li, 2014), this thesis, like the majority of the existing family instability literature, focuses exclusively on parental transitions. Parental transitions that were due to parental death were also excluded, because they are a conceptually different type of transition than what this thesis is investigating.

In both the Young Lives and GUI analyses, household rosters were used to determine what family structures children were living in at each round. The household rosters were completed by the child's primary caregiver at all rounds. Family structures were determined by identifying where the child's caregivers and their caregivers' partners (if any) were living (in the same household as the child or not). The variables which indicated the household member's relationship to the child (i.e., parent, parent's partner), their sex (i.e., male or female), and whether they lived in the household were used to identify what family structures children were living in. Children living with at least one parent were classified into one of three parent-headed family structures: two-parent families (both of the child's parents living in the household), single-parent families (one of the child's parents living in the household, regardless of whether the parent had a partner living outside the household), and stepfamilies (one of the child's parents and their romantic partner living in the household). Most children in each of the four Young Lives countries lived in one of these three family structures (Table 2.2.). In the Young Lives countries, the proportion of children living in grandparent-headed, aunt/uncle-headed, and sibling-headed families was also calculated. This is not reported for Ireland because the cell sizes for children living in these family structures are too small ($n <$ 30). When calculating a transition, only the three parent-headed family structures were included (i.e., two-parent families, single-parent families, and stepfamilies). The family structure transition variable was coded as 1 (yes, experienced a family structure transition) and 0 (no, did not experience a family structure transition). Those in the "yes" (1) category lived in one of the three parent-headed family structures at one round, and then transitioned

to another of the three parent-headed family structure at a later round. So, the possible types of family structure transitions were: two-parent family to single -parent family, two-parent family to stepfamily, single-parent family to two-parent family, single-parent family to stepfamily, stepfamily to single-parent family, or stepfamily to two-parent family. Those in the "no" (0) category remained in a stable two-parent family, single-parent family, or stepfamily throughout the study.

Table 2.2.

Percentage of Children Living in each Family Structure at Round One (Age 1) in Ethiopia, India, Peru, and Vietnam

	Ethiopia	India	Peru	Vietnam
Two-parent family	84.0	99.0	85.1	96.6
Single-parent family	12.7	0.5	13.5	2.4
Stepfamily	0.5	0.0	0.4	0.6
Grandparent-headed household	2.1	0.2	0.6	0.4
Sibling-headed household	0.1	0.0	0.0	0.0
Aunt/uncle-headed household	0.3	0.0	0.1	0.0

2.7.2 Stress

The instability hypothesis theorises that family structure transitions are stressful for those who experience them, but it does not define the type of stress that is associated with these transitions. Therefore, studies which test the instability hypothesis use a range of stressors which include: parenting stress, caregiver and child functioning, family functioning, residential mobility, school mobility, and financial stress (Hadfield, Amos, et al., 2018). In this thesis, two measures of stress were used: financial stress and parenting stress. A financial stress mediator variable was used in the analyses where family context (i.e., household size, multigenerational households, and extended kin households) moderated the family structure transition – stress relationship. A parenting stress mediator variable was used in the analyses where family relationship quality moderated the family structure transition – stress relationship. These two conceptualisations of stress were chosen because they made the most theoretical sense when answering the research aims in this thesis, they are the two most

common conceptualisations of stress in the instability hypothesis literature (Hadfield, Amos, et al., 2018), and these variables play to the strengths of the datasets. That is, the Young Lives study has a high-quality financial stress variable because it is a study of childhood poverty, and the GUI study has a high-quality parenting stress variable because it is a study of family life in Ireland.

2.7.2.1 Financial Stress

In both the Young Lives and the GUI analyses, stress was conceptualised using a financial stress variable. In the Young Lives analyses, the wealth index variable was used, which is a multidimensional measure of socioeconomic status that assesses households on three primary caregiver-reported indicators of wealth: housing quality (e.g., main material of the walls), access to services (e.g., access to electricity), and country-specific household items (e.g., ownership of common household items such as a mobile phone) (Briones, 2017). The wealth index variable produces a score from 0 to 1, with a higher score indicating higher socioeconomic status and, therefore lower financial stress. The same variable was used at all rounds and in all four countries. In the GUI analyses, the primary caregiver-reported equivalised household income variable was used which categorises households into income deciles. Households in the bottom 10% of income are in decile one, and household in the top 10% of income are in decile ten. A higher decile indicates a higher household income, and therefore lower financial stress.

2.7.2.2 Parenting Stress

In the GUI analyses, stress was also conceptualised using a parenting stress variable. This was measured using a six-item version of the Parental Stress Scale (Berry & Jones, 1995), which has good reliability in the GUI sample (Murphy et al., 2019; Thornton et al., 2016). The full 18-item scale measures both positive and negative aspects of parenting, but the six-item short form measures only the negative/stressful aspects of parenting. The scale assesses the primary caregiver's feelings about their parenting role (e.g., "Caring for my child takes more time and energy than I have to give", "The major source of stress in my life is my child"). Items are rated on a five-point Likert scale from 1 (strongly disagree), to 5 (strongly agree). The minimum score was six, and the maximum score was 30, with a higher score indicating higher levels of parenting stress.

2.7.3 Physical Health

In both the Young Lives and GUI analyses, children's general physical health was measured. In the Young Lives data, this consisted of two items: "Compared to other children, would you say [child's] health is the same, better, or worse?", and "In general, would you say [child's] health is very poor, poor, average, good, or very good?". The primary caregiver reported on this from rounds one to four, and the child self-reported at round five. The availability of these items differed depending on the round of data collection and the country. To be consistent across countries, the items that were available at the same rounds across all four countries were used; the "Compared to other children…" variable was used at rounds one and two, the "In general…" variable was used at rounds three and four, and both variables were used at round five (Table 2.3.). Both questions were combined at round five because they were moderately to strongly correlated in all four countries (rs = .3 to .5, ps < .05). The "In general…" item was re-scaled from a three-point scale to a five-point scale to facilitate the combination of the two items in round five. A higher score indicated better physical health (range: Ethiopia: 4.0, India: 4.0, Peru: 4.0, Vietnam: 4.0).

In the GUI data, there was one item which measured children's general physical health: "How has [child's] health been in the past year?" (1 = very healthy, no problems, 2 = healthy, but a few minor problems, 3 = sometimes quite ill, and 4 = almost always unwell). The primary caregiver reported on the child's physical health at all three rounds. A lower score indicated fewer physical health problems, and thus better general physical health.

These types of single-item Likert scales are commonly used to measure children's physical health, and have been proven to be both valid and reliable (Bowling, 2005; Bzostek & Beck, 2011; Idler & Benyamini, 1997). They have also been used as measures of physical health in the family instability literature (e.g., Bramlett & Blumberg, 2007; Bzostek & Beck, 2011; Coley et al., 2015; Guidubaldi & Cleminshaw, 1985; Schwartz et al., 1995). A possible disadvantage of single-item measures is that it may be difficult to be certain that the respondents are reporting on their physical health, rather than other aspects of health such as mental health. However, evidence shows that when individuals are asked to rate their general health, they most often report on their *physical* health (Krause & Jay, 1994). Furthermore, in the Young Lives and GUI questionnaires, these items appear in the context of other physical health questions (e.g., physical injuries, long-term health problems), which allows for greater certainty that the respondents were reporting specifically on their physical health.

Table 2.3.

Physical Health Items Used in the Young Lives and GUI Analyses

Items	Ethiopia					India					Peru					Vietnam					Ireland		
	R1	R2	R3	R4	R5	R1	R2	R3	R4	R5	R1	R2	R3	R4	R5	R1	R2	R3	R4	R5	R1	R2	R3
Compared to other children of this age would you say [child's] health is the same, better, or worse?	P	P			C	P	P			C	P	P			C	P	P			C			
In general, would you say [child's] health is very poor, poor, average, good or very good?			P	P	C			P	P	C			P	P	C			P	P	C			
How has [child's] health been in the past year?																					P	P	P

Note. P: the item was reported by the child's primary caregiver. C: the item was self-reported by the child.

2.7.4 Educational Achievement

In the Young Lives analyses, the Peabody Picture of Vocabulary test (PPVT) (Dunn & Dunn, 1997) was implemented at every round. The PPVT was originally designed to measure children's English vocabulary, but has since been updated and was translated into the main languages in each of the Young Lives countries (Leon & Singh, 2017). Due to difficulties with translation, Peru was the only country where all the items were retained because the Spanish version of the test was used. In Ethiopia and India, around 25% of the total number of items were selected, and in Vietnam, around 33% were selected (Leon & Singh, 2017). The test is untimed and is administered individually and verbally. It is norm-referenced, whereby the child selects a picture which best describes the meaning of the word spoken by the examiner (Leon & Singh, 2017). Because the number of items differed between rounds and across countries, the PPVT was standardised using z-scores. Z-scores were used instead of making the scores out of the same denominator, because the models would not converge when this method was used and so the parameter estimates generated were unreliable. Therefore, the analyses shows whether children change in relation to other children over time (i.e., whether they score above or below the sample average at different rounds), rather than whether their raw score increases or decreases over time. As z-scores were used, the mean is zero.

In the GUI analyses, two discrete facets of educational achievement were measured: literacy and maths. The Drumcondra reading vocabulary and mathematics tests were used at round one (age 9) and two (age 13), and they were completed in the school setting. These tests were devised specifically for Irish school children and are linked to the national curriculum. Logit scores were used in the analyses because they account for the difficulty of the questions answered, rather than solely the number of questions answered (Williams et al., 2018). The cognitive vocabulary and mathematics tests were used at round three (age 17/18), and this was completed in the Young Person's home. Scores at round three were standardised using z-scores to be consistent with round one and two. As z-scores were used, the mean is zero.

2.7.4.1 Rationale for Measuring Physical Health and Educational Achievement

In addition to physical health and educational achievement, a number of other developmental outcomes have been associated with experiencing family instability, including children's

wellbeing and internalising and externalising symptoms, and their likelihood of enrolling and completing college and having a pre-marital birth (Davies et al., 2019; Fomby & Cherlin, 2007; Fomby, 2013; Fomby & Bosick, 2013; Hampden-Thompson & Galindo, 2015; Wu & Martinson, 1993). Of the various outcomes studied in the existing literature, physical health and educational achievement were chosen in this thesis because the variables were consistently available at every round of data collection, allowing me to longitudinally examine the impact of family structure transitions on children's development. These outcomes are also particularly pertinent when studying family instability in LMIC contexts. Some children living in LMICs have their physical health challenged by a multitude of social and environmental factors (Bell et al., 2013; Blum & Boyden, 2018; Vostanis, 2017); family instability could be an additional threat to their health. From a policy perspective, it would be beneficial to understand if, and the extent to which, family instability is a determinant of children's health, as this knowledge could feed into policy and interventions in this area. Studying the impact of family instability on children's educational achievement is also of particular interest because educational achievement is a critical determinant of health and likelihood of experiencing poverty (Nature, 2020; UNESCO, 2017). Thus, if family instability negatively impacts children's educational achievement, this could have broader knock-on effects which may push these families further into unfavourable circumstances.

2.8 Statistical Analyses

In this section, I will describe some statistical techniques that could be used to investigate the effects of family structure transitions. The most frequently used statistical technique in the instability hypothesis literature is a regression analysis (e.g., Bachman et al., 2011; Bzostek & Beck, 2011; Fomby & Osborne, 2017; Hampden-Thompson & Galindo, 2015; Heard, 2007; Krohn et al., 2009; Lacey et al., 2013; Langenkamp & Frisco, 2008; Osborne & McLanahan, 2007; Schoon et al., 2012; Sun & Li, 2014; Sweeney, 2007; Waldfogel et al., 2010; Weaver & Schofield, 2015; Wu & Chiang, 2014; Zito & De Coster, 2016). Studies using a regression analysis aim to test whether family structure transitions are associated with stress, and whether stress is associated with children's outcomes, to identify whether stress mediates the family structure transition – child outcome relationship. Most of the studies using this statistical technique identify whether a family structure transition occurred during the first few rounds of a study, and then test whether these transitions predict children's outcomes at a later round. For example, Fomby (2013) identified whether children who

experienced a family structure transition between birth and age 14 differed in terms of college enrolment and completion at age 24 compared with those who had not. Thus, they examine whether ever experiencing a family structure transition from birth through adolescence is associated with worsened outcomes for children at a future timepoint, rather than examining whether children's outcomes change over time as a function of experiencing a transition. Opting for this type of analytic technique could be due to limitations of the datasets used, which restrict the ability to identify family structure transitions and/or children's outcomes at each round, for example perhaps data was not collected on the outcome variable of interest until the child was older. This makes the Young Lives and GUI datasets particularly attractive, because they both include a household roster to identify family structure transitions, and they include data on children's outcomes at all rounds of data collection. This allowed me to identify whether a change in family structure had taken place between rounds (e.g., between round one and two), and observe whether these changes are associated with children's outcomes at a subsequent round (e.g., at round two), thus maximising the use of the longitudinal datasets.

Identifying the association between family structure transitions and outcomes over time would violate a critical assumption of regression analysis: the assumption of independence. In longitudinal data, participants' scores – particularly those which are closer together in time – are likely to be correlated, and so are inherently not independent. This could be why previous studies tend to assess the impact of family structure transitions at one future timepoint rather than over time, because it negates violating the assumption of independence. However, to test the impact of transitions on children over time, longitudinal data which assess children at multiple timepoints were required, and therefore so was a statistical technique which does not require data to be independent.

In addition to a regression analysis, there are a number of other potential statistical methods that could be used to examine the impact of family structure transitions on children. For instance, a t-test could be conducted to compare the outcomes of children who have and have not experienced a family structure transition. However, this analysis focuses on between-group differences, and so if any statistically significant effects are found, they could be due to these groups having fundamentally different characteristics rather than the transition itself. Thus, this method does not account for the selection hypothesis (Wu & Martinson, 1993). Another potential method of analysis is a two-way mixed analysis of variance (ANOVA). In

this analysis, you could determine the main effect of between-subjects independent variable (i.e., family structure transitions), the main effect of the within-subjects independent variable (i.e., time/round of data collection), and the interaction between the two, to understand if children's outcomes change over time depending on if they have or have not experienced a transition. A limitation of this method is that it requires balanced data across rounds of data collection, which is a particularly challenging criteria to fulfil in large-scale longitudinal studies which span several years or decades. Below, I will describe the statistical method used in this thesis, and explain why this is the best possible method to investigate the pervasiveness and consequences of family structure transitions over time.

2.8.1 Linear Mixed Models

An analytic technique which allowed me to effectively address my research aims is longitudinal multilevel modeling using Linear Mixed Models (LMMs). This method is appropriate because of the naturally nested data structure: time (Level 1) is nested within participants (Level 2). In comparison to other potential methods of analysis, LMMs are particularly advantageous for several reasons. First, LMMS do not assume that data are independent, which is ideal for longitudinal data analysis where individual's scores are correlated from one round to another. Second, LMMs allow you to compare children to *themselves* over time, rather than solely focusing on comparing those who have experienced a family structure transition with those who have not. This within-person comparison allows you to naturally control for fundamentally different characteristics which may be driving differences in children's outcomes that are not a family structure transition. For example, where a child goes to school could be driving differences in children's outcomes, but because you are comparing children to themselves before and after experiencing a transition, you are naturally controlling for some of those between-person characteristics (i.e., you are naturally accounting for the selection hypothesis (Wu & Martinson, 1993)).

Further, comparing children to themselves over time allows you to compare the outcomes of those who have and have not experienced a family structure transition without taking a deficit-comparison approach. That is, much of the existing literature compares the outcomes of children living in stable two-parent families with those living in single-parent or cohabiting families. Whilst some research shows that children living in two-parent families

experience better outcomes than those who do not (e.g., Augustine & Kimbro, 2015; Bramlett & Blumberg, 2007; Devor et al., 2016; Harknett, 2009; Liu & Heiland, 2007), the instability hypothesis suggests that *changes* in family structure may matter more than family structure itself (Fomby & Cherlin, 2007; Wu & Martinson, 1993). If children never experienced changes in their family structure, this static method of comparison (i.e., two-parent families compared to other family structures) would be appropriate. But, we know that many children will experience a change in their family structure throughout childhood (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017; Smock & Schwartz, 2020), so it is important to use data and analytic techniques which capture this reality. Some studies go beyond comparing children living in different family structures by comparing children living in stable family structures (i.e., children living in two-parent, single-parent, and stepfamilies who have not experienced a transition) with children living in unstable families (i.e., children living two-parent, single-parent, and stepfamilies who have experienced a family structure transition) (e.g., Bzostek & Beck, 2011). Although this method captures family instability rather than family structure, it also uses a between-person comparison and neglects the fact that there might be fundamental differences between those who have and have not experienced a transition, and the possibility that those currently living in a stable family structure could experience family instability in the future.

LMMs can also handle missing or unevenly spaced data (Shek & Ma, 2011), which is ideal for repeated measures designs that might be prone to attrition. However, attrition in the Young Lives study was exceptionally low for a study of its size. In fact, one of the major strengths of the Young Lives data is that the attrition rates "are the lowest ever reported in the longitudinal studies literature" (Outes-Leon & Dercon, 2008, p. 8). Attrition rates from round one to five (ages 1 to 15) were: 4.5% in Ethiopia, 3.0% in India, 8.2% in Peru, and 2.3% in Vietnam. Children who left the study at any time were more likely to be impoverished and born to single-parent families in all four countries (ps < .05), which is typical in cohort studies (Leturcq & Panico, 2019). In the GUI study, 74% of households who were included in round one were followed up until round 3 (Murphy et al., 2018). Similar to the Young Lives data, households were more likely to drop out if they had lower income and lived in a single-parent family. Families who were categorised as having lower social class and where the primary caregiver was less educated were also more likely to drop out. That being said, LMMs do not use listwise deletion, so these children are still included in the analytic sample

and contribute to the models, they just have fewer rounds of data contributing than the other participants.

2.8.2 Analysis Plan

Above, I have described the most optimal method of analysis for addressing my overall research aim. I will now outline a more detailed analysis plan for each of the three aims. All of the analyses were conducted in IBM SPSS Statistics version 25, aside from determining children's family structures and family structure transitions which was calculated in Microsoft Excel.

2.8.2.1 Aim 1: Analysis Plan

The first aim of this thesis was to identify the prevalence of family structure transitions in LMICs. This aim was addressed through the analysis of four rounds (ages 1 to 12) of the Young Lives data. First, I determined what family structures children were living in at each round. I did this using conditional logic statements in Microsoft Excel to determine whether children were living with both of their parents (two-parent family), one of their parents without another parent or romantic partner living in the household, regardless of whether they have a romantic partner living outside of the household (single-parent family), or one of their parents and their parent's partner (stepfamily). I also determined whether children were living in grandparent-headed families, aunt/uncle headed-families, and sibling-headed families, but these family structures were not included when counting the prevalence of family structure transitions because this thesis focuses specifically on transitions involving the child's parents. To identify where the children's parents were living, household rosters were used which were completed by the child's primary caregiver at all rounds and countries. Variables which indicated the household member's relationship to the child (i.e., parent, parent's partner), their sex (i.e., male or female) and where they lived (in the same household as the child or not) were used.

Once I had determined what family structures children were living in at each round, I used conditional logic statements to determine whether their family structure changed from one round to another (i.e., whether they experienced a family structure transition between round one and two, round two and three, and so on). Finally, I ran a frequency analysis in IBM

SPSS Statistics (SPSS) (version 25) to determine: 1) the proportion of children living in each family structure at each round, 2) the proportion of children experiencing a family structure transition between each round, and 3) the total proportion of children experiencing at least one family structure transition across all four rounds. In addition, I also identified the most common type of family structure transition, and between what ages this type of transition most commonly occurred. The Young Lives prevalence estimates were validated using monthly union history calendar data from the nationally representative Demographic and Health Survey (DHS) which also samples children living in Ethiopia, India, Peru, and Vietnam. Prevalence estimates from the Young Lives countries were then put into context by comparing them with estimates on the prevalence of family structure transitions by age 12 in 17 high- and upper-middle-income countries (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017). I also determined the prevalence of family structure transitions using the GUI data, but these estimates were not compared with the Young Lives or comparison country estimates because the GUI data covers a different age range (ages 9 to 17/18 vs. birth/ages 1 to 12).

2.8.2.2 Aim 2: Analysis Plan

The second aim of this thesis was to determine whether family structure transitions were associated with children's physical health and educational achievement in LMICs. Five rounds (ages 1 to 15) of the Young Lives data were used to address this aim in order to include the maximum amount of data possible. As a high-income country comparison, I also identified whether family structure transitions were associated with children's physical health and educational achievement in Ireland. A series of LMMs were run, first with family structure transitions predicting children's physical health, and then with family structure transitions predicting children's educational achievement. A number of demographic and environmental characteristics were then controlled for in the models – these will be described in detail in Chapter 3.

2.8.2.3 Aim 3: Analysis Plan

The third aim of this thesis was two-fold: 1) to test the instability hypothesis in LMICs, and 2) to identify risk and protective factors in the family structure transition – stress relationship.

First, this involved testing the instability hypothesis by including stress as a mediator to the family structure transition – child outcome relationship. In the Young Lives analysis, stress was conceptualised as financial stress (i.e., the wealth index variable). In the GUI data, stress was conceptualised as financial stress (i.e., equivalised household income) and parenting stress (i.e., the six-item version of the Parental Stress Scale (Berry & Jones, 1995)). The analyses were run separately for each of the GUI stress variables. Parenting stress was not included in the Young Lives analysis because this variable – or any other suitable type of psychological stress variable – was not available in the dataset.

Once stress has been included to the models as a mediator, I added family context and family relationship quality variables as moderators to the family structure transition – stress pathway to identify whether they influenced the stress associated with family structure transitions. In the Young Lives analyses, household size (a count of the number of people living in the household), multigenerational household (whether the child was living in the same household as their grandparent), and extended kin household (whether the child was living in the same household as their aunt/uncle) were included as moderators. In the GUI analysis, household size was also included as a moderator. Multigenerational household and extended kin household were not included as moderators, because the number of people who lived in these households who experienced a family structure transition was too small ($n < 30$). Several additional moderators were included in the GUI analysis to examine the influence of child-caregiver and interparental relationship quality on parenting stress: interparental arguing, interparental shouting, interparental physical abuse, child-primary caregiver conflict and closeness, child-secondary caregiver conflict and closeness, primary-caregiver relationship satisfaction, and secondary-caregiver relationship satisfaction.

2.8.2.4 Correcting for Multiple Testing

I did not correct for multiple testing – that is, the possibility of identifying a statistically significant effect where one does not exist (Type I error) – in my analyses for several reasons. First, the decision on how many analyses to include in the correction is an arbitrary one (Barnett et al., 2022). For example, should I combine every analysis run in all five datasets into one correction, or should I apply a correction separately for each dataset? Should I correct for all the analyses run in this thesis, or should I apply a separate correction for each

aim? There are no agreed rules on where the cut-off lies, and so the decision on the number of analyses to include would have been subjective. Second, it is more important to look at the size of an effect rather than the statistical significance when determining how meaningful an effect is (Sullivan & Feinn, 2012). This is particularly critical in large datasets which have strong statistical power to detect effects where they exist, and so it is easier to identify statistically significant relationships that have very small effects (Sullivan & Feinn, 2012). Third, there is not a consensus in the community about whether correcting for multiple testing is necessary, particularly regarding more stringent corrections such as the Bonferroni correction – the most common type of correction – which can inflate the possibility of Type II errors (Barnett et al., 2022; Streiner & Norman, 2011). For these reasons, I will report both the statistical significance and the size of the effects to provide a transparent presentation of the findings.

2.9 Conclusion

The Young Lives and GUI datasets not only provided me with the variables required to address my research aims, but they also allowed me to conduct the types of statistical analyses desired to answer these aims. In the forthcoming chapters, I will address each of the three aims in turn. The next chapter begins by addressing research aims one and two: identifying the prevalence and consequences of family structure transitions in LMICs.

Chapter 3: The Prevalence and Consequences of Family Structure Transitions

3.1 Introduction

This chapter will address the first and second aims of the thesis: to identify the prevalence and consequences of family structure transitions in low- and middle-income countries (LMICs). Specifically, I will focus on children's general physical health and educational achievement. To compare these findings with a high-income country that is not currently included in any family instability literature, I will also identify the prevalence and consequences of family structure transitions in Ireland. These aims were addressed through the analysis of two large-scale, longitudinal datasets: Young Lives and Growing Up in Ireland (GUI). This chapter begins by outlining the existing literature on the prevalence and consequences of family structure transitions. The Young Lives and GUI datasets will be described, along with the statistical analyses conducted. The chapter concludes with a discussion of the results, the limitations of the analyses, and a conclusion.

3.1.1 The Prevalence of Family Structure Transitions

Family structure transitions are changes in household composition caused by a change in the cohabiting relationship status of the parents (e.g., moving from a two-parent family to a single-parent family following a divorce or separation) (Cavanagh & Fomby, 2019; Hadfield, Ungar, et al., 2018). The majority of the family structure transition research focuses on high-income countries, particularly the United States and the United Kingdom (Hadfield, Amos, et al., 2018). In many high-income countries, the familial landscape has changed dramatically in recent decades; 56% of children in the United States and 32% of children in the United Kingdom born to married parents now experience at least one family structure transition by age 12 (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017; Santesteban-Echarri et al., 2016; Smock & Schwartz, 2020). By contrast, children in Belgium, Spain, and Poland born to married parents are much less likely to experience a family structure transition by age 12 (8%, 5%, and 6%, respectively) (DeRose, Lyons-Amos, et al., 2017). Thus, the prevalence of family structure transitions differs greatly among high-income countries.

Although it is widely acknowledged that marriage and parenting cultures vary tremendously around the world, we have limited evidence on how much the prevalence of transitions varies among LMICs, nor how it compares to high-income countries. Given that approximately 90% of the world's children live in LMICs (Blum & Boyden, 2018), this is a substantial gap – we know little about the prevalence of family structure transitions for the vast majority of the world's children. DeRose and colleagues' (2017) work on family instability across the globe provides a rare comparison of the proportion of children experiencing a family structure transition by age 12 in 17 countries. However, all of these were high- (13 countries) or upper-middle-income (4 countries). There is an unfortunate lack of information on transitions for families living in LMIC contexts.

3.1.2 The Consequences of Family Structure Transitions

The consequences of family structure transitions in LMICs have also received disproportionately little attention relative to high-income countries, even though some of the mechanisms through which transitions affect children are likely to be pertinent globally. The predominant theoretical framework in the family structure transition literature is the instability hypothesis, which suggests that transitions cause stress which, in turn, leads to a host of negative child outcomes (Fomby & Cherlin, 2007; Wu & Martinson, 1993). Research conducted in high-income countries suggests that family structure transitions can lead to worsened physical health, including an increased risk of obesity, asthma, and worse general physical health (Augustine & Kimbro, 2015; Bzostek & Beck, 2011; Wickrama, et al., 2013), and poorer educational outcomes, including a decreased likelihood of high school and college enrolment, worse maths and reading scores, and poorer verbal ability (Cooper et al., 2011; Devor et al., 2018; Fomby, 2013; Perkins, 2019; Sun & Li, 2011).

A very small number of studies have examined how family instability impacts children living in LMICs. These studies show that children who have experienced family instability have an increased risk of mortality, and lower wellbeing, cognitive ability, academic performance and aspirations than children who do not (Gaydosh, 2017; Hu, 2020). Most studies conducted in LMICs, though, examine the impact of living in non-married family versus married family structures. These studies show that living in single-parent, divorced, or cohabiting families increase children's risk of mortality, anaemia, stunted growth, being underweight, and living

in poverty, and decrease children's likelihood of school enrolment (Bhuiya & Chowdry, 1997; Clark & Hamplova, 2013; Cuesta et al., 2017; DeRose, Salazar-Arango, et al., 2017; Ntoimo & Odimegwu, 2014; Schmeer, 2013; Smith-Greenaway, 2020; Thiombiano et al., 2013). These studies tell us little about how children's outcomes change over time, because they focus on between-person rather than within-person differences. For example, they compare the outcomes of children born to married versus divorced mothers. Examining the impact of children's static family structure at one timepoint does not reflect the reality that many children experience changes in their family structure throughout childhood (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017). The instability hypothesis theorises that these changes – rather than being in one family structure or another at a given point in time – are what is harmful to children's outcomes (Fomby & Cherlin, 2007; Wu & Martinson, 1993). That is, family structure *transitions* may matter more than family *structure*, because the transition leads to stress, and this stress leads to negative outcomes for children. Further, this research does not address the selection hypothesis (Wu & Martinson, 1993); children living in non-married family structures may do worse than those who live with two married parents because of innate differences between the parents. That is, these differences may have relatively little do with what family structures children are living in, but rather differences in parents who are married versus those who are not (e.g., their parenting style, income etc).

3.1.3 Research Aims and Hypotheses

The first aim of this chapter is to identify the prevalence of family structure transitions in four LMICs: Ethiopia, India, Peru, and Vietnam. The second aim is to identify the consequences of family structure transitions for children's general physical health and educational achievement in those four LMICs, as well as in one high-income country (Ireland). In line with some existing research conducted in high-income countries (e.g., Bzostek & Beck, 2011; Cooper et al., 2011), I hypothesise that children who have experienced a family structure transition will have worse general physical health and educational achievement than those who have not. I also hypothesise that the impact of family structure transitions will be worse in countries with a lower prevalence of transitions, because transitions are less normative there, and thus potentially more stressful (Fomby et al., 2010; Perkins, 2019; Ryan & Claessens, 2013).

To address both aims, data from the Young Lives study and GUI study will be used. The Young Lives data allows me to identify the prevalence of family structure transitions in four countries in the Global South. Although the GUI data spans a different developmental period, and so the prevalence estimates cannot be directly compared with the Young Lives estimates, using this dataset allows me to examine the effects of family structure transitions in the Irish context for the first time. Combined, these two datasets add to the literature by broadening our understanding of the prevalence and consequences of family structure transitions across a range of geographical and cultural contexts.

3.2 Methods

3.2.1 Data

3.2.1.1 The Young Lives Study

The younger cohort data from the Young Lives study ($N = 8,062$ study children and their primary caregivers; percentage of children male at round one: 52.5% in Ethiopia, 53.8% in India, 50.0% Peru, and 51.5% in Vietnam) was used. Young Lives is an international study of childhood poverty in Ethiopia, India, Peru, and Vietnam (Boyden, 2018). When identifying the prevalence of family structure transitions, rounds one to four (ages 1 to 12) were used. This was so that the Young Lives prevalence estimates could be compared with well-established prevalence estimates from 17 high- and upper-middle-income countries on the number of children experiencing family structure transitions by age 12 (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017). These available statistics focus exclusively on children born to married mothers, so it is likely that they produced conservative estimates of transitions, since being born into a single-parent or cohabiting family seems to increase the likelihood of experiencing a family structure transition (Brown et al., 2016; Cavanagh & Huston, 2006; Gaydosh & Harris, 2018; Gold et al., 2020; Raley & Sweeney, 2020; Ryan & Claessens, 2013). When examining the effects of family structure transitions on children's general physical health and educational achievement, rounds one to five (ages 1 to 15) of the Young Lives data were used in order to include the maximum amount of data possible.

Due to the large gaps between rounds in the Young Lives data (approximately three-to-four years), monthly union history calendar data from the Demographic and Health Surveys (DHS) was used to validate these prevalence estimates (Oldroyd et al., 2021). The DHS are household surveys which collect population, health, and nutrition data in over 90 countries. The data used in this thesis comes from: the 2005 Ethiopia DHS, the 2005-06 India DHS, the 2012 Peru DHS, and the 2002 Vietnam DHS. The Vietnam data are a nationally representative sample of ever-married women aged 15 to 49. In the other three countries, the data are nationally representative samples of *all* women aged 15 to 49. Union history calendars, which collect retrospective month-by-month data on the mother's romantic relationships, were used to determine changes in family structure. The union history calendars date back approximately six years from the interview date, and therefore it was not possible to measure family structure transitions in the first 12 years of life for the same children. Instead, transitions in the first six years of life were measured using children less than 1 year old at the beginning of the union history data (age 6 at interview), and transitions from age 6 to 12 using children aged 12 at interview. Combining these measures into a single estimate for the first 12 years of life is equivalent to assuming that the probability of later transitions is independent of earlier ones, but it provides the best possible estimate from the six-year union histories. Although family structure transitions are measured differently in the DHS data compared to the Young Lives data, using the DHS data allowed for a validation of the Young Lives prevalence estimates, whilst addressing a major limitation of the Young Lives data (i.e., the large gaps between rounds of data collection).

The Young Lives sample included 8,062 study children aged 1 year old in 2002. When looking at the prevalence of family structure transitions, children who left the household at any of the four rounds were excluded, because I wanted to make sure that children were living in the household when a family structure transition occurred; note though that this is only a very small group of children (Ethiopia: $n = 21$, India: $n = 67$, Peru: $n = 0$, and Vietnam: $n = 19$). Children who experienced the death of a parent(s) were also excluded, because this is quite a different type of transition compared to the types of romantic relationship transitions studied in this thesis (Ethiopia: $n = 177$, India: $n = 116$, Peru: $n = 46$, and Vietnam: $n = 64$). I further excluded children who only had one round of household data, because I could not determine whether they had experienced a family structure transition (Ethiopia: $n = 87$, India: $n = 62$, Peru: $n = 62$, and Vietnam: $n = 20$). Finally, children who only had two non-consecutive rounds of household data were excluded, because the gaps

between these rounds were so large that I could not accurately estimate the prevalence of transitions for these children (Ethiopia: $n = 4$, India: $n = 0$, Peru: $n = 14$, and Vietnam: $n = 2$). After excluding these participants, the final sample used for estimating prevalence of family structure transitions was $N = 7,310$ ($N = 1,715$ in Ethiopia, $N = 1,769$ in India, $N = 1,930$ in Peru, and $N = 1,896$ in Vietnam).

When looking at the effects of family structure transitions on children's general physical health and educational achievement, the same exclusion criteria as above was used, but the number of children who fit each criteria is different because of the inclusion of a fifth round of data. The number of children who left the household at any of the five rounds was still very small (Ethiopia: $n = 49$, India: $n = 68$, Peru: $n = 3$, and Vietnam: $n = 31$). The number of children who experienced the death of a parent was slightly larger than the previous analytic sample (Ethiopia: $n = 211$, India: $n = 166$, Peru: $n = 71$, and Vietnam: $n = 84$). The number of children who only had one round of household data was: Ethiopia: $n = 87$, India: $n = 61$, Peru: $n = 60$, and Vietnam: $n = 18$. Finally, the number of children who only had two non-consecutive rounds of household data was: Ethiopia: $n = 4$, India: $n = 0$, Peru: $n = 12$, and Vietnam: $n = 2$. After excluding these participants, the final sample used to examine the effects of family structure transitions on children's general physical health and educational achievement was $N = 7,143$ ($N = 1,650$ in Ethiopia, $N = 1,728$ in India, $N = 1,895$ in Peru, and $N = 1,870$ in Vietnam).

3.2.1.2 The Growing Up in Ireland (GUI) Study

The child cohort data from the GUI study was used, which is the largest study of children and families in Ireland. The sample includes 8,568 children (51.4% female at round one) and their families. Data collection began in 2008 when the study children were 9 years old, and sampled them again at ages 13, 17/18, and 20. Rounds one to three (ages 9 to 17/18) were used in the analyses, because round four (age 20) was not available to researchers at the time of analysis. The study collects questionnaire data from the study child, their primary and secondary caregivers, their teacher, and the principal of their school. Additional "sensitive" questionnaires were also administered to the child and their caregivers. The child and primary caregiver questionnaires were used to determine household composition and children's general physical health and educational achievement. The child's primary caregiver reported

on their child's general physical health at all three rounds. The child completed the educational achievement measures at all three rounds.

When identifying the prevalence and consequences of family structure transitions, children were excluded based on four criteria. First, children who only had one round of household data were excluded, because I could not determine whether they had experienced a change in family structure ($n = 879$). Second, children who only had two, non-consecutive rounds of household data were excluded, because the gaps between these rounds were so large (approximately 8 years) that I could not accurately determine family structure transitions for these children ($n = 161$). Children whose main address was not the same as the primary caregiver's address were also excluded to make sure that the child was living in the same household as their parent when a family structure transition occurred (this only occurred at round three, $n = 40$). Finally, children who experienced the death of a parent were excluded, because parental death is a conceptually different type of family transition than the one in which I am interested ($n = 85$ at round two, $n = 162$ at round three). After excluding these participants, the final analytic sample was $N = 7,294$.

3.2.2 Measures

3.2.2.1 Family Structure Transitions

In both datasets, the household roster was used to determine what family structures children were living in at each round. Information on each household member's relationship to the study child (i.e., parent or parent's partner), their sex (i.e., male or female), and whether they lived in the household were used. Family structures were identified based on where the mother, father, and their partner/stepparents (if any) were living (in the same household as the study child or not), together with information about who acts as the child's primary caregiver. Using this information, children were classified into three parent-headed family structures: two-parent families (i.e., both of the child's parents live in the household), single-parent families (i.e., only one of the child's parents lives in the household, regardless of whether they that parent has a romantic partner who lives outside of the household), and stepfamilies (i.e., one of the child's parents and their partner lives in the household). In all

four of the Young Lives countries, the vast majority of children lived in one of these three parent-headed family structures (Table 3.2.).

In the Young Lives data, children who were not living in parent-headed family structures were classified into grandparent-headed, sibling-headed, and aunt/uncle-headed family structures. In the GUI data, the proportion of children not living in parent-headed family structures was so small that other family structures were not determined. In line with the existing family structure transition literature (e.g., Cavanagh & Fomby, 2019; Hadfield, Amos, et al., 2018), I classified a family structure transition as a change in the cohabiting relationship status of the parents. Therefore, I only counted a change as a family structure transition if it involved one of the three parent-headed family structures (i.e., two-parent families, single-parent families, and stepfamilies).

3.2.2.2 General Physical Health

Given the large gaps between each round of data collection in both datasets (three-to-four years) it makes sense to focus on children's general physical health, because it is unlikely that a transition which happened potentially several years ago would impact more short-term physical health symptoms (e.g., "having a fever"). The two items that measured children's general physical health in the Young Lives data were: "Compared to other children, would you say [child's] health is the same, better, or worse?", and "In general, would you say [child's] health is very poor, poor, average, good, or very good?". The primary caregiver reported on the child's health from rounds one to four, and the child self-reported on their general physical health at round five. Because the availability of these items differed depending on the country and the round of data collection (Oldroyd, 2020), I used the variables that were available at the same rounds across all four countries. The "Compared to other children…" variable was used at rounds one and two, the "In general…" variable was used at rounds three and four, and both of these variables were used at round five (Table 3.1.). The two variables at round five were moderately or strongly correlated in all four countries (rs = .3 to .5, ps < .05). There was a significant, positive correlation between the adjacent physical health items at all rounds, in all four countries (Oldroyd, 2020). A higher score indicated better general physical health.

Table 3.1.

General Physical Health Items Used in the Young Lives Analyses

Items	R1	R2	R3	R4	R5
Compared to other children of this age would you say [child's] health is the same, better, or worse?	P	P			C
In general, would you say [child's] health is very poor, poor, average, good or very good?			P	P	C

Note. P = Primary caregiver reported, C = Child reported.

One item was available which measured children's general physical health in the GUI data: "How has [study child's] health been in the past year?" (1 = very healthy, no problems, 2 = healthy, but a few minor problems, 3 = sometimes quite ill, and 4 = almost always unwell). A lower score indicated fewer physical health problems, and therefore better general physical health. The primary caregiver reported on the child's general physical health at every round.

3.2.2.3 Educational Achievement

The Peabody Picture of Vocabulary Test (PPVT) (Dunn & Dunn, 1997) was used as a measure of educational achievement in the Young Lives data. This measure was originally created to measure children's English vocabulary but was translated into the main languages in each of the Young Lives countries (Leon & Singh, 2017). This test is a norm-referenced measure of vocabulary whereby the child selects a picture which best describes the meaning of the word spoken by the examiner (Leon & Singh, 2017). The test is administered individually and verbally and is untimed. The scores were standardised using z-scores because the number of items included in the test differed across rounds and countries. So, this analysis tells us whether children's educational achievement differs *relative to other children in the sample* over time.

In the GUI analysis, maths and literacy achievement were measured separately. At rounds one (age 9) and two (age 13), the Drumcondra reading vocabulary and mathematics tests were used. These tests were created specifically for Irish school children and are linked to the national curriculum. Logit scores were used in the analysis because they account for the difficulty of the questions answered (Williams et al., 2018). At round three (age 17/18) the

cognitive vocabulary and mathematics tests were used. Scores were standardised in round three using z-scores to be consistent with the standardised scores used in round one and two.

3.2.2.4 Control Variables

In the Young Lives analysis, I controlled for the number of "shocks" the child's household experienced at each round. The "shocks" scale is a checklist of events that could have affected the household (e.g., "imprisonment of household member"). Eight of the 44 items from the checklist that measured environmental events were used (e.g., "too much rain or flooding", "pests or diseases affecting livestock") to control for some potential environmental influences on children's outcomes (Groppo & Krähnert, 2015; Kousky, 2016). The same items were used in every round in all four countries. Premature birth was also controlled for. The item "was the child born before expected? (i.e. was the child premature)" was used, which was answered by the study child's mother at round one. If the mother answered "yes" (coded as 1), that indicated that the child was born prematurely (the alternative response option was "no", which was coded as 0). This item was the same in all four countries. The sex of the child was controlled for, which was a binary variable with 0 as female and 1 as male. To address the selection hypothesis which states that it is not the family structure itself which influences child outcomes, but rather parental characteristics which underlie both family structure change and the child's outcomes (Wu & Martinson, 1993), mother's education and mental wellbeing were also controlled for. Mother's education was not controlled for in Peru because this variable was not available in this dataset. For both of these variables, the round one variable was used. Mother's education was a binary variable which identified whether they had completed primary education (1) or not (0). Mother's mental wellbeing was derived from the 20-item WHO-recommended self-report questionnaire (SRQ-20) (van der Westhuizen et al., 2016). Young Lives categorized mothers into two groups based on existing research using the SRQ-20 in LMICs: those who identified with seven or less items on the questionnaire (0), and those who identified with eight or more items (1), which indicated a psychiatric morbidity (Escobal & Benites, 2016).

In the GUI analysis with children's physical health as the outcome, the study child's sex (0 = female, 1 = male) and whether the child was born prematurely (0 = not premature, 1 = premature) was controlled for. Smoking during pregnancy (0 = did not smoke, 1 = smoked),

and drinking alcohol during pregnancy (0 = did not drink, 1 = drank during pregnancy) were also controlled for. The child's school was controlled for to account for any effect of the school on children's outcomes. This was a categorical variable, with each number representing a different school. In the GUI analysis with educational achievement as the outcome, the same variables used in the physical health analysis were controlled for, alongside variables which indicate whether the child attended a disadvantaged school. Namely, whether the child attended a school that provided a breakfast club (0 = no, 1 = yes) or free school meals (0 = no, 1 = yes), and whether the school was a Delivery Equality of Opportunities in Schools (DEIS) school (0 = no, 1 = yes). DEIS is an initiative aimed at supporting schools in disadvantaged communities. Whether the study child had a learning difficulty was also control for (0 = no, 1 = yes). In both the GUI physical health and educational achievement analyses, the primary caregiver's education level and depression status were also controlled for in order to address the selection hypothesis (Wu & Martinson, 1993). Primary caregiver's educational achievement was coded from the lowest level of education (1 = none/primary) to the highest level of education (6 = postgraduate qualification). Primary caregiver's depression was a binary variable which indicated whether they had depression (0 = does not have depression, 1 = has depression).

3.2.3 Data Analysis

To identify what family structures children were living in at each round, conditional logic in Microsoft Excel were used to determine whether the child lived with both of their parents (i.e., in a two-parent family), with just one of their parents (i.e., in a single-parent family), or with one of their parents and their parents' romantic partner (i.e., in a stepfamily). A frequency analysis was then conducted in SPSS to determine the proportion of children living in each family structure at each round. To identify whether children had moved between a two-parent family, single-parent family, and stepfamily at each round, conditional logic in Microsoft Excel was used. Finally, a frequency analysis was conducted in SPSS to determine the percentage of children experiencing a move between these three family structures (i.e., a family structure transition) at each round, as well as the total number of transitions each child experienced across all rounds. In addition, I identified the most common type of family structure transition, and between what ages this type of transition most commonly occurred.

To identify whether experiencing a family structure transition from one round to another (e.g., from round one to two) predicted children's general physical health and educational achievement at the subsequent round (e.g., at round two), linear mixed models (LMMs) were used. The predictor of interest in this analysis was family structure transitions (1 = yes, 0 = no). The outcome variables were children's general physical health and educational achievement. The models were run with the intercept centered at the first and last round of data collection (Singer & Willett, 2003). Having the intercept centred at the first or the last round did not affect the pattern of results, so I present the findings with the intercept centered at the final round of data collection (round five in the Young Lives analysis, and round three in the GUI analysis), representing children's general physical health and educational achievement status at the final round of data used in the analyses.

A series of LMMs using maximum likelihood estimation were fit to the data, in which general physical health and educational achievement over time were modelled as a linear function of family structure transitions. Intercepts (general physical health/educational achievement at the final round of data collection included in the analyses) and slopes (trajectories over time) were allowed to vary by participant, apart from in the Young Lives educational achievement analyses where slopes were fixed, because there was not enough between-person variation in the slopes. First, unconditional mean models were run to examine individual variation in the outcomes without accounting for time. Unconditional linear growth models were then run to examine individual variation in the outcomes over time. Finally, the models were run including the predictor (i.e., family structure transitions) and the control variables.

A post-hoc power analysis was calculated for each of the four countries in the Young Lives study and the GUI sample using Soper's (2016/2017) calculator. Sample size for the within-person effects was N multiplied by the number of measurement occasions (five in Young Lives and three in GUI) minus one. Sample size for the between-person effects was the total sample size in each country. Power was calculated accounting for the number of predictor variables and control variables. In all four Young Lives countries, within-person power was 100% to detect a small effect (.02), and between-person power was 99% to detect a small effect (.02). In the GUI sample, within-person power was 100% to detect a small effect (.02), and between-person power was 100% to detect a small effect (.02). This suggests that I had

sufficient statistical power in the samples to detect small within- and between-person effects of family structure transitions on child general physical health and educational achievement.

3.3 Results

3.3.1 Family Structure

First, I identified what family structures children were living in at each round, and the prevalence of family structure transitions in Ethiopia, India, Peru, and Vietnam (aim one). I identified the prevalence of family structure transitions by round four (age 12) rather than round five (age 15) so that I could compare the Young Lives prevalence estimates with well-established estimates on the prevalence of transitions by age 12 in 17 high- and middle-income countries (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017). I also calculated the prevalence of family structure transitions in the GUI dataset, but this is not comparable with the Young Lives or comparison country estimates because it covers a different age range (ages 9 to 17/18 vs. birth/ages 1 to 12). In all four of the Young Lives countries, the most common type of family structure at every round was the two-parent family (see Appendix B for the proportion of children living in each family structure at every round in each country). Single-parent families were the second most common family structure, followed by stepfamilies. Grandparent-headed, sibling-headed, and aunt/uncle-headed households accounted for 9.4% of family structures in Ethiopia, 4.0% in India, 5.5% in Peru, and 3.9% in Vietnam at age 12 (Table 3.2.).

Table 3.2.

Percentage of Children Living in each Family Structure at Round One (Age 1) in Ethiopia, India, Peru, and Vietnam

	Ethiopia	India	Peru	Vietnam
Two-parent family	84.0	99.0	85.1	96.6
Single-parent family	12.7	0.5	13.5	2.4
Stepfamily	0.5	0.0	0.4	0.6
Grandparent-headed household	2.1	0.2	0.6	0.4
Sibling-headed household	0.1	0.0	0.0	0.0
Aunt/uncle-headed household	0.3	0.0	0.1	0.0

I also identified other household characteristics, which included average household size, and the percentage of children living in a multigenerational household (i.e., households that included at least one grandparent) and extended kin households (i.e., households with at least one aunt or uncle) (Table 3.3.). Living in a multigenerational or extended kin household is not mutually exclusive with living in a two-parent family, single-parent family, or stepfamily. That is, a child could live with both of their parents, but also have a grandparent in the household. That child would be classified as living in both a two-parent household and a multigenerational household.

Table 3.3.

Mean Household Size and the Percentage of Children Living in Multigenerational and Extended Kin Households at Age 8 (Ethiopia, India, Peru, and Vietnam) and Age 9 (Ireland)

	Ethiopia	India	Peru	Vietnam	Ireland
Mean household size	6.19	5.44	5.42	4.61	4.77
Multigenerational households (%)	6.6	33.5	14.7	19.4	2.8
Extended kin households (%)	9.0	13.1	11.3	5.6	1.3

Note. Age 8 corresponds with round three of the younger cohort Young Lives data. Age 9 corresponds with round one of the child cohort GUI data. These rounds were selected to facilitate as close a comparison as possible between the Young Lives countries and Ireland. [1]

3.3.2 Family Structure Transitions

I then counted the prevalence of family structure transitions in Ethiopia, India, Peru, Vietnam, and Ireland. A family structure transition involved any change between a two-parent family, a single-parent family, and a stepfamily. In the Young Lives data, the proportion of children experiencing at least one family structure transition by age 12 was highest in Peru (22.0%), followed by Ethiopia (14.8%), Vietnam (7.7%), and India (5.6%) (Figure 3.1.). This corresponds closely with estimates using the nationally representative DHS data: Peru (25.4%), Ethiopia (16.4%), Vietnam (6.2%), and India (5.7%) (Table 3.4.). In the GUI data, the proportion of children experiencing at least one family structure transition between age 9 and 17/18 was 8.3%.

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[1] Results are based on analysis of strictly controlled Research Microdata Files provided by the Central Statistics Office (CSO). The CSO does not take any responsibility for the views expressed or the outputs generated from this research.

Table 3.4.

Prevalence of Family Structure Transitions by Age 12 in the Young Lives and DHS Data

	Young Lives	DHS
Ethiopia (%)	14.8	16.4
India (%)	5.6	5.7
Peru (%)	22.0	25.4
Vietnam (%)	7.7	6.2

In both datasets, most children experiencing a family structure transition had only one transition (Table 3.5.). The most common type of family structure transition in all five countries was the transition from a two-parent family to a single-parent family. This most often occurred between the ages of 1 and 5 in Ethiopia, 5 and 8 in Vietnam, 8 and 12 in India and Peru, and between 9 and 13 in Ireland.

Table 3.5.

Percentage of Children Experiencing at least one Family Structure Transition by Age 12 (Ethiopia, India, Peru, and Vietnam) and Age 17/18 (Ireland)

	Experienced one transition	Experienced two transitions	Experienced three transitions	Total %
Ethiopia ($N = 1,715$)	11.3	3.0	0.4	14.8
India ($N = 1,769$)	4.0	1.4	0.3	5.6
Peru ($N = 1,930$)	18.2	3.5	0.3	22.0
Vietnam ($N = 1,896$)	4.9	2.7	0.1	7.7
Ireland ($N = 7,294$)	7.8	0.5	-	8.3

Note. When calculating the prevalence of family structure transitions in the Young Lives data, four rounds of data were used. Therefore, the maximum number of transitions that I could capture in this analysis was three. When calculating the prevalence of family structure transitions in the GUI data, three rounds of data were used. Therefore, the maximum number of transitions that I could capture in this analysis was two. [2]

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[2] Results are based on analysis of strictly controlled Research Microdata Files provided by the Central Statistics Office (CSO). The CSO does not take any responsibility for the views expressed or the outputs generated from this research.

Figure 3.1.

Percentage of Children Who Experienced At Least One Family Structure Transition From Age One To 12 In Ethiopia, India, Peru, and Vietnam, Compared With Rates in 17 High- and Middle-Income Countries
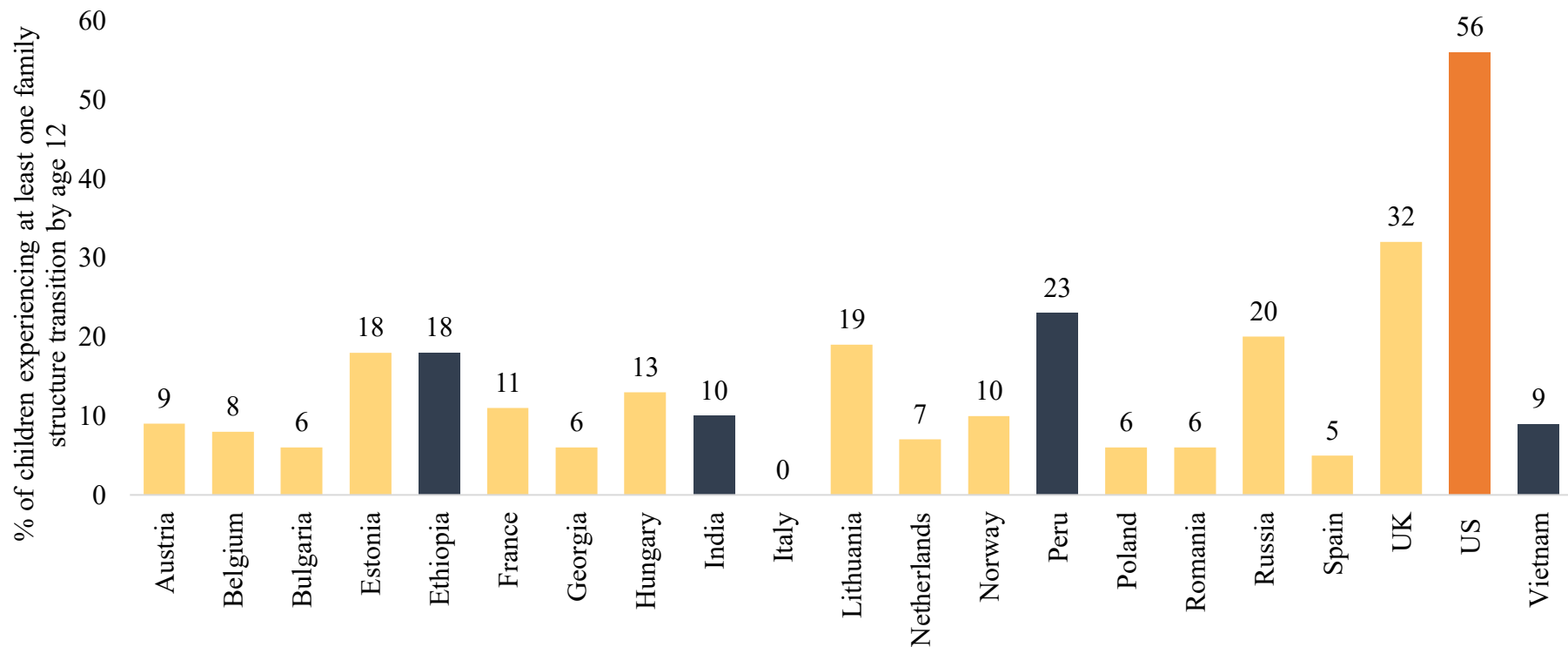
Note. The bars in blue are our prevalence estimates using the Young Lives data. The bar in orange is from Brown et al. (2016), and the bars in yellow are from DeRose, Lyons-Amos et al. (2017). The bars in orange and yellow represent children born to married mothers only, so it is likely that these are conservative estimates of family structure transitions by age 12. To allow for simple comparison with Brown et al.'s (2016) and DeRose, Lyons-Amos et al.'s (2017) estimates, which include parental death as a family structure transition, the Young Lives estimates in this figure are from additional analyses which includes transitions as a result of parental death. The number of children who experienced parental death by age 12 was: Ethiopia: $n = 177$, India: $n = 116$, Peru: $n = 46$, and Vietnam: $n = 64$. Percentages listed above the bars are rounded to the nearest integer, with bars representing exact figures.

3.3.3 General Physical Health

Next, I examined whether family structure transitions were associated with children's general physical health and educational achievement. In the Young Lives analysis, I included the fifth round of data to use the maximum amount of data. This resulted in an increase in the number of children experiencing a family structure transition, but the pattern of results remained the same: children in Peru experienced the highest proportion of transitions by age 15 (25.1%), followed by Ethiopia (17.3%), Vietnam (11.0%), and India (7.9%). In the GUI data, the same number of rounds (three) were included in this analysis as in the previous analysis, so the prevalence of family structure transitions remained the same.

There were no statistically significant differences in general physical health for children who experienced a family structure transition relative to those who did not in any of the Young Lives countries (Table 3.6.). That is, family structure transitions were not related to child general physical health in Ethiopia, India, Peru, or Vietnam. In Ireland, family structure transitions were associated with children's general physical health. Specifically, children who experienced a family structure transition had worse general physical health than those who did not (Table 3.7.).

Table 3.6.

Young Lives Linear Mixed Models Examining the Relationship Between Family Structure Transitions and Child General Physical Health

	Ethiopia (*N* = 1,650)				India (*N* = 1,728)				Peru (*N* = 1,895)				Vietnam (*N* = 1,870)			
	B	*SE*	*t*	*95% CI*	*B*	*SE*	*t*	*95% CI*	*B*	*SE*	*t*	*95% CI*	*B*	*SE*	*t*	*95% CI*
Intercept	4.05**	.03	139.04	3.99, 4.12	3.88**	.04	89.75	3.79, 3.96	3.71**	.02	184.93	3.68, 3.75	3.22**	.03	108.96	3.16, 3.27
Family transition	-.05	.05	-.97	-.15, .05	-.02	.06	-.25	-.14, .11	.01	.03	.28	-.05, .07	-.05	.05	-1.05	-.15, .04
Sex	.05	.03	1.68	-.01, .10	.02	.02	.73	-.03, .06	.01	.02	.35	-.03, .04	.04	.02	1.56	-.01, .09
Premature birth	-.05	.05	-1.04	-.15, .05	-.03	.04	-.66	-.11, .05	.00	.02	.12	-.04, .05	-.01	.04	-.28	-.08, .06
Shocks	-.03**	.01	-2.61	-.05, -.01	-.03*	.01	-2.21	-.06, -.00	-.03**	.01	-2.61	-.05, -.01	-.02*	.01	-2.10	-.05, -.00
Mother's mental health	-.05	.03	-1.63	-.11, .01	-.02	.03	-.94	-.08, .03	-.09***	.02	-4.23	-.13, -.05	-.17***	.03	-5.08	-.23, -.12
Mother's education	.14***	.04	4.08	.07, .21	.04	.03	1.75	-.01, .09	-	-	-	-	.12***	.03	4.48	.07, .18

Note. Mother's education was not available in the Peru dataset. -2 Log Likelihood: Ethiopia = 16245.05, India = 16363.17, Peru = 16254.08, and Vietnam = 16523.48. *p < .05, **p < .01, ***p < .001.

Table 3.7.

GUI Linear Mixed Models Examining the Relationship Between Family Structure Transitions and Child General Physical Health

	B	*SE*	*t*	*p*	*95% CI*
Intercept	1.47	.02	68.64	.000	1.43, 1.51
Family transition	.06	.02	3.07	.002	.02, .10
Sex	-.06	.01	-5.46	.000	-.08, -.04
Premature birth	.03	.02	1.90	.058	-.00, .06
Smoking in pregnancy	.03	.01	2.46	.014	.01, .06
Alcohol in pregnancy	-.02	.01	-1.94	.053	-.04, .00
PCG education	-.01	.00	-1.76	.079	-.02, .00
PCG depression status	.09	.02	4.63	.000	.05, .13
School	.00	.00	-.02	.984	-.00, .00

Note. -2 Log Likelihood: 17251.88.[3]

3.3.4 Educational Achievement

In the Young Lives analysis, family structure transitions were not associated with children's educational achievement in any of the four LMICs (Table 3.8.). In Ireland, family structure transitions were associated with children's maths and literacy performance. Specifically, children who experienced a family structure transition had worse maths ($B = -.12$, $p < .001$) and literacy ($B = -.13$, $p < .001$) scores than those who did not (Table 3.9.).

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[3] Results are based on analysis of strictly controlled Research Microdata Files provided by the Central Statistics Office (CSO). The CSO does not take any responsibility for the views expressed or the outputs generated from this research.

Table 3.8.

Young Lives Linear Mixed Models Examining the Relationship Between Family Structure Transitions and Children's Educational Achievement

	Ethiopia (*N* = 1,650)				India (*N* = 1,728)				Peru (*N* = 1,895)				Vietnam (*N* = 1,870)			
	B	*SE*	*t*	*95% CI*	*B*	*SE*	*t*	*95% CI*	*B*	*SE*	*t*	*95% CI*	*B*	*SE*	*t*	*95% CI*
Intercept	-.20***	.03	-5.97	-.26, -.13	.04	.06	.77	-.07, .15	-.07*	.03	-1.99	-.13, -.00	-.54***	.04	-14.48	-.62, -.47
Family transition	.02	.05	.35	-.07, .10	.00	.07	.00	-.14, .14	.01	.03	.30	-.05, .07	.00	.06	.00	-.11, .11
Sex	.06	.03	1.64	-.01, .12	-.14***	.03	-4.35	-.20, -.07	.11**	.04	2.94	.04, .19	.01	.03	.27	-.05, .07
Premature birth	-.02	.06	-.36	-.14, .09	-.07	.05	-1.26	-.17, .04	.24***	.04	5.43	.15, .32	.13**	.05	2.68	.03, .22
Shocks	-.08***	.01	-7.96	-.10, -.06	.00	.02	.19	-.03, .04	-.08***	.01	-6.94	-.10, -.06	-.03*	.01	-2.34	-.06, -.00
Mother's mental health	.08*	.04	2.11	.01, .15	-.09**	.03	-2.63	-.16, -.02	-.07	.04	-1.53	-.15, .02	-.05	.04	-1.42	-.13, .02
Mother's education	.88***	.04	21.72	.81, .97	.48***	.03	14.70	.42, .55	-	-	-	-	.77***	.04	21.95	.70, ,84

Note. Mother's education is not available in the Peru dataset. -2 Log Likelihood: Ethiopia = 13567.72, India = 17175.33, Peru = 16197.23, and Vietnam = 17060.71. *p < .05, **p < .01, ***p < .001.

Table 3.9.

GUI Linear Mixed Models Examining the Relationship Between Family Structure Transitions and Children's Maths and Literacy Scores

	Maths				Literacy			
	B	*SE*	*t*	*95% CI*	*B*	*SE*	*t*	*95% CI*
Intercept	-.50***	.04	-13.05	-.57, -.42	-.51***	.04	-13.01	-.59, -.44
Family transition	-.12***	.04	-3.18	-.20, -.05	-.13***	.04	-3.42	-.20, -.05
Sex	.36***	.02	19.37	.32, .40	.13***	.02	6.78	.09, .17
Premature birth	-.04	.03	-1.56	-.10, .01	-.03	.03	-.94	-.09, .03
Learning difference	-.61***	.03	-17.68	-.68, -.54	-.54***	.04	-15.08	-.61, -.47
Breakfast club	-.12***	.04	-3.19	-.19, -.05	-.04	.04	-1.06	-.12, .04
Free school meals	-.05	.03	-1.32	-.11, .02	-.09*	.04	-2.54	-.16, -.02
DEIS school	-.19***	.04	-5.47	-.26, -.13	-.17***	.04	-4.55	-.24, -.10
Smoking in pregnancy	-.11***	.02	-4.78	-.16, -.07	-.13***	.02	-5.16	-.18, -.08
Alcohol in pregnancy	.08***	.02	3.98	.04, .11	.03	.02	1.36	-.01, .07

PCG education	.13***	.01	16.64	.12, .15	.16***	.01	19.33	.14, .17
PCG depression status	-.15***	.04	-4.02	-.22, -.07	-.12***	.04	-3.20	-.19, -.05
School	-.00	.00	-1.72	-.00, .00	-.00	.00	-.88	-.00, .00

Note. *p < .05, **p < .01, ***p < .001. -2 Log Likelihood: Maths = 27305.87, Literacy = 27172.83.[4]

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[4] Results are based on analysis of strictly controlled Research Microdata Files provided by the Central Statistics Office (CSO). The CSO does not take any responsibility for the views expressed or the outputs generated from this research.

3.4 Discussion

In this chapter, I identified the prevalence of family structure transitions in contexts where there is a limited evidence base. I found that 22.0% of children in Peru experienced at least one family structure transition by age 12, followed by Ethiopia (14.8%), Vietnam (7.7%), and India (5.6%). In Ireland, 8.3% of children experienced a family structure transition between ages 9 and 17/18. I also tested whether family structure transitions are associated with children's general physical health and educational achievement. Contrary to my hypothesis, family structure transitions were not associated with children's general physical health or educational achievement in Ethiopia, India, Peru, or Vietnam. In contrast, family structure transitions were associated with worsened general physical health and educational achievement for children in Ireland.

As in high- and upper-middle-income contexts (DeRose, Lyons-Amos et al., 2017), the prevalence of family structure transitions within the four LMIC contexts was wide-ranging (5.6% – 22.0%). Family structure transitions were least prevalent in India where individual autonomy regarding partner selection is low and family and community input is high (Dommaraju, 2016). Despite having autonomy regarding dating and marriage choices (Scroope, 2018), the prevalence of family structure transitions in Vietnam was also relatively low (7.7%). However, although people in Vietnam may have autonomy over who they date, the majority of people think divorce is "never justifiable" (52.2%) (Inglehart et al., 2014). This lack of acceptance regarding divorce may be behind the low rates of transitions in Vietnam – indeed, the transition from a two-parent family to a single-parent family was the most common type of transition in this country, although we do not how many of these transitions were divorces versus separations. A relatively large proportion of children experienced family structure transitions in Peru (22.0%), where there has been a decline in the number of married families and an increase in the number of cohabiting and single-parent families (Cuesta et al., 2017). This may explain why family structure transitions are more prevalent in Peru than in the other Young Lives countries, because being born to a cohabiting or single-parent family increases the likelihood of experiencing a transition (Brown et al., 2016; Cavanagh & Huston, 2006; Manning, 2015; Raley & Sweeney, 2020; Ryan & Claessens, 2013). Family structure transitions may not be as prevalent in Ethiopia as they are in Peru because of the stigma regarding single motherhood (Crivello et al., 2019; Newton-

Levinson et al., 2014), meaning that a transition from a two-parent family to a single-parent family may be less likely if it will result in a single-mother household.

I hypothesised that family structure transitions would be more harmful in countries where they are less normative; instead, I found that transitions did not impact children's outcomes in any of the Young Lives countries, but they were associated with worsened general physical health and educational achievement for children in Ireland. The prevalence of family structure transitions in Ireland is relatively similar to the prevalence of transitions in India and Vietnam – the two Young Lives countries with the lowest prevalence of family structure transitions (5.6% and 7.7%, respectively) – although it is important to note that the prevalence estimates in Ireland span ages 9 to 17/18, compared to ages 1 to 12 in the Young Lives data. This suggests that family structure transitions are not more harmful to children in countries where they are less common. An alternative hypothesis could be that the effects of family structure transitions on children's outcomes are easier to detect when their lives are relatively stable in other ways. That is, many children in the Young Lives countries experience multiple substantial social and environmental challenges such as access to sanitised water, malnutrition, and child labour (Boyden, 2018) which may outweigh any effects that family structure transitions have on children's development (i.e., the socioeconomic disadvantage hypothesis, see Cavanagh & Fomby (2019)). Apart from the educational achievement analyses in India, the "shocks" control variable in the Young Lives analyses was statistically significant in all four countries, which is consistent with research which shows that children's development is impacted by environmental influences (Groppo & Krähnert, 2015; Kousky, 2016). This suggests that environmental challenges are a stronger determinant of health than family structure transitions in less stable contexts. A similar pattern of results was found in Schoon and colleagues' (2012) study, which found that poverty was a more important risk factor for children's cognitive development than family instability. These results are in line evidence from the United States which suggest that family instability is more harmful for more privileged (i.e., White, from a middle- or upper-income household) children than their counterparts (e.g., Bloome, 2017; Fomby et al., 2010; Ryan et al., 2015; Wu & Thompson, 2001). Thus, it is critical to develop a contextualised understanding of the impacts of family structure transitions, because it appears that transitions do not impact children in the same way across different contexts.

The null findings in the Young Lives countries could be related to the types of family structure transitions that families in these contexts experience. Although this thesis was interested in transitions due to changes in the parents' cohabiting romantic relationship status, it is possible that some of the transitions result from other circumstances, such as a parent temporarily leaving the household to pursue overseas employment opportunities, or military deployment. These types of family structure transitions are conceptually different to those resulting from a parent ending or starting a new romantic relationship, because of the perceived permanency. For example, a parent leaving the household for military deployment may be perceived as a temporary change and may not be accompanied by changes in the child's relationship with a parent figure, unlike a parent leaving the household following a divorce or separation. This is important because, as the double ABC-X model of family stress and adaptation theorises, how a family interprets a stressful event influences how impactful that event is (McCubbin & Patterson, 1983). If the family expects the family structure to return to its original formation, this could mean that the transition is associated with less stress, and is therefore less impactful, than if the family perceives this change as permanent. This is an avenue which future research could explore.

An alternative explanation for the null findings in the Young Lives countries is that family structure transitions could be harmful to some children's development, but neutral or even positive for others, and these competing patterns of results could be cancelling each other out in analyses which look at average changes. For instance, family structure transitions that involve the entrance of a caregiver might be beneficial for children's outcomes, because the additional caregiver could provide support (e.g., financial, instrumental, social) which could alleviate the financial stress and negative outcomes associated with transitions. Alternatively, family structure transitions that involve the exit of a caregiver might be harmful to children's outcomes because the loss of support might reduce resources (e.g., money, time) which might be beneficial for their health and educational achievement. This suggests that we need more evidence on what might be making family structure transitions less stressful and, in turn, less harmful to children.

One possible factor that may be lessening the stress and therefore the negative consequences of family structure transitions could be the types of families that the Young Lives children are living in. That is, many of the Young Lives children live in multigenerational households, or households that include extended kin. Living in these households may act as a protective

buffer against the stress and, in turn, the negative consequences associated with family structure transitions, as other family members may be able to compensate for decreased resources as a result of a transition (e.g., instrumental and social support) (Mehio-Sibai et al., 2009). This is a further reason as to why it is important to develop a more geographically diverse understanding of the impact of family structure transitions, because the types of families that children live in differ across contexts, and this could have an impact on how family structure transitions are experienced. In Chapter 5, I will test whether aspects of the family context (i.e., household size, and living in a multigenerational or extended kin household) influence the stress associated with family structure transitions.

3.4.1 Limitations

I have used a large-scale, longitudinal dataset to explore the prevalence and consequences of family structure transitions in LMICs (study aims one and two), but this approach has its limitations. The Young Lives study collects data every three to four years, and I identified whether children's family structure changed from one round to another, thus potentially undercounting the prevalence of transitions by missing transitions which occurred in between rounds. However, the monthly union history calendar DHS data found the same pattern of results as the Young Lives estimates with very similar figures, which increases confidence in the findings. I searched for other LMIC datasets (Institute for Fiscal Studies, 2019) to use to either complement the Young Lives data, or to add information from more LMICs to this analysis, but I was unable to find any that were conducted within the past 20 years, spanned from early childhood to age 12, and had adequate household and child outcome variables. So, despite the large gaps between each round of data collection, the Young Lives dataset was the only one which allowed me to effectively address the first two research aims in this thesis.

The general physical health variables in both datasets were another limitation of this analysis. First, from rounds one to four in the Young Lives data and in all three rounds of the GUI data, the primary caregiver reported on the child's physical health, which can lead to bias. For instance, caregivers with low mood may be more likely to indicate that their child's health is poor and that they are more financially stressed. Less involved caregivers may also be worse at assessing their child's health. Second, one of the Young Lives physical health variables asked the caregiver to report on the child's general physical health relative to other

children of the same age. It is likely that the caregiver would have compared their child to their siblings or other members of the community who, given the impact of the family and community environment on physical health (Novilla et al., 2006), may have similar levels of physical health. Some areas might have better or worse physical health than others, and so, because children were compared to their peers rather than children more generally, this variable may not be accurately capturing children's physical health. Further, in the Young Lives data, the availability of the general physical health items differed depending on the round of data collection and the country, with some items only being available at one round. Because of the large gaps between each round of data collection, I chose to measure general physical health as this was more likely to be affected by a transition than short term physical health symptoms, such as "having a fever". There were two general physical health items, and at least one of them was available at each of the five rounds (Oldroyd, 2020). Despite only having one out of the possible two general physical health items in rounds one to four, focusing on general physical health made the most theoretical sense, and it was the only facet of physical health that allowed me to address my research question using this data. Physical health is an understudied outcome in the existing literature (Crosnoe & Cavanagh, 2010; Goisis et al., 2019), and so it allowed me to add to the relatively small amount of research on the impacts on family structure transitions on children's physical health.

Another limitation of this study is that I was unable to capture stepfamily transitions (i.e., a transition from living with one stepparent to a different stepparent). This is because I only had yes/no information about whether a partner lives in the household, rather than information about who the partner was, and if the partner changed from one round to another. However, classifying family structures based on where the biological parents and their partners were living allowed me to categorise stepfamilies that may not identify themselves as a stepfamily; the primary caregiver may not identify as living in a stepfamily, even though they live in the same household as their romantic partner, who may or may not have a parenting role toward the child (Hadfield & Nixon, 2013).

3.4.2 Conclusion

The analysis in this chapter identified the prevalence of family structure transitions in understudied contexts. The effects of family structure transitions vary across these contexts:

transitions were associated with worsened general physical health and educational achievement for children in Ireland, but not in any of the four LMICs. This highlights the need for a more contextualized understanding of how family structure transitions impact children and their families. In order to facilitate global family research, there is a need for large-scale, longitudinal studies of children in LMICs that sample children regularly and ask about their family lives. This would enable researchers to better understand these children's family environments, including a more thorough and accurate estimate of the prevalence and consequences of family structure transitions in these contexts. Further, this research underscores the need to understand why transitions do not always lead to worsened outcomes for children; the chapters that follow will examine this by testing the association between family structure transitions, stress, and children's outcomes (Chapter 4), and by identifying factors which influence the stress associated with these transitions (Chapter 5).

Chapter 4: Testing the Instability Hypothesis

4.1 Introduction

The third aim of this thesis is to test and extend the instability hypothesis. This aim will be addressed across Chapters 4 and 5. In this chapter, I will test the instability hypothesis by adding stress - specifically, financial and parenting stress - as a mediator to the family structure transition – child outcome relationship. I will use the Young Lives and Growing Up in Ireland (GUI) datasets, which include five countries, none of which are currently included in the existing instability hypothesis literature: Ethiopia, India, Peru, Vietnam, and Ireland. The chapter begins by describing the existing evidence for the instability hypothesis. The Young Lives and GUI datasets will then be described, followed by the mediation analyses conducted. The chapter will conclude with a discussion of the findings, and the limitations of the study.

4.1.1 Theories of Family Instability

Family structure transitions are commonplace in many high-income countries (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017) and – as the findings from Chapter 3 revealed – in at least some low- and middle-income countries (LMICs) too. There is a wealth of literature detailing the impacts of these transitions on children's outcomes (Cavanagh & Fomby, 2019). This literature suggests that family structure transitions are associated with numerous negative child outcomes, including worsened physical health and educational achievement (e.g., Augustine & Kimbro, 2015; Bzostek & Beck, 2011; Cooper et al., 2011; Devor et al., 2018; Fomby, 2013; Perkins, 2019; Sun & Li, 2011; Wickrama, et al., 2013). However, as the findings from Chapter 3 and some existing literature demonstrates, family structure transitions are not always associated with worsened outcomes for children, and they can in fact have neutral or even positive effects (Cavanagh & Fomby, 2019; Coleman & Glenn, 2010; Hadfield, Amos, et al., 2018; Ryan et al., 2015; Turney, 2015). One possibility is that there are intervening mechanisms at play which explain the relationship between family structure transitions and children's outcomes.

The instability hypothesis is a stress mediation model which theorises that family structure transitions are indirectly associated with negative child outcomes through the pathway of stress (Fomby & Cherlin, 2007; Wu & Martinson, 1993). That is, family structure transitions lead to stress, and this stress leads to negative outcomes for children (Figure 4.1.). However, a systematic review of the instability hypothesis found that the evidence is inconsistent: 28 out of 84 analyses found that family structure transitions were associated with stress (conceptualized as financial stress, child/parent functioning, family and parenting, and mobility), and 147 out of 308 analyses found that stress was associated with children's outcomes (Hadfield, Amos, et al., 2018; see Figure 3 in this paper for a detailed breakdown of the significant and non-significant pathways from the 39 reviewed studies). This suggests that family structure transitions are not always stressful, and thus do not always lead to negative outcomes for children.

Often contrasted with the instability hypothesis is the selection hypothesis, which posits that family structure transitions are associated with negative child outcomes because parents possess characteristics which make them both more likely to experience multiple transitions, and for their children to be more likely to experience negative developmental outcomes (Wu & Martinson, 1993) (Figure 4.1.). For example, a parent with a narcissistic personality may have difficulty maintaining long-term relationships (Wurst et al., 2017), and may also provide lower-quality parenting (Hart et al., 2017). However, even when controlling for parental characteristics (e.g., parents' own experiences of family instability, early alcohol and drug use, cognitive achievement), family structure transitions still impact children's outcomes (e.g., Bayaz-Öztürk, 2022; Fomby & Cherlin, 2007; Fomby, 2013; Wu, 1996; Wu & Thompson, 2001). This suggests that family structure transitions impact children over and above the influence of parental characteristics.

Figure 4.1.

Theories of Family Instability: The Instability Hypothesis (a) and The Selection Hypothesis
(b)

a.

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                        ┌──────────┐
                        │  Stress  │
                        └──────────┘
                    ↗                 ↘
    ┌────────────┐                      ┌────────────────┐
    │   Family   │ ───────────────────→ │ Negative child │
    │ transitions│                      │    outcomes    │
    └────────────┘                      └────────────────┘
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b.

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                                    ┌────────────┐
                                    │   Family   │
                                ↗   │ transitions│
    ┌───────────────┐               └────────────┘
    │    Parents'   │
    │characteristics│
    └───────────────┘               ┌────────────────┐
                                ↘   │ Negative child │
                                    │    outcomes    │
                                    └────────────────┘
```
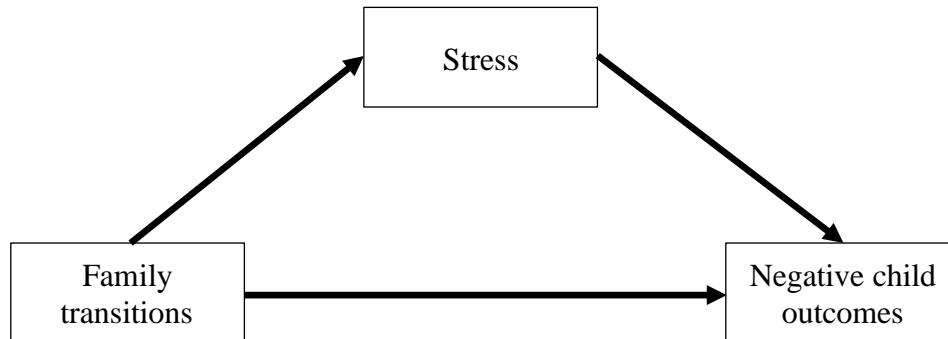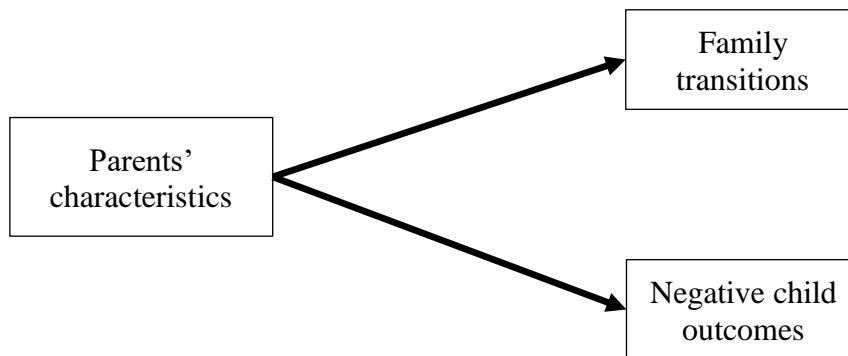
4.1.2 Evidence for the Instability Hypothesis

Although some studies have provided support for the instability hypothesis (e.g., Averdijk et al., 2012; Coley et al., 2015; Fomby, 2013; Heard, 2007; Lacey et al., 2013; Osborne & McLanahan, 2007; Schoon et al., 2012; Sun & Li, 2014), all the research testing this hypothesis focuses on high-income countries, with the exception of Hu's (2020) study which tested the instability hypothesis in one upper-middle income country (China) (Figure 4.2.). Further, of the 39 studies included in a systematic review of the instability hypothesis, 28 of them use datasets which sample children and families from the United States (Hadfield, Amos, et al., 2018), where family structure transitions are exceptionally common (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017), and 26 of those used the same eight datasets. It is crucial to broaden the contexts in which family structure transitions are studied, because children living in disadvantaged contexts may already face a variety of stressors such as access to food, crowded living conditions, and a lack of income which affect their

development (About Families, 2012; World Health Organisation, 2018, 2019) – family structure transitions could be an additional stressor compromising the development of these children. Further, the association between family structure transitions, stress, and children's outcomes could differ across low-, middle-, and high-income contexts. Family structure transitions could be more threatening to children living in LMICs because they could push families more easily into poverty, with detrimental implications for children's development (Engle & Black, 2008; Kousky, 2016; McLoyd, 1998). To address this research gap, this chapter will test the instability hypothesis across a range of geographical and cultural contexts.

Figure 4.2.

A Map of the Countries Included in the Existing Instability Hypothesis Literature

| Countries included in the existing literature | Countries not included in the existing literature | Countries studied in this thesis |
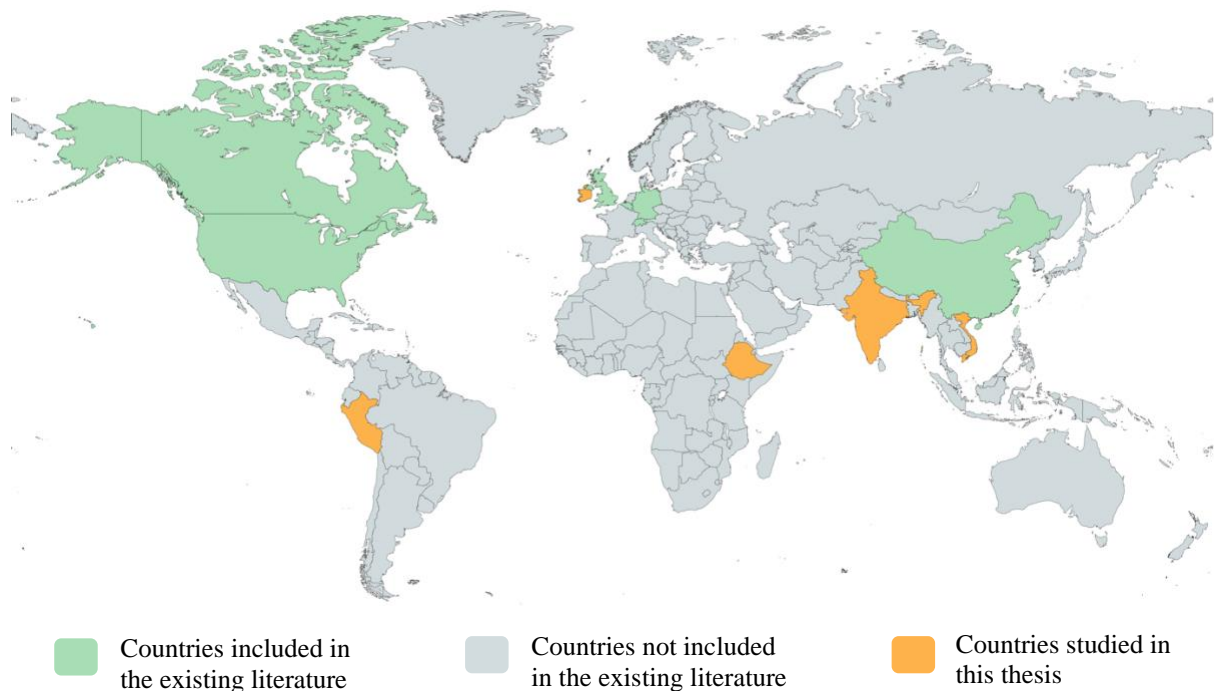
4.1.3 Research Aims and Hypotheses

This chapter aims to test the instability hypothesis across five low-, middle-, and high-income countries: Ethiopia, India, Peru, Vietnam, and Ireland (aim three). In line with the instability hypothesis (Fomby & Cherlin, 2007), I hypothesise that the relationship between family structure transitions and children's outcomes will be mediated by stress, namely, financial and parenting stress. These stressors were selected because they are the most frequently used

in the existing instability hypothesis literature (Hadfield, Amos, et al., 2018), and they were the best available stress variables in the Young Lives and GUI datasets.

First, I will test the instability hypothesis in the Young Lives data with financial stress as a mediator. I will replicate this analysis to see how the findings compare in a high-income country – Ireland – using the GUI data. I will also run the analysis with parenting stress as a mediator in the GUI data; a parenting stress variable was not available in the Young Lives data. The advantage of using both datasets is two-fold: 1) it allows me to test the instability hypothesis in four LMICs, whilst also comparing the findings to a high-income country that is currently not included in the instability hypothesis literature, and 2) it allows me to test the instability hypothesis using two stress variables (financial and parenting stress) which is advantageous because the existing literature uses a range of stressors (Hadfield, Amos, et al., 2018), so I can examine if and how the results differ depending on the stressor used.

4.2 Methods

4.2.1 Data

4.2.1.1 The Young Lives Study

Five rounds of younger cohort data (ages 1, 5, 8, 12, and 15) from the Young Lives study were used ($N = 8,062$). In this analysis, the household and child questionnaires were used to identify family structure transitions, financial stress, and children's general physical health and educational achievement. Family structure transitions and financial stress were reported by the primary caregiver. The primary caregiver reported on the child's physical health until round four, and the child reported on their own health at round five. The child completed the educational achievement measure at every round. The same exclusion criteria that were used in Chapter 3 was applied in this chapter. The final analytic sample was $N = 7,143$ ($N = 1,650$ in Ethiopia, $N = 1,728$ in India, $N = 1,895$ in Peru, and $N = 1,870$ in Vietnam).

4.2.1.2 The Growing Up in Ireland (GUI) Study

Three rounds of child cohort data (ages 9, 13, and 17/18) from the GUI study were used ($N = 8,568$). In this analysis, the primary caregiver questionnaire was used to obtain information about family structure transitions, financial and parental stress, and children's physical health. The study child questionnaire was used to gain information about the child's educational achievement. The same exclusion criteria that were used in Chapter 3 were used in this chapter. The final analytic sample was $N = 7,294$.

4.2.2 Measures

The same family structure transition variable that was created in Chapter 3 was used in this and all other subsequent chapters. As a reminder, to be consistent with the existing literature, family structure transitions were classified as a change in household composition caused by a change in the cohabiting romantic relationship status of the parents (Cavanagh & Fomby, 2019; Hadfield, Amos, et al., 2018; Hadfield, Ungar, et al., 2018), thus only parent-headed family structures (i.e., two-parent families, single-parent families, and stepfamilies) were included in the calculation of family structure transitions. As was demonstrated in Chapter 3, the vast majority of children in each of the four Young Lives countries lived in one these three family structures at all rounds. The same outcome variables – general physical health and educational achievement – and control variables that were used in Chapter 3 were also used in this Chapter.

4.2.2.1 Stress

In the Young Lives analysis, stress was conceptualised using a primary-caregiver reported financial stress variable – the wealth index variable. The wealth index variable is a measure of socioeconomic status that assesses households on three indicators of wealth: housing quality (e.g., what is the main material of the walls), access to services (e.g., electricity, safe drinking water), and country-specific household items (i.e., whether the household owns common household items that are in working condition, such as a television) (Briones, 2017). The wealth index variable produces a score from 0 to 1, with a higher score indicating higher socioeconomic status and, therefore, lower financial stress. The same variable was used at every round and in all four countries.

In the GUI analysis, stress was conceptualised in two ways which were both primary-caregiver reported: financial stress (to replicate the Young Lives analysis) and parenting stress (to identify if and how the results differ depending on the type of stressor used; a parenting stress variable was not available in the Young Lives dataset). Financial stress was measured using the equivalised household income variable which categorises households into income deciles. Households in the lowest 10% of income were assigned to the lowest decile (decile 1), and households in the highest 10% of income were assigned to the highest decile (decile 10). A higher score on this variable indicates higher household income and, therefore, lower financial stress. Parenting stress was measured using a shortened six-item version of the Parental Stress Scale (Berry & Jones, 1995), which has high reliability in the GUI sample (Murphy et al., 2019; Thornton et al., 2016). This version of the scale focuses on the negative/stressful aspects of the parenting role (e.g., "Caring for my child takes more time and energy than I have to give"). Items are rated from 1 (strongly disagree), to 5 (strongly agree), so a higher score indicates higher levels of parenting stress (M at round 2 = 10.10, SD at round 2 = 4.02, M at round 3 = 10.40, SD at round 3 = 3.87). The same variable was used at every round.

4.2.3 Data Analysis

Multilevel mediation using Linear Mixed Models (LMMs) was used to determine whether financial stress and parenting stress mediated the link between family structure transitions and children's physical health and educational achievement. A series of models were run. First, LMMs were run to identify whether family structure transitions predicted children's outcomes (i.e., the analysis from Chapter 3). The predictor variable of interest was family structure transitions. The outcome variables were children's general physical health and educational achievement. A statistically significant direct association between family structure transitions and the outcome variables is not required in order to test for a mediation effect, as the association between the predictor and the outcome may be explained by the mediator (Hayes, 2009, 2013). Stress was then added as a mediator to identify whether financial stress (Young Lives and GUI analysis) and parenting stress (GUI analysis) mediated the link between family structure transitions and children's outcomes. Family structure transitions from one round to another predicted stress at the subsequent round (e.g., a family structure transition that occurred between round one and two predicted stress at round two). If

family structure transitions were associated with stress, and stress was associated with children's outcomes, an additional model was run which included both family structure transitions and stress as predictors to test the strength of the mediation (i.e., to test whether the direct relationship between family structure transitions and children's outcomes reduced or became non-significant after including the mediator). In the models, intercepts (children's physical health and educational achievement status at the final round of data included in the analyses) and slopes (rate of change over time) were allowed to vary by child. Slopes remained fixed in the Young Lives educational achievement analysis because the models did not converge with random slopes, and so the parameter estimates were not reliable.

Although the instability hypothesis theorises that *all* family structure transitions are stressful (Fomby & Cherlin, 2007; Wu & Martinson, 1993), there is a distinct lack of research on family instability in LMICs. So, to build on the small body of literature in LMICs, in addition to the analyses of how transitions in general impact child outcomes, I conducted more in-depth analyses on the Young Lives data to test whether the *type* of family structure transition is important in these contexts. This will allow for an insight into whether family structure transitions are uniformly stressful – as the instability hypothesis theorises – or whether the potential stress associated with transitions is variable in different circumstances in LMICs. It will also allow me to more confidently make inferences about whether any non-significant findings are due to the way family instability has been operationalised in this thesis (i.e., by combining all types of family structure transitions into one variable), or whether these transitions really are not associated with stress in these contexts. In these analyses, I tested the family structure transition – stress relationship distinguishing between relationship formations (i.e., going from a single-parent family to a two-parent family, and going from a single-parent family to a stepfamily) and relationship dissolutions (i.e., going from a two-parent family to a single-parent family, and going from a stepfamily to a single-parent family). Transitions from a two-parent family to a stepfamily and vice versa were not included, because these transitions are both relationship formations and dissolutions, and so they do not fit exclusively into the formation or dissolution categories. Only a very small number of children experienced these types of transitions; $n < 40$ of children experienced these transitions across all rounds in each of the four countries.

4.3 Results

4.3.1 Young Lives

In Chapter 3, I found that family structure transitions were not associated children's general physical health or educational achievement in any of the Young Lives countries ($ps > .05$). Although greater financial stress predicted worse general physical health and educational achievement for children in all four Young Lives countries ($ßs = . 182 - .302, ps = .000 - .027$) family structure transitions did not predict financial stress, and so financial stress did not mediate the link between family structure transitions and children's general physical health or educational achievement in any of the Young Lives countries ($ps > .05$) (Figures 4.3. – 4.4.).

Figure 4.3.

Testing the Instability Hypothesis with Children's General Physical Health as the Outcome in the Young Lives Countries
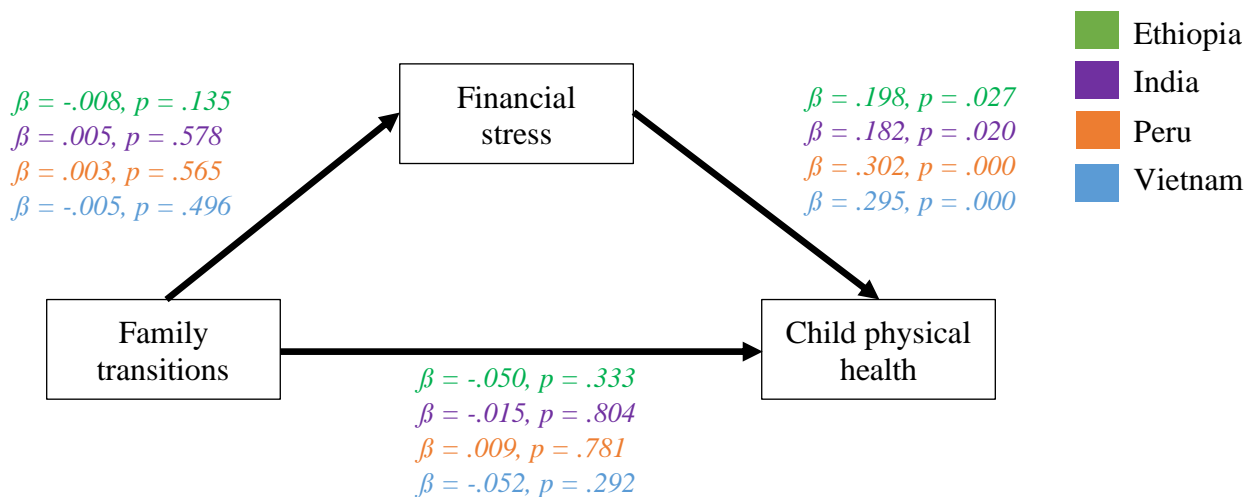
Note. Although the term "financial stress" is used, increases in the measure (i.e., the wealth index variable) corresponds with lower levels of financial stress. A higher score indicates better physical health.

Figure 4.4.

Testing the Instability Hypothesis with Children's Educational Achievement as the Outcome in the Young Lives Countries
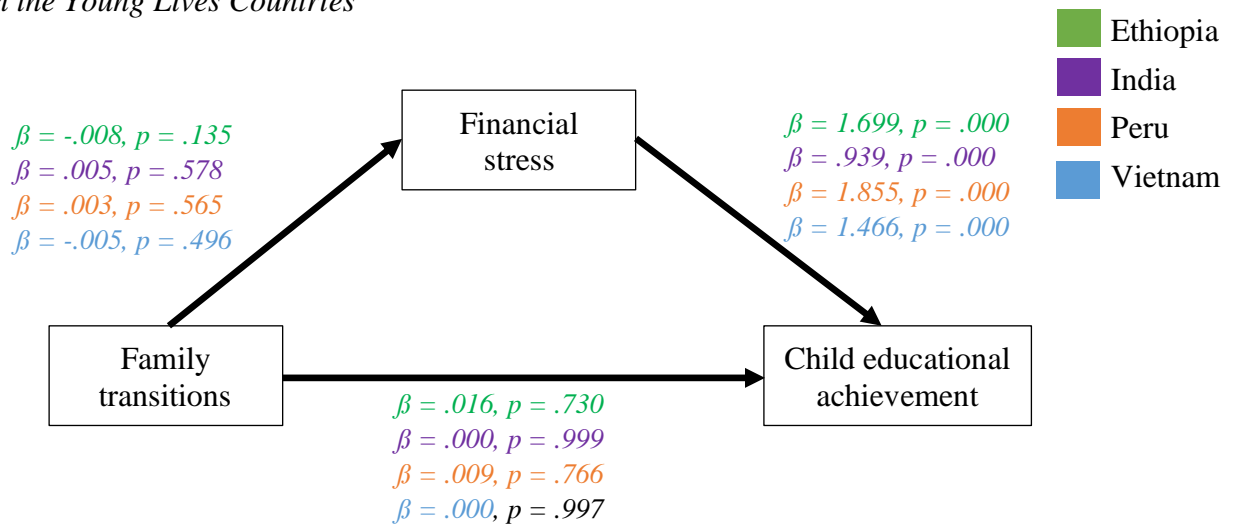
Note. Although the term "financial stress" is used, increases in the measure (i.e., the wealth index variable) corresponds with lower levels of financial stress.

Experiencing a relationship formation was associated with better physical health for children in India ($\beta = .292$, $p < .05$), but not in Ethiopia, Peru, or Vietnam (ps > .05) (Figure 4.5.). Relationship formation was not associated with children's educational achievement in any of the four Young Lives countries (ps > .05) (Figure 4.6). Experiencing a relationship formation was not associated with financial stress in Ethiopia, India, Peru, or Vietnam (ps > .05). Thus, financial stress did not mediate the association between relationship formation and children's general physical health or educational achievement in any of the Young Lives countries (Figures 4.5. – 4.6.).

Figure 4.5.

Testing the Association between Relationship Formation, Financial Stress, and Children's

General Physical Health

Note. Although the term "financial stress" is used, increases in the measure (i.e., the wealth index variable) corresponds with lower levels of financial stress. A higher score indicates better physical health.

Figure 4.6.

Testing the Association between Relationship Formation, Financial Stress, and Children's

Educational Achievement
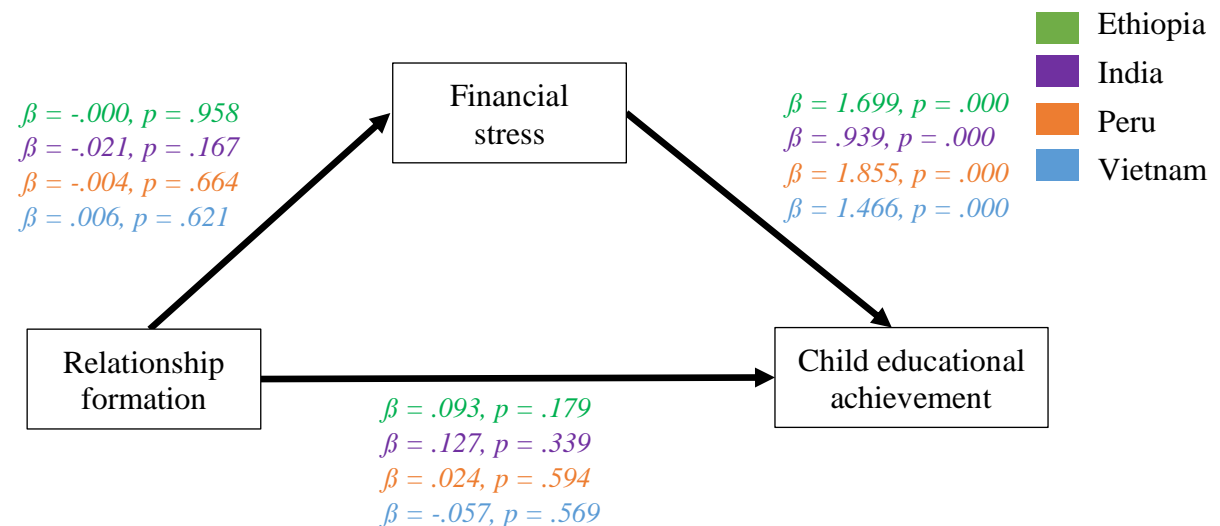
Note. Although the term "financial stress" is used, increases in the measure (i.e., the wealth index variable) corresponds with lower levels of financial stress.

Experiencing a relationship dissolution was associated with poorer physical health for children in India ($\beta = -.141$, $p < .05$), but not in Ethiopia, Peru, or Vietnam (ps $> .05$).

Relationship dissolution was not associated with children's educational achievement in any of the four Young Lives countries (*p*s > .05). Relationship dissolution was not associated with financial stress in Ethiopia, India, Peru, or Vietnam (ps > .05). Therefore, financial stress did not mediate the association between relationship dissolution and children's general physical health or educational achievement in any of the Young Lives countries (Figures 4.7. – 4.8.).

Figure 4.7.

Testing the Association between Relationship Dissolution, Financial Stress, and Children's General Physical Health

Note. Although the term "financial stress" is used, increases in the measure (i.e., the wealth index variable) corresponds with lower levels of financial stress. A higher score indicates better physical health.

Figure 4.8.

Testing the Association between Relationship Dissolution, Financial Stress, and Children's

Educational Achievement
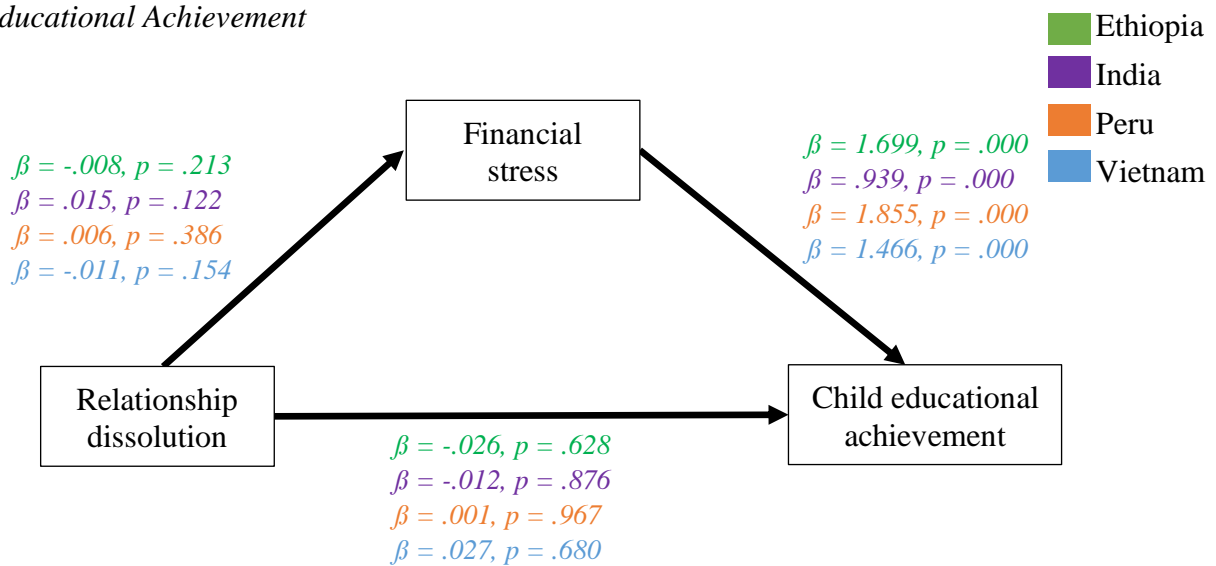
Note. Although the term "financial stress" is used, increases in the measure (i.e., the wealth index variable) corresponds with lower levels of financial stress.

4.3.2 GUI

In contrast with Ethiopia, India, Peru, and Vietnam, family structure transitions were associated with worsened general physical health for children in Ireland ($ß = .064, p < .01$). Family structure transitions were also associated with increased financial stress ($ß = -.523, p < .001$), and financial stress was associated with worsened child general physical health ($ß = -.010, p < .001$). Since the size of the total effect remained the same after adding the mediator variable to the model, a mediation effect was not found (Figure 4.9.).
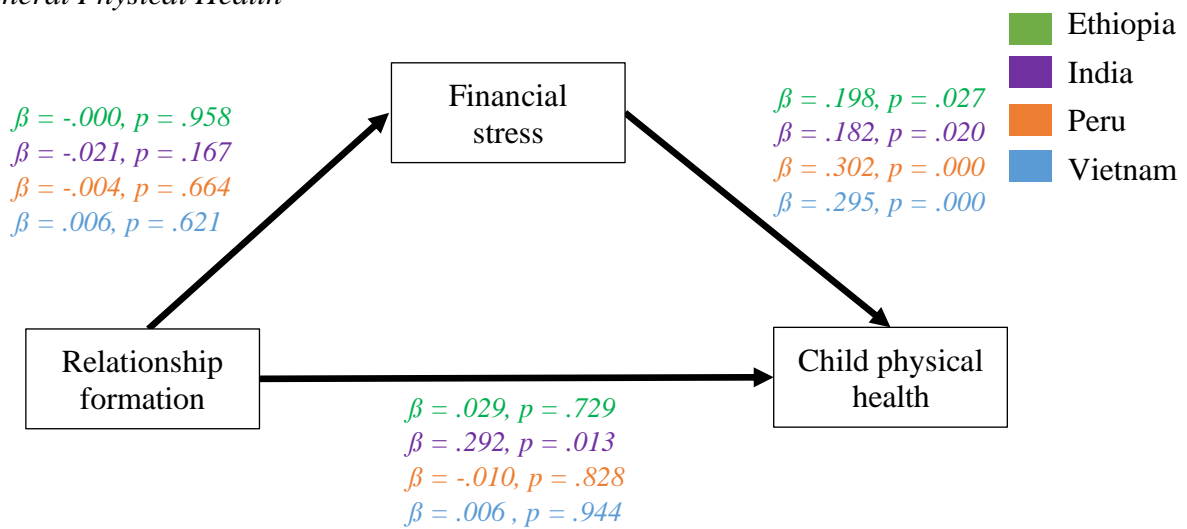
Figure 4.9.

Testing the Instability Hypothesis with Children's General Physical Health as the Outcome in Ireland
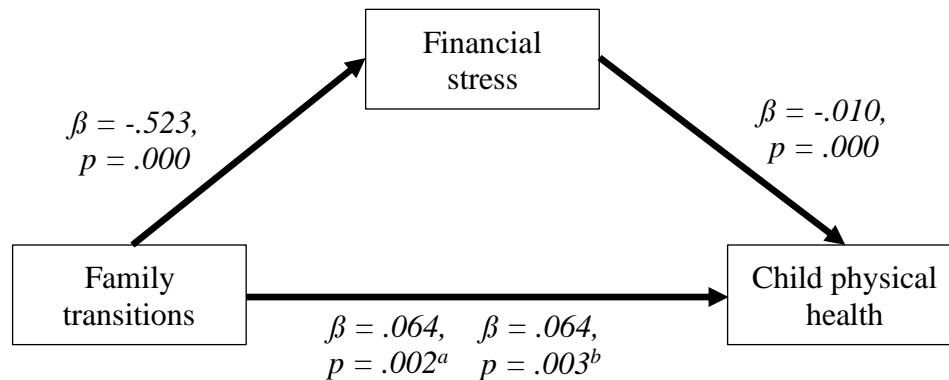
Note. [a]Parameter estimates before financial stress was added as a mediator. [b]Parameter estimates after financial stress was added as a mediator. Although the term "financial stress" is used, increases in the measure (i.e., equivalised household income) corresponds with lower levels of financial stress. A lower score indicates better physical health.[5]

Unlike the Young Lives analysis, family structure transitions were associated with worsened educational achievement using both the maths and literacy scores for children in Ireland (*ßs = .121 - .126, p*s = .001). Both financial stress and parenting stress mediated this association (Figures 4.10. – 4.11.). The mediation effect with financial stress as a mediator was larger when educational achievement was the outcome compared with general physical health. The mediation effect of financial stress was stronger than the effect of parenting stress, demonstrated by the smaller change in the parameter estimates on the direct effect before and after stress was included as a mediator to the family structure transition – education achievement relationship.

Figure 4.10.

Testing the Instability Hypothesis with Children's Educational Achievement as the Outcome in Ireland
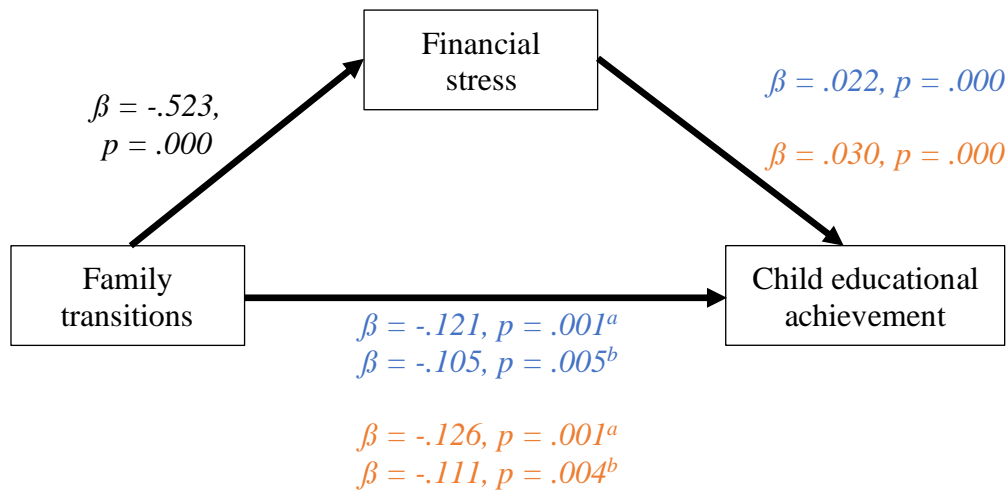
Note. Parameter estimates in blue represent maths, and parameter estimates in orange represent literacy. [a]Parameter estimates before financial stress was added as a mediator. [b]Param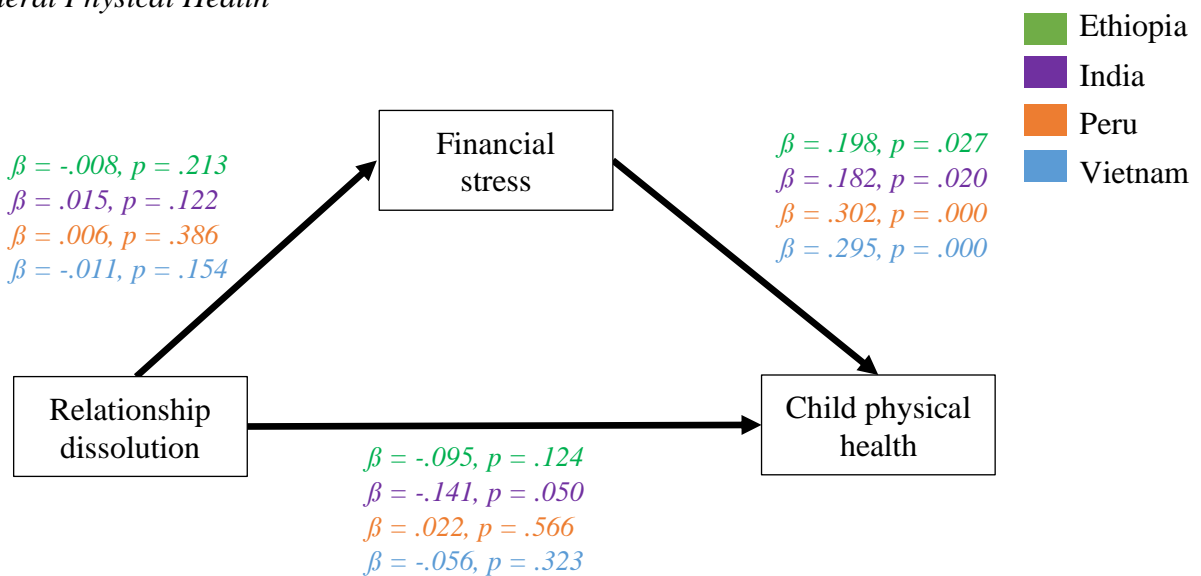eter estimates after financial stress was added as a mediator. Although the term "financial stress" is used, increases in the measure (i.e., equivalised household income) corresponds with lower levels of financial stress.[6]

Figure 4.11.

Family Structure Transitions, Parenting Stress, and Educational Achievement
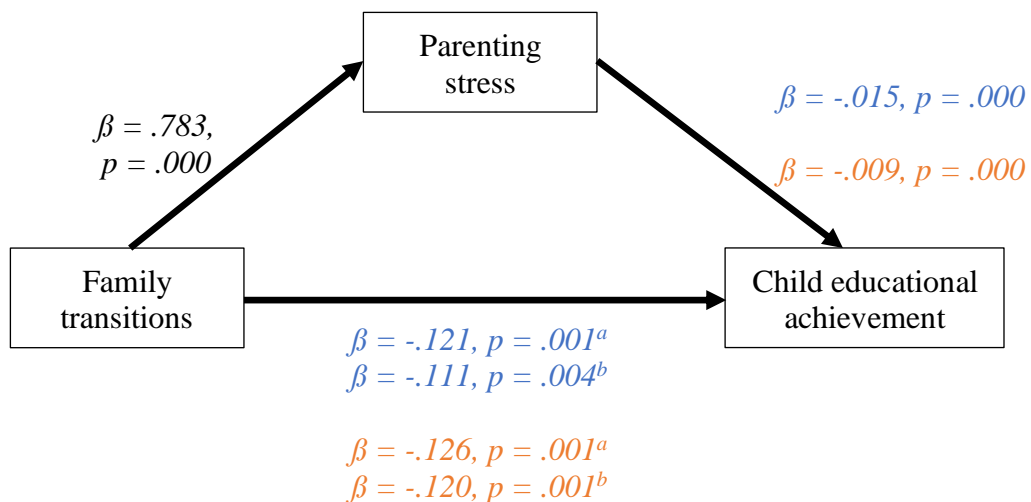
Note. Parameter estimates in blue represent maths, and parameter estimates in orange represent literacy. [a]Parameter estimates before parenting stress was added as a mediator. [b]Parameter estimates after parenting stress was added as a mediator.[6]

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[6] Results are based on analysis of strictly controlled Research Microdata Files provided by the Central Statistics Office (CSO). The CSO does not take any responsibility for the views expressed or the outputs generated from this research.

4.4 Discussion

The analyses in this chapter tested the instability hypothesis in four LMICs, specifically, in Ethiopia, India, Peru, and Vietnam (aim three). In Chapter 3, no total effects of family structure transitions on children's physical health or educational achievement were found in any of the Young Lives countries, but total effects were found for both of these outcomes in Ireland. Contrary to the hypothesis that stress would mediate the family structure transition – child outcome relationship, I found that financial stress did not mediate the family structure transition – child outcome relationship in any of the four Young Lives countries. When distinguishing between the type of family structure transition experienced (i.e., relationship formations and dissolutions), the instability hypothesis was still not supported in any of the Young Lives countries. To compare the findings with a high-income country previously not included in the instability hypothesis literature, these analyses were also run in Ireland. In contrast to the Young Lives analyses, financial stress mediated the family structure transition – educational achievement relationship. Parenting stress also mediated this relationship in Ireland.

Family structure transitions were associated with financial stress in Ireland, but not in Ethiopia, India, Peru, or Vietnam. These inconsistent findings are reflective of the existing instability hypothesis research, which is very mixed (Hadfield, Amos et al., 2018). More specifically, when focusing on the literature which uses financial measures of stress, although some studies find evidence of financial stress fully mediating the family structure transition – child outcome relationship (e.g., Schoon et al., 2012; Sun & Li, 2014), others find no mediation effect at all (e.g., Bzostek & Beck, 2011; Hu, 2020; Sun & Li, 2011; Wagmiller at al., 2010). Thus, the findings of this chapter corroborate the conclusion of Hadfield, Amos et al.'s (2018) systematic review of the instability hypothesis: family structure transitions are not uniformly stressful. It is therefore important to postulate about the reasons why family structure transitions are not always associated with stress. Uncovering potential protective factors could contribute towards developing interventions which aim to shield children from the negative outcomes associated with changes in family structure.

So, what could be reducing the financial stress associated with family structure transitions in the Young Lives countries? As noted in Chapter 3, the proportion of multigenerational and extended kin households is much smaller in Ireland than in all four of the Young Lives

countries (2.8% and 1.3% respectively, compared with 6.6% – 33.5% and 5.6% – 13.1% in the Young Lives countries). The average household size is also larger in Ethiopia, India, and Peru compared with Ireland (mean household size in Ethiopia: 6.19, India: 5.44, Peru: 5.42, Vietnam: 4.61, and Ireland: 4.77). Thus, in Ireland, families may have fewer sources of support (e.g., instrumental, social) within the household than families in the Young Lives countries. These household members could act as a protective buffer against the financial stress associated with family structure transitions (McCubbin & Patterson, 1983), assuming that they have the capacity to provide support. For example, household members could provide free childcare which also allows the caregiver to work (Settles et al., 2009), thus possibly negating some of the financial hardship associated with experiencing a transition. In Chapter 5, I will test this hypothesis by adding moderators to the family structure transition – financial stress mediation model to identify whether three aspects of the family context (i.e., household size, and living in a multigenerational or extended kin household) influence the financial stress associated with transitions in LMICs.

The inconsistent findings between the Young Lives countries and Ireland could be explained by the type of stressor used, rather than contextual differences, as family structure transitions may only be associated with specific types of financial stress. In the Young Lives data, the wealth index variable was used which is a multidimensional measure of socioeconomic status which assess households on three indicators of wealth (i.e., housing quality, access to services, and country-specific household items). In the GUI data, equivalised household income was used which categorised households into deciles from 1 (lowest 10% of household income) to 10 (highest 10% of household income). A multidimensional measure of financial stress might not be the best measure of stress for capturing changes in stress associated with family structure transitions. That is, parents and caregivers moving in or out of the household might affect other facets of financial stress such as household income, which was used in the GUI analyses, rather than what was measured in the wealth index variable (e.g., whether the household had electricity, or whether they owned a television or a mobile phone). There is evidence which suggests that the effects of parental separation on financial stress are smaller when a multidimensional measure of poverty is used, as opposed to a measure of income (Leturcq & Panico, 2019). This could be because parents prioritise their children when allocating resources, and so although household income may reduce following a family structure transition, children's standard of living (which is captured in multidimensional measures of poverty which ask households about their quality of living, access to resources

and services, etc) is relatively unaffected (Leturcq & Panico, 2019). Further, focusing solely on income fails to account for any benefits that families may receive (e.g., healthcare or childcare benefits), which may counteract the impacts of a reduced household income (Fusco et al., 2011). That being said, both parenting and financial stress mediated the family structure transition – child outcome relationship in the GUI data, which strengthens the evidence for the instability hypothesis in the Irish context, and suggests that there might be something else at play which could explain the null Young Lives findings aside from the type of stress variable used.

Alternatively, financial stress (no matter what type of measure is used) may not be the best way to conceptualise stress when testing the instability hypothesis. Although financial stress is the most common conceptualisation of stress in the existing literature (Hadfield, Amos, et al., 2018), a measure of psychological stress may be better suited because family structure transitions are likely to be psychologically stressful even if they are not associated with financial stress. That is, if a caregiver leaves the household, this may be psychologically stressful even if it does not lead to a reduction in household income. Unfortunately, a measure of psychological stress was not available in the Young Lives or GUI dataset, but the stress variables that were used (financial and parenting stress) are the most frequently used in the existing instability hypothesis literature (Hadfield, Amos, et al., 2018). This is advantageous because it allowed me to identify whether these stressors mediate the family structure transition – child outcome relationship in five countries which are not currently included in the existing instability hypothesis literature.

The lack of evidence for the instability hypothesis in the four Young Lives countries provide support for the hypothesis proposed in Chapter 3: when children are faced with other significant challenges (e.g., poverty, malnutrition, child labour), any potentially harmful implications of family structure transitions may be harder to detect because of the other challenges faced. This corresponds with evidence from the United States suggesting that more privileged children (i.e., White, from a middle- or upper income household) are more greatly impacted by family structure transitions than their less privileged counterparts (e.g., Bloome, 2017; Fomby et al., 2010; Ryan et al., 2015; Wu & Thompson, 2001). I found that financial stress was associated with worsened general physical health for children, but family structure transitions were not, which suggests that financial stress is a stronger determinant of children's development than family instability in Ethiopia, Peru, India, and Vietnam.

Therefore, in contexts where children are faced with substantial structural challenges, it is likely to be more beneficial to allocate resources towards tackling these challenges, rather than focusing interventions on promoting family stability.

4.4.1 Limitations

Despite using two high-quality datasets to test the instability hypothesis in countries not previously included in research in this area, these analyses have some limitations. One limitation of the analyses results from the large gaps between each round of data collection in both datasets (approximately three-to-four years); the analyses in this chapter examined whether changes in children's family structure from one round to another impacted financial stress at the subsequent round (e.g., whether a family structure transition that occurred between round one and two impacted financial stress at round two). The gaps between each round of data collection– and therefore the potentially large gaps between experiencing a family structure transition and financial stress – could explain the null findings in the Young Lives countries because the financial effects of family structure transitions may be short-term, and so families may have recovered from a transition that occurred potentially three to four years earlier. That being said, family structure transitions were associated with financial stress in the GUI study despite the gaps between each round of data collection being equally as large.

A further limitation is that the test of the instability hypothesis in this thesis is narrow; I included one stress variable in the Young Lives analyses (financial stress) and two in the GUI analyses (financial stress and parenting stress), and I tested two developmental outcomes (physical health and educational achievement). Family structure transitions are likely stressful in a number of ways (Wu & Martinson, 1993), and so it is possible that although these transitions are not associated with financial stress in the four Young Lives countries, they may be associated with other types of stress such as psychological stress. Unfortunately, there is not a perceived psychological stress variable in the Young Lives dataset, but this dataset was the only one available that allowed me to effectively address my research aims. To test the instability hypothesis more thoroughly in LMIC contexts, future research should consider using different conceptualisations of stress and a broader range of child outcomes to shed light on the specific ways in which family structure transitions may be stressful, and, in

turn, lead to negative outcomes for children in LMICs. To do this, there is a need for more high-quality longitudinal data on children and their families living in LMICs.

4.4.2 Conclusion

The analyses in this chapter tested the instability hypothesis in four LMICs. I also tested this hypothesis in Ireland to provide a high-income country comparison. Financial stress did not mediate the link between family structure transitions and children's physical health or educational achievement in Ethiopia, India, Peru, or Vietnam. Thus, the instability hypothesis was not supported in any of the four LMICs included in this study. Both financial and parenting stress mediated the link between family structure transitions and children's educational achievement in Ireland. Similar to the findings in Chapter 3, this suggests that family structure transitions may have differing effects depending on the context. This provides more evidence for the need to investigate the family instability in a wider variety of contexts than are currently studied. The results also strengthen the argument that the stress associated with family structure transitions is variable; there is a need to understand why transitions lead to stress in some circumstances but not others. To test this, Chapter 5 will extend the instability hypothesis by adding moderator variables to the family structure transition – stress relationship to uncover the specific circumstances under which transitions lead to stress.

Chapter 5: Moderators of the Instability Hypothesis

5.1 Introduction

The third aim of my research was to test and extend the instability hypothesis. In Chapter 4, I tested the instability hypothesis in four low- and middle-income countries (LMICs). I then compared these findings to a high-income country not previously included in the instability hypothesis literature – Ireland. In this chapter, I will examine the stress associated with family structure transitions by adding moderator variables to the transition – stress relationship, thus extending the instability hypothesis. Specifically, I will include moderators which capture aspects of the family context (i.e., household size, and living in a multigenerational or extended kin household) and family relationship quality (i.e., conflict and closeness in the child-caregiver and interparental relationships). The chapter will begin by reviewing the evidence for the instability hypothesis and proposing potential moderators in the family structure transition – stress relationship. The datasets and moderated mediation analysis conducted will then be described. The chapter will end by outlining and discussing the findings.

5.1.1 Evidence for the Instability Hypothesis

The results from Chapter 4 were equally as mixed as the broader instability hypothesis literature (Hadfield, Amos, et al., 2018): financial stress mediated the link between family structure transitions and children's educational achievement in Ireland, but no mediation effects were found in Ethiopia, India, Peru, or Vietnam. This suggests that family structure transitions are not always stressful, and therefore there are likely specific circumstances under which these transitions lead to stress and worsened child outcomes. This chapter aims to understand the specific circumstances under which family structure transitions are more or less stressful by running moderated mediation analyses with moderators on the transition – stress pathway (aim three).

5.1.2 Potential Moderators of the Instability Hypothesis

5.1.2.1 Family Context

It is well established that social support (e.g., instrumental, emotional) can act as a protective buffer against stress (Cohen & Wills, 1985). More specifically, social support can buffer against the stress experienced in the family context (Amato, 2000; Hill, 1958; McCubbin & Patterson, 1983), such as the stress associated with experiencing a family structure transition. Therefore, we might expect that families who have greater social support may experience lower stress following a family structure transition than those who have less social support. One proximate avenue through which families could seek support is through other household members.

As was demonstrated in Chapter 3, the amount of social support available to families within the household differs across the five countries studied in this thesis; families in Ireland tend to have smaller household sizes and are less likely to live in multigenerational or extended kin households than families in Ethiopia, India, Peru, or Vietnam. So, Irish families may have fewer sources of social support within their households from which to draw. This difference in support may explain why family structure transitions were associated with stress in Ireland, but not in the four LMICs. To test whether the types of households that people live in (i.e., the family context) influences the stress associated with family structure transitions, I will run three separate moderated mediation analyses with three family context variables (household size, living in a multigenerational household, and living in an extended kin household) moderating the transition – stress pathway (Figure 5.1.). I will run this analysis using both the Young Lives and Growing Up in Ireland (GUI) datasets.

Figure 5.1.

A Moderated Mediation to Extend the Instability Hypothesis in the Young Lives and GUI

Datasets
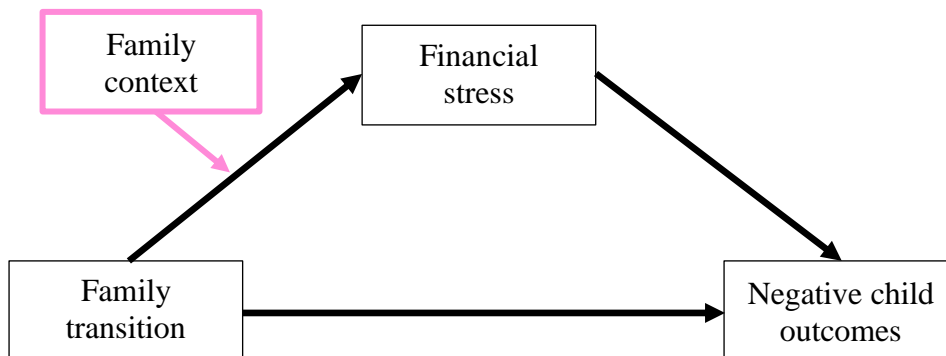
Note. The part of the model highlighted in pink represents the analysis conducted in this chapter.

5.1.2.2 Family Relationship Quality

Family structure transitions are processes that unfold over time, rather than isolated events (Cao et al., 2022; Coleman & Glenn, 2010). Therefore, the family environment following a family structure transition is likely to influence how stressful they are. The double ABC-X model of family stress and adaptation theorises that family functioning influences families' adjustment to stressors (McCubbin & Patterson, 1983). Theories emerging from the qualitative literature also suggest that family relationship quality influences how families experience family instability (Hadfield & Nixon, 2018). To examine these themes quantitatively, moderated mediation analyses will be conducted to determine whether family relationship quality (i.e., child-caregiver and interparental conflict and closeness) influences the stress associated with family structure transitions (Figure 5.2.). I will run this analysis using the GUI dataset which includes a rich set of family relationship quality variables – these variables will be described in detail in the Methods section. The Young Lives data does not include this type of information, and so these analyses will not be run in this dataset.

Figure 5.2.

A Moderated Mediation to Extend the Instability Hypothesis in the GUI Dataset
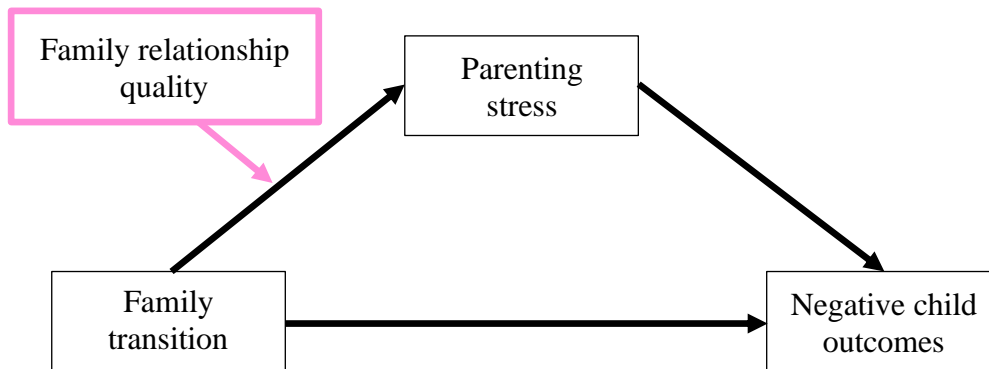
Note. The part of the model highlighted in pink represents the analysis conducted in this chapter.

5.1.3 Research Aims and Hypotheses

The aim of this chapter is to extend the instability hypothesis using data from five low-, middle-, and high-income countries: Ethiopia, India, Peru, Vietnam, and Ireland (aim three). The Young Lives and GUI datasets will be used. In both datasets, I will run a moderated mediation with family context variables (i.e., household size and living in a multigenerational or extended kin household) included as moderators on the family structure transition – financial stress pathway. In the GUI dataset, I will run a moderated mediation with family relationship quality variables (i.e., conflict and closeness in the child-caregiver and interparental relationships) included as moderators on the family structure transition – parenting stress pathway. Neither a parenting stress variable or family relationship quality variables were available in the Young Lives data, and so the analyses with family relationship quality moderators were not conducted in this dataset.

I hypothesise that living in a larger household, in a multigenerational household, or an extended kin household will reduce the financial stress associated with family structure transitions, because the additional household members could provide support (e.g., childcare, money) which could buffer against the financial stress caused by a transition (Amato, 2000; McCubbin & Patterson, 1983). I hypothesise that having high closeness or low conflict in the child-caregiver relationships will reduce the parenting stress associated with family structure transitions, because having close, warm family relationships could reduce parenting stress,

whereas having conflicted family relationships could compound the stress of experiencing a transition. I do not have a directional hypothesis about caregiver relationship satisfaction, because a transition *into* a highly satisfied relationship might reduce stress, but a transition *out of* a highly satisfied relationship might increase stress.

5.2 Methods

5.2.1 Data

5.2.1.1 The Young Lives Study

Five rounds of younger cohort data (ages 1 to 15) from the Young Lives study were used (N = 8,062). The household and child questionnaires were used to identify family structure transitions, financial stress, family context (i.e., household size, living in a multigenerational household, and living in an extended kin household), and children's outcomes. The exclusion criteria were the same as Chapters 3 and 4. The final analytic sample was N = 7,143 (N = 1,650 in Ethiopia, N = 1,728 in India, N = 1,895 in Peru, and N = 1,870 in Vietnam).

5.2.1.2 The Growing Up in Ireland (GUI) Study

Three rounds of child cohort data (ages 9 to 17/18) from the GUI study were used (N = 8,568). The primary caregiver and study child questionnaires were used to obtain information about family structure transitions, financial and parenting stress, family context, family relationship quality, and children's outcomes. The exclusion criteria were the same as Chapters 3 and 4. The final analytic sample was N = 7,294.

5.2.2 Measures

The same family structure transition, general physical health, educational achievement, financial and parenting stress, and control variables used in Chapters 3 and 4 were also used in this Chapter.

5.2.2.1 Family Context

The family context variables represented characteristics of the household that the child was living in. In the Young Lives analysis, three separate family context variables were used: household size, living in a multigenerational household, and living in an extended kin household. Household size was a primary-caregiver-reported count of the number of people living in the household at each round. Multigenerational household was whether a grandparent(s) lived in the household at each round. Extended kin household was whether an aunt/uncle(s) lived in the household at each round. The primary-caregiver-reported household rosters were used to determine whether a grandparent(s) or aunt/uncle(s) lived in the household. The same moderator variables were used in all four countries. Household size was added as a moderator in the GUI data. Identical to the Young Lives data, household size was a primary-caregiver-reported count of the number of people living in the household at each round. Multigenerational household and extended kin household were not included as moderators in the GUI analysis, because the number of people living in a multigenerational or extended kin household who had experienced a family structure transition was too small ($n < 30$).

5.2.2.2 Family Relationship Quality

In the GUI analyses, nine separate family relationship quality variables were added as moderators to the family structure transition – parenting stress pathway: interparental arguing, interparental shouting, interparental physical abuse, primary caregiver romantic relationship satisfaction, secondary caregiver romantic relationship satisfaction, child-primary caregiver conflict, child-primary caregiver closeness, child-secondary caregiver conflict, and child-secondary caregiver closeness. Interparental arguing was measured using one item which asked the primary caregiver "Roughly how often do you and your spouse/partner argue?". Scores ranged from 1 (most days) to 5 (never), with a higher score indicating less arguing. Interparental shouting was measured using one item which asked the primary caregiver "When you and your partner argue, how often do you shout or yell at each other?". Scores ranged from 1 (almost never/never), to 5 (almost always/always), with a higher score indicating more parental shouting. Interparental physical abuse was created by combining two primary-caregiver-reported items: "When you and your partner argue, how often do you throw something at each other?" and "When you and your partner argue, how

often do you push, hit, or slap each other?". These items were scored from 1 (almost never/never), to 5 (almost always/always), with a higher score indicating more physical abuse. The same variables were used to measure interparental arguing, shouting, and physical abuse at every round.

Both primary and secondary caregiver's relationship satisfaction was measured using the Dyadic Adjustment Scale (Spanier, 1976). The original scale consists of 32 items, but a seven-item version was used in the GUI study (Nixon, 2012; Sharpley & Rogers, 1984), which has good reliability in the sample (Murphy et al., 2019). Three of the items asked how often they agree or disagree on certain issues (e.g., "amount of time spent together"). Three of the items ask about how often certain events occur within the relationship (e.g., "have a stimulating exchange of ideas"). These items were rated on a five-point scale from 1 (low) to 5 (high). One item asks them to rate the degree of happiness in their relationship from 0 (extremely unhappy), to 6 (perfect) (primary caregiver: M at round 2 = 16.65, SD at round 2 = 3.00, M at round 3 = 16.35, SD at round 3 = 3.09, secondary caregiver: M at round 2 = 16.77, SD at round 2 = 2.90, M at round 3 = 16.52, SD at round 3 = 3.02). A higher score indicates higher relationship satisfaction. This variable was used at all rounds.

Child-primary caregiver conflict and closeness were measured using the primary caregiver-reported Pianta Child-Parent Relationship Scale (Pianta, 1992) in rounds one and two. This scale is an adaption of the Student-Teacher Relationship Scale. The original scale includes 30 items, but the GUI study used the 15-item version of the scale (Nixon, 2012) which has been used in other large cohort studies (e.g., the UK Millennium Cohort Study (Wise, 2003)), and has good reliability for both the primary and secondary caregiver in the GUI sample (Thornton et al., 2016). The scale includes items which measure closeness (e.g., "I share a warm, affectionate relationship with my child") and conflict (e.g., "Dealing with my child drains my energy"). Items are rated on a five-point scale from 1 (definitely does not apply) to 5 (definitely applies). Separate scores are created to measure each of the constructs. A higher score on the conflict items indicates higher levels of child-caregiver conflict, and a higher score on the closeness items indicates higher levels of child-caregiver closeness. The secondary caregiver completed the same scale to report on levels of child-secondary caregiver conflict and closeness in rounds one and two (primary caregiver closeness: M = 44.81, SD = 3.82 (round one), M = 32.11, SD = 3.28 (round two); primary caregiver conflict: M = 21.76, SD = 8.50 (round one), M = 15.13, SD = 6.39 (round two); secondary caregiver

closeness: $M = 43.86$, $SD = 4.17$ (round one), $M = 30.57$, $SD = 3.73$ (round two); secondary caregiver conflict: $M = 21.77$, $SD = 7.75$ (round one), $M = 14.98$, $SD = 5.84$ (round two)). In round three (age 17/18), conflict and closeness were measured using the Networks of Relationships Inventory (Furman & Buhrmester, 1985), which has good reliability in the GUI sample (Williams et al., 2019). Unlike rounds one and two where the primary and secondary caregivers reported on their relationship with the study child, in round three the child reported on their relationships with their mother and father. Each of the subscales (i.e., "conflict" and "intimacy") consisted of two items which ask the child how often the following things happened between them and their mother/father on a five-point scale from 1 (never), to 5 (always) (e.g., "How often do…you disagree and quarrel", "How often do…you share your secrets and private feelings with [mother/father]") (mother intimacy: $M = 6.14$, $SD = 1.99$, mother conflict: $M = 5.30$, $SD = 1.57$, father intimacy: $M = 5.15$, $SD = 1.99$, father conflict: $M = 5.00$, $SD = 1.69$). Due to the change in scale between rounds two and three, scores were standardised using z-scores. Therefore, the scores represent how conflict and closeness changes relative to other child-primary caregiver and child-secondary caregiver dyads in the sample (i.e., whether they are more or less close, or have more or less conflicted relationships, compared to other dyads in the sample).

5.2.3 Data Analysis

Multilevel moderated mediation using Linear Mixed Models (LMMs) were used to determine whether family context and family relationship quality influenced the financial and parenting stress associated with family structure transitions. The predictor variable of interest was family structure transitions. The outcome variables were children's general physical health and educational achievement. The mediator variable was stress, conceptualized as financial stress (Young Lives and GUI analysis) and parenting stress (GUI analysis). Three family context variables were added to three separate models as a moderators to the family structure transition – financial stress relationship (Young Lives and GUI) (Figure 5.3.). Multigenerational household and extended kin household were not included in the GUI analysis due to small cell sizes ($n < 30$). Nine family relationship quality variables were added to nine separate models as moderators to the family structure transition – parenting stress relationship (GUI) (Figure 5.4.). I looked at the interaction between family structure transitions from one round to another (e.g., from round one to two) and the moderator at the subsequent round (e.g., at round two).

Because the scales used to measure child-caregiver conflict and closeness asked about the primary and secondary caregiver in rounds one and two, and about the mother and father in round three, I filtered the data when running these analyses so that only those who had a female primary caregiver (for the child-primary caregiver analyses), and a male secondary caregiver (for the child-secondary caregiver analyses) were included. So, the primary caregiver analyses included mothers or other female primary caregivers, and the secondary caregiver analyses included fathers or other male secondary caregivers.

Figure 5.3.

A Moderated Mediation Examining the Relationship between Family Structure Transitions, Family Context, Financial Stress, and Children's Outcomes (Young Lives and GUI Analysis)
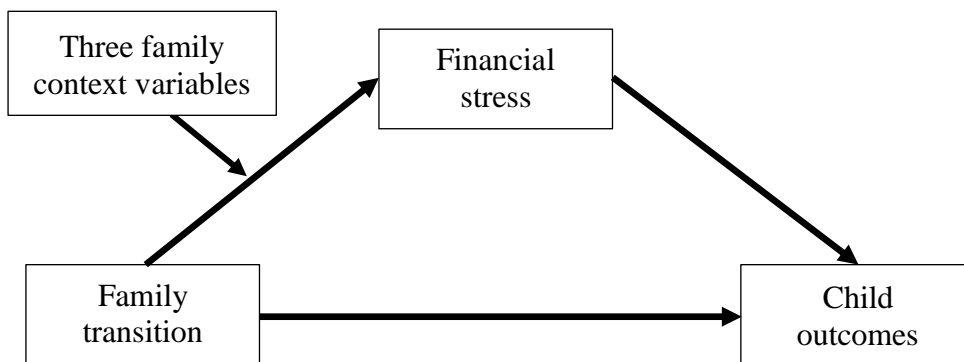
Figure 5.4.

A Moderated Mediation Examining the Relationship between Family Structure Transitions, Family Relationship Quality, Parenting Stress, and Children's Outcomes (GUI Analysis)
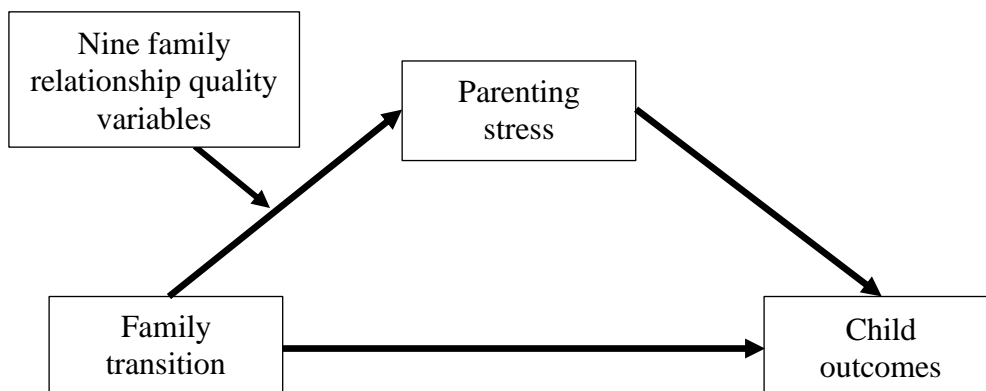
5.3 Results

5.3.1 Family Context

In Chapter 4, I found that financial stress did not mediate the link between family structure transitions and children's outcomes in any of the four Young Lives countries. Both financial stress and parenting stress mediated the link between family structure transitions and children educational achievement (i.e., maths and literacy scores) in Ireland.

Household size moderated the relationship between family structure transitions and financial stress in Peru and Vietnam, but not in Ethiopia, India, or Ireland, although the effect sizes are very small (Figures 5.5. – 5.7.). Specifically, family structure transitions were less financially stressful in Peru and Vietnam when household size was larger.

Figure 5.5.

Multilevel Moderated Mediation using Linear Mixed Models with Household Size as the Moderator in the Family Structure Transition – Financial Stress Relationship
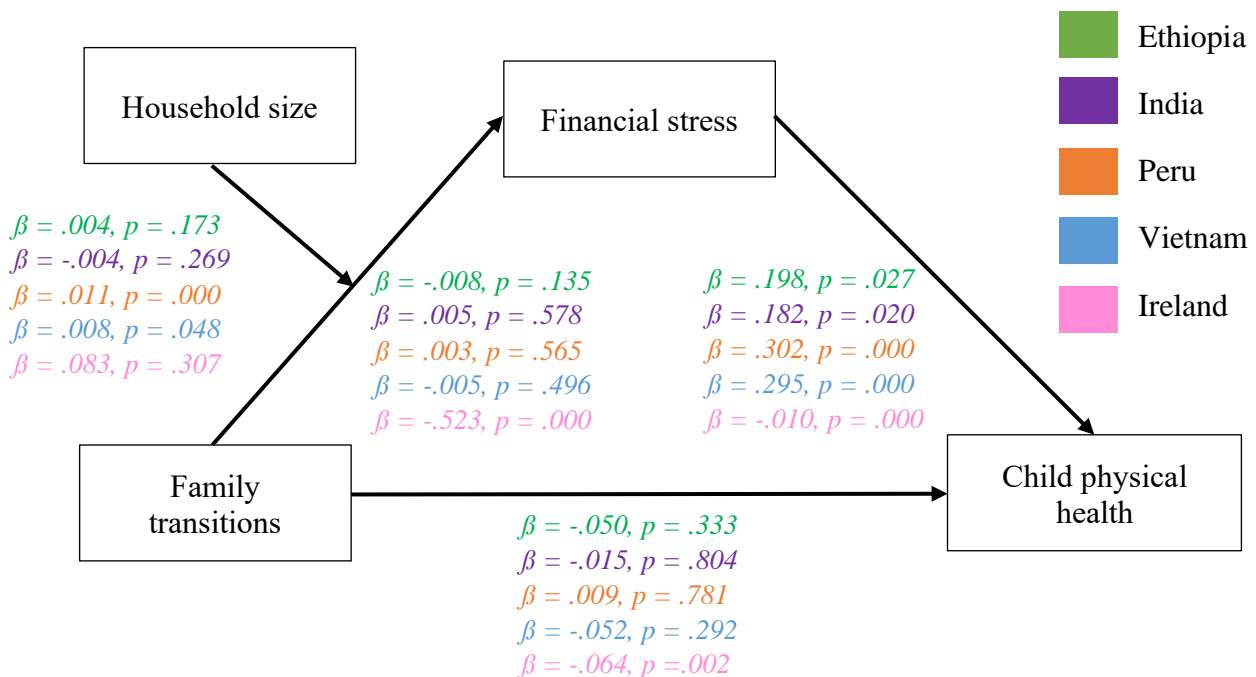
Note. Although the term "financial stress" is used, increases in the measures (i.e., the wealth index variable and equivalised household income) correspond with lower levels of financial stress. A higher score indicates better physical health in the Young Lives analyses, and a lower score indicates better physical health in the GUI analyses.[7]

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[7] Results are based on analysis of strictly controlled Research Microdata Files provided by the Central Statistics Office (CSO). The CSO does not take any responsibility for the views expressed or the outputs generated from this research.

Figure 5.6.

Two-Way Interaction between Family Structure Transitions and Household Size in Peru
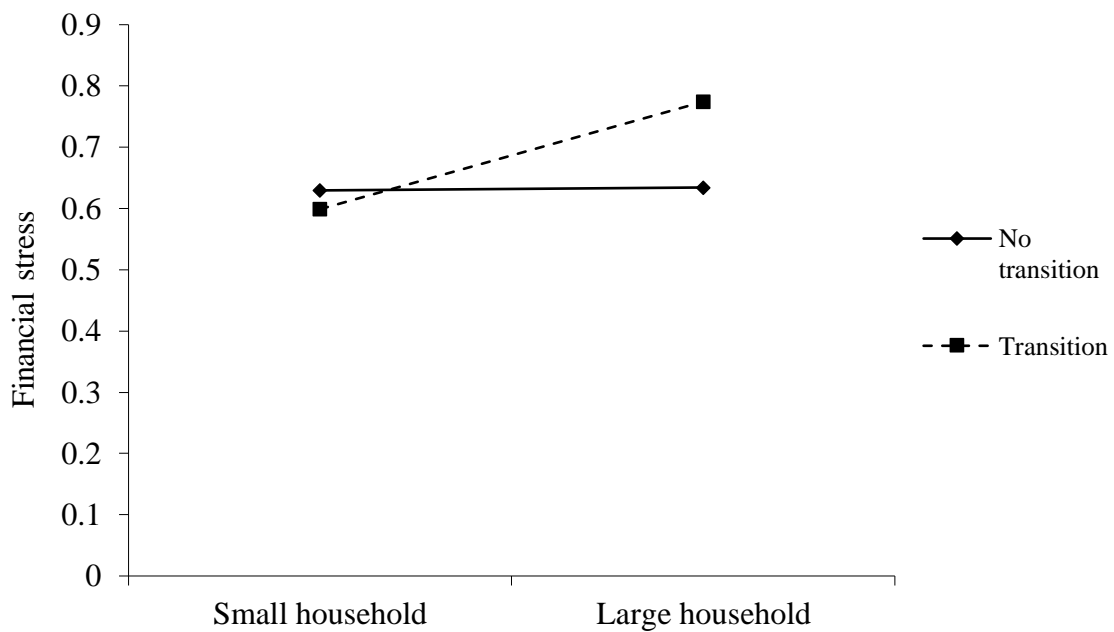
Note. Although the term "financial stress" is used, increases in the measure (i.e., the wealth index variable) corresponds with lower levels of financial stress.

Figure 5.7.

Two-Way Interaction between Family Structure Transitions and Household Size in Vietnam
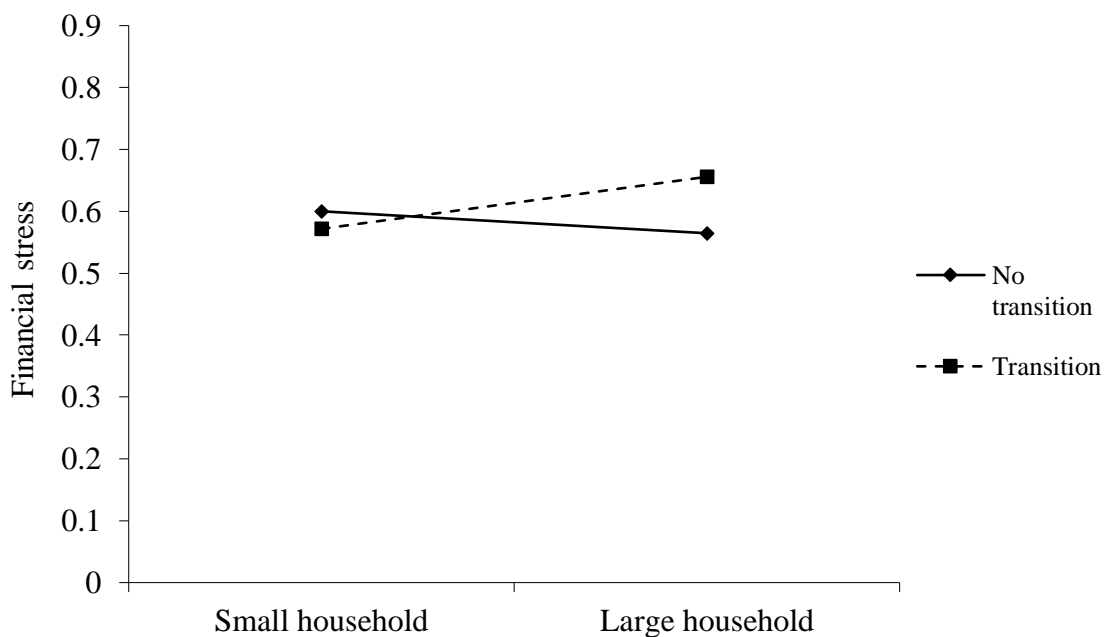
Note. Although the term "financial stress" is used, increases in the measure (i.e., the wealth index variable) corresponds with lower levels of financial stress.

In Peru, living in a multigenerational household and in an extended kin household moderated the relationship between family structure transitions and financial stress, although the effect sizes are small (Figures 5.8. – 5.11.). That is, when children lived in a multigenerational household or in an extended kin household in Peru, family structure transitions were less financially stressful. These moderations were not statistically significant in any of the other three Young Lives countries ($ps > .05$).

Figure 5.8.

Multilevel Moderated Mediation using Linear Mixed Models with Multigenerational Household as the Moderator in the Family Structure Transition – Financial Stress Relationship
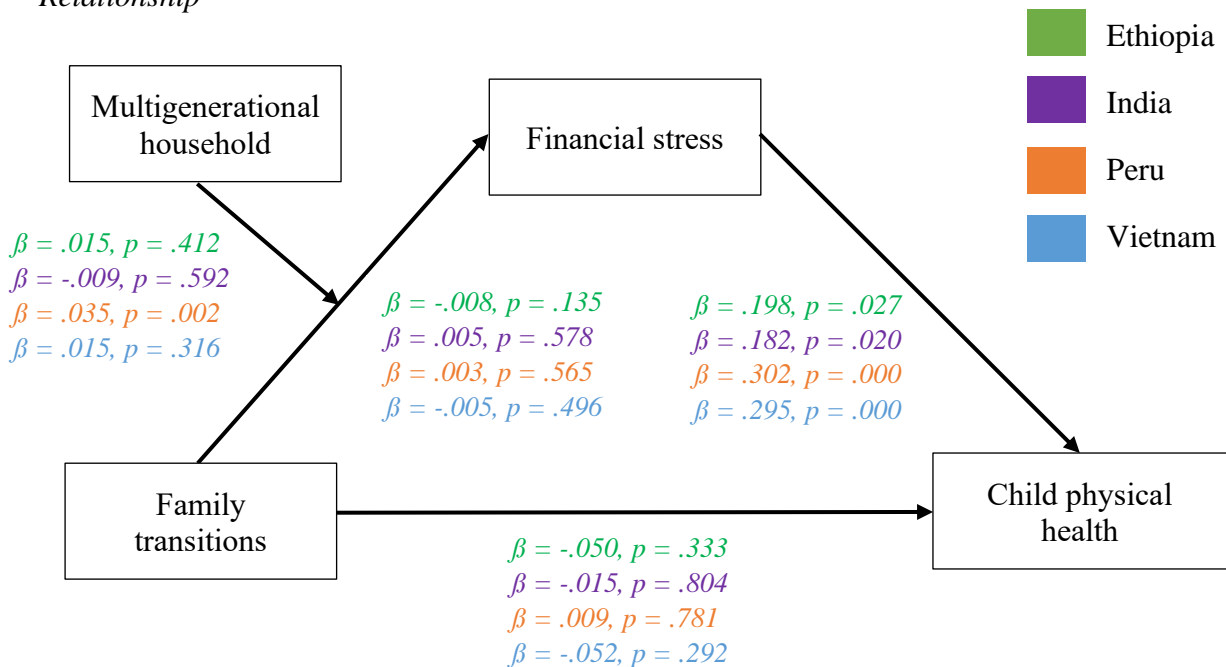
Note. Although the term "financial stress" is used, increases in the measure (i.e., the wealth index variable) corresponds with lower levels of financial stress. A higher score indicates better physical health.

Figure 5.9.

Two-Way Interaction between Family Structure Transitions and Multigenerational Household in Peru
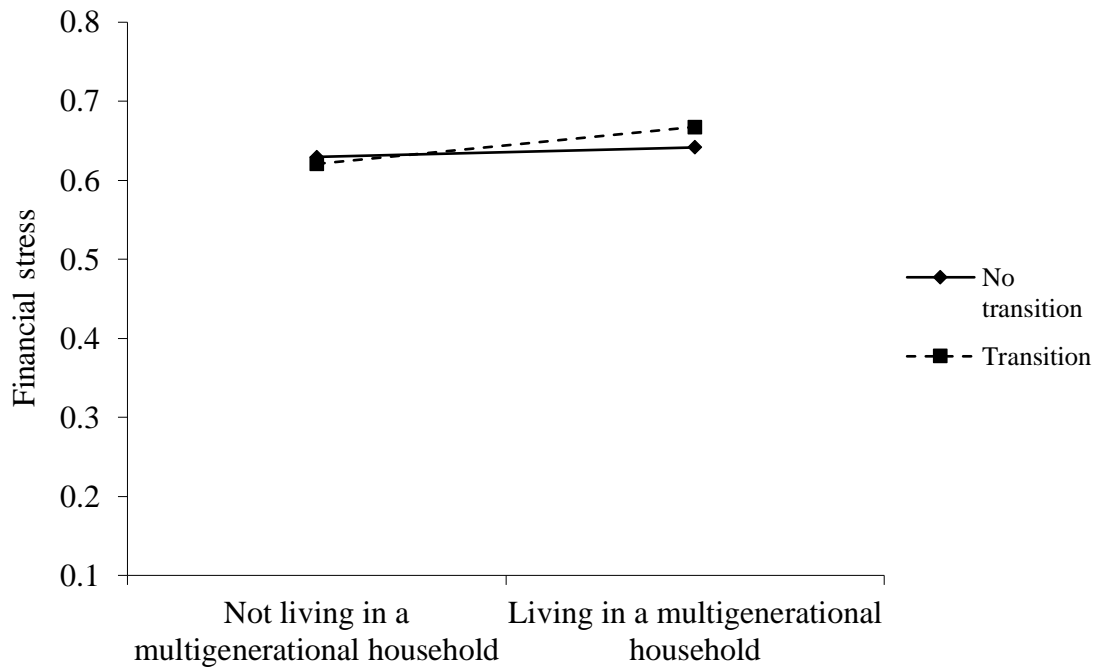
Note. Although the term "financial stress" is used, increases in the measure (i.e., the wealth index variable) corresponds with lower levels of financial stress.

Figure 5.10.

Multilevel Moderated Mediation using Linear Mixed Models with Extended Kin Household as the Moderator in the Family Structure Transition – Financial Stress Relationship
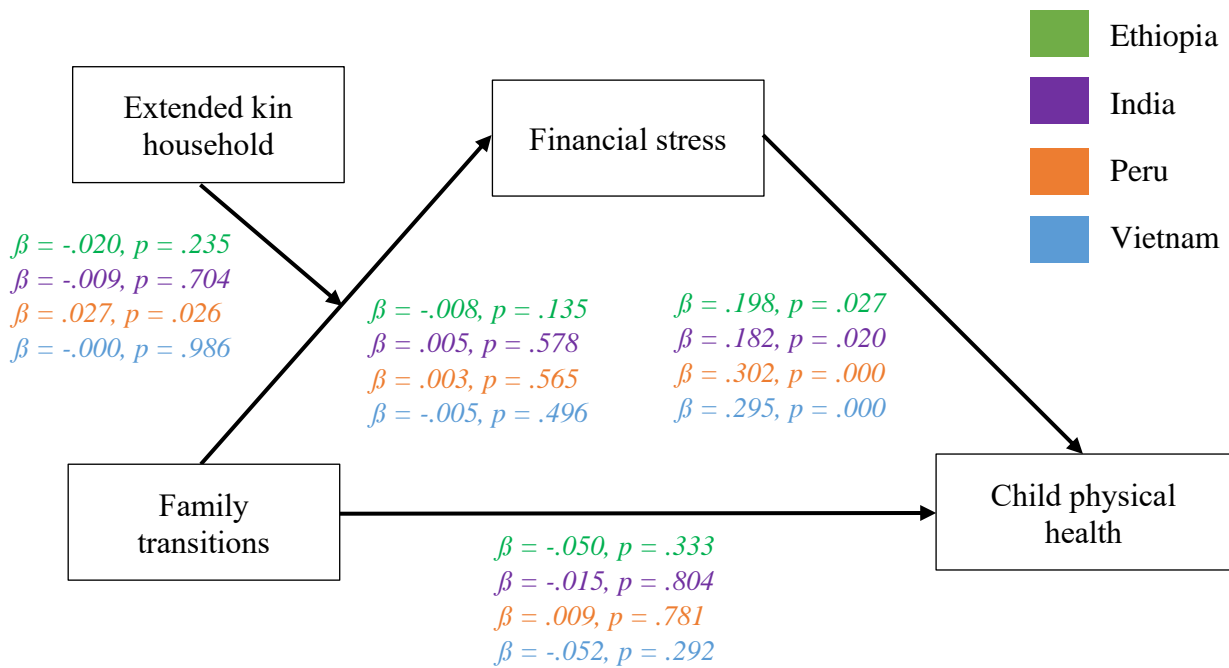
Note. Although the term "financial stress" is used, increases in the measure (i.e., the wealth index variable) corresponds with lower levels of financial stress. A higher score indicates better physical health.

Figure 5.11.

Two-Way Interaction between Family Structure Transitions and Extended Kin Household in
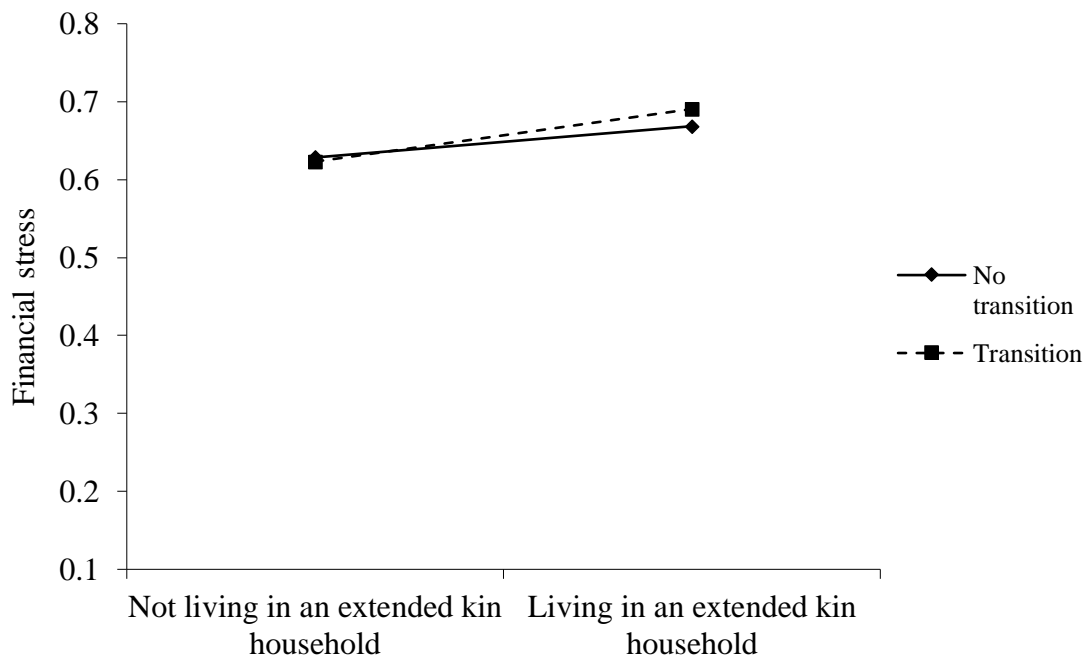
Peru

Note. Although the term "financial stress" is used, increases in the measure (i.e., the wealth index variable) corresponds with lower levels of financial stress.

5.3.2 Family Relationship Quality

In the GUI analysis, when the nine family relationship quality moderators were added to nine separate models, child-primary caregiver and child-secondary caregiver conflict and closeness moderated the relationship between family structure transitions and parenting stress. The pattern of results was the same for both the primary and secondary caregivers. When child-primary caregiver and child-secondary caregiver closeness was low, family structure transitions were associated with more parenting stress (Figures 5.12. – 5.15.).

Figure 5.12.

Multilevel Moderated Mediation using Linear Mixed Models with Child-Primary Caregiver Closeness as a Moderator in the Family Structure Transitions – Parenting Stress relationship

```
┌─────────────────┐                ┌─────────────────┐
│  Child-primary  │                │                 │
│    caregiver    │                │ Parenting stress│
│    closeness    │                │                 │
└─────────────────┘                └─────────────────┘

ß = -.440, p = .006

                    ß = .783, p = .000      ß = -.009, p = .000

┌─────────────────┐                                      ┌─────────────────┐
│     Family      │                                      │  Child literacy │
│   transitions   │                                      │                 │
└─────────────────┘   ᵃß = -.126, p = .001   ᵇß = -.120, p = .001 └──────────┘
```
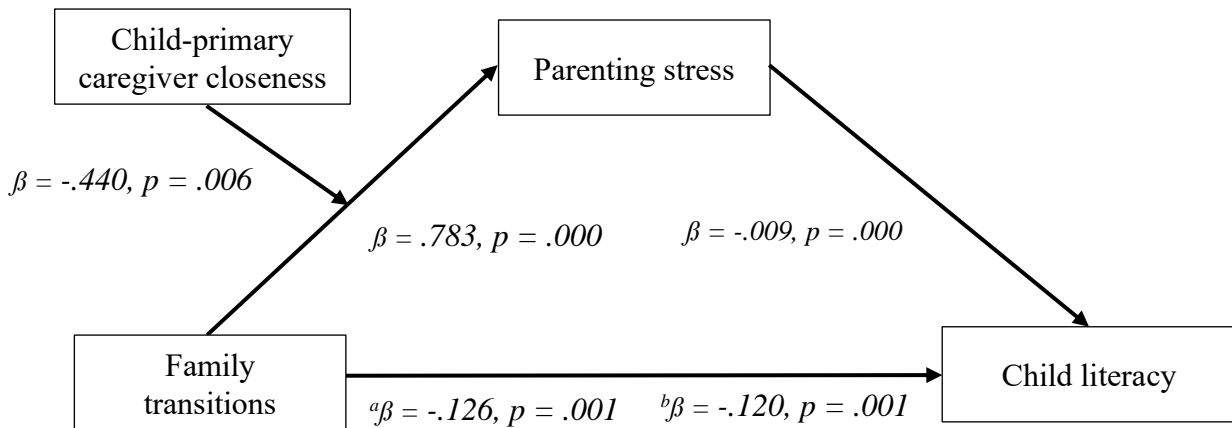
Note. ᵃBeta before the mediation was included in the model, ᵇBeta after the mediation was included in the model.[8]

Figure 5.13.

Two-Way Interaction between Family Structure Transitions and Child-Primary Caregiver Closeness[8]
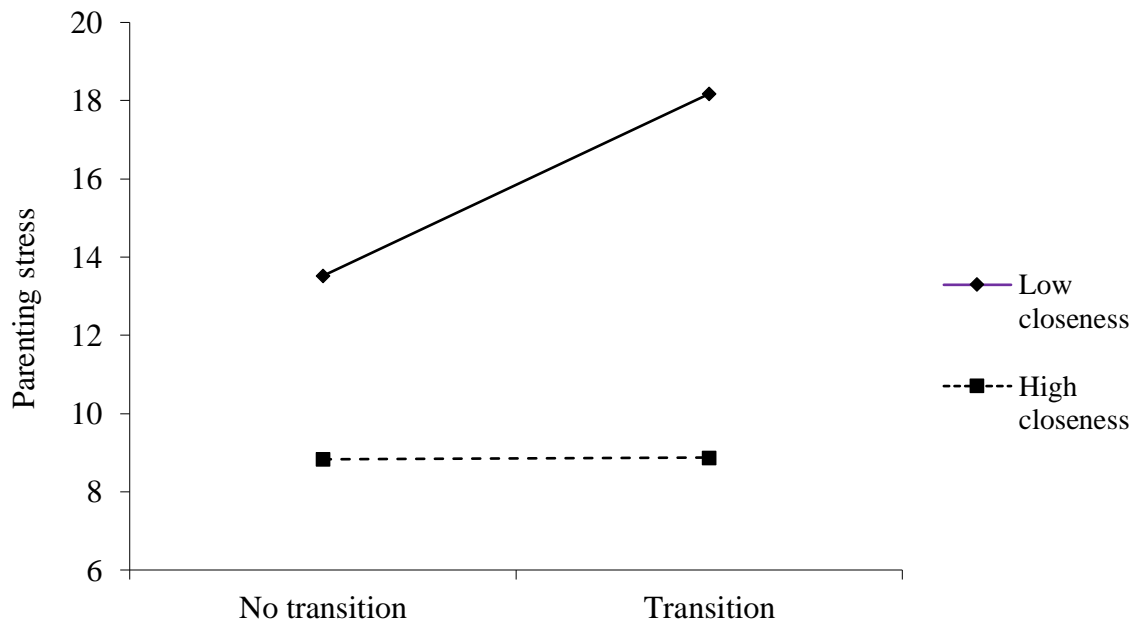
Figure 5.14.

Multilevel Moderated Mediation using Linear Mixed Models with Child-Secondary Caregiver Closeness as a Moderator in the Family Transitions – Parenting Stress relationship
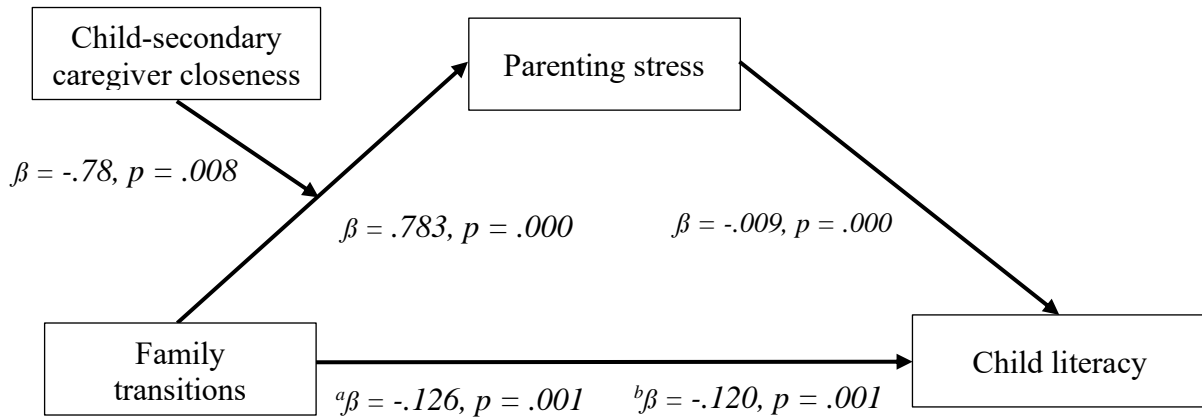
Note. [a]Beta before the mediation was included in the model, [b]Beta after the mediation was included in the model.[9]

Figure 5.15.

Two-Way Interaction between Family Structure Transitions and Child-Secondary Caregiver Closeness [9]
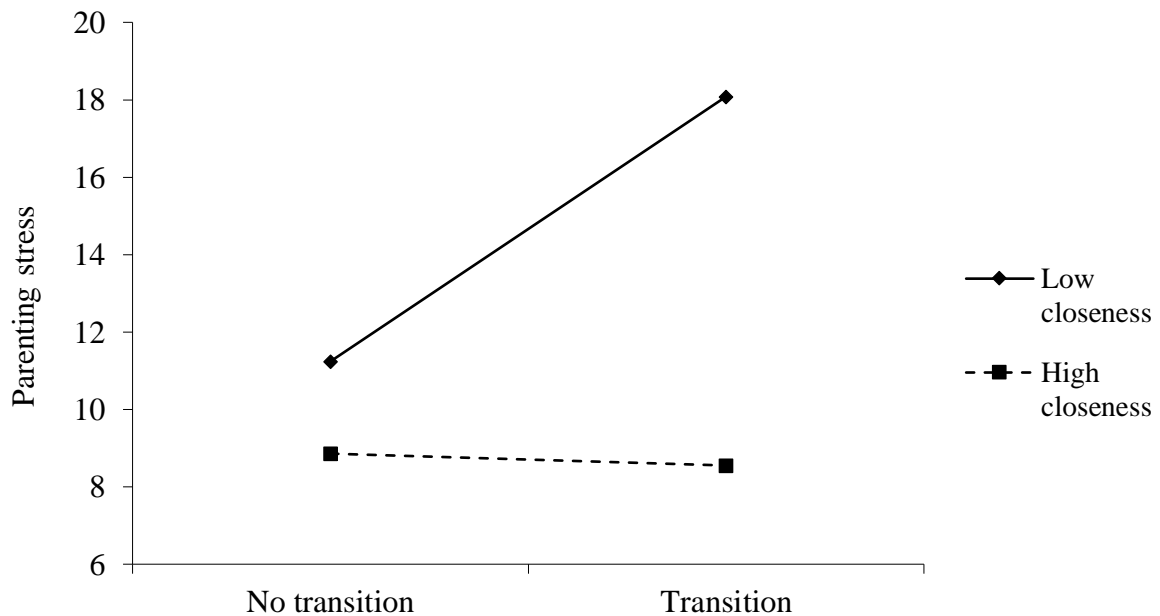
When child-primary caregiver and child-secondary caregiver conflict was high, experiencing a family structure transition was associated with more parenting stress (Figures 5.16. – 5.19.).

Figure 5.16.

Multilevel Moderated Mediation using Linear Mixed Models with Child-Primary Caregiver Conflict as a Moderator in the Family Transitions – Parenting Stress relationship
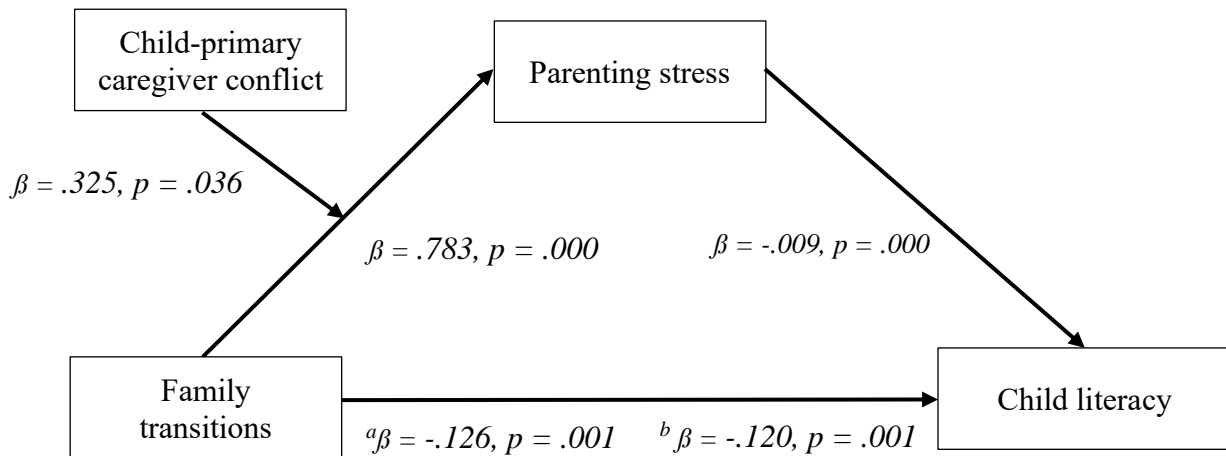
Note. [a]Beta before the mediation was included in the model, [b]Beta after the mediation was included in the model.[10]

Figure 5.17.

Two-Way Interaction between Family Structure Transitions and Child-Primary Caregiver Conflict [11]
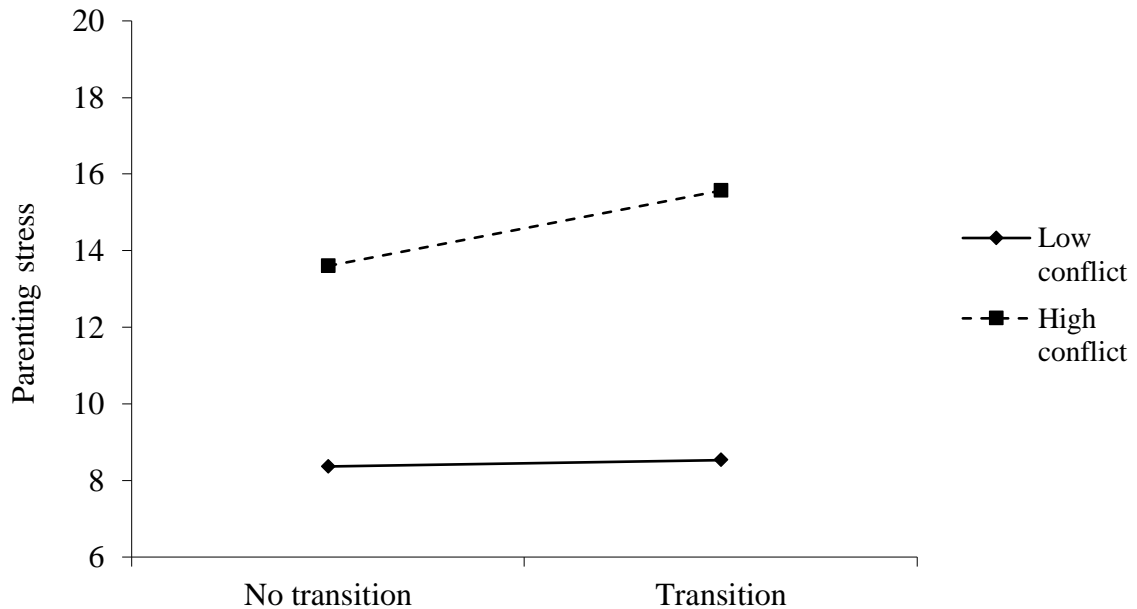
Figure 5.18.

Multilevel Moderated Mediation using Linear Mixed Models with Child-Secondary caregiver Conflict as a Moderator in the Family Transitions – Parenting Stress relationship
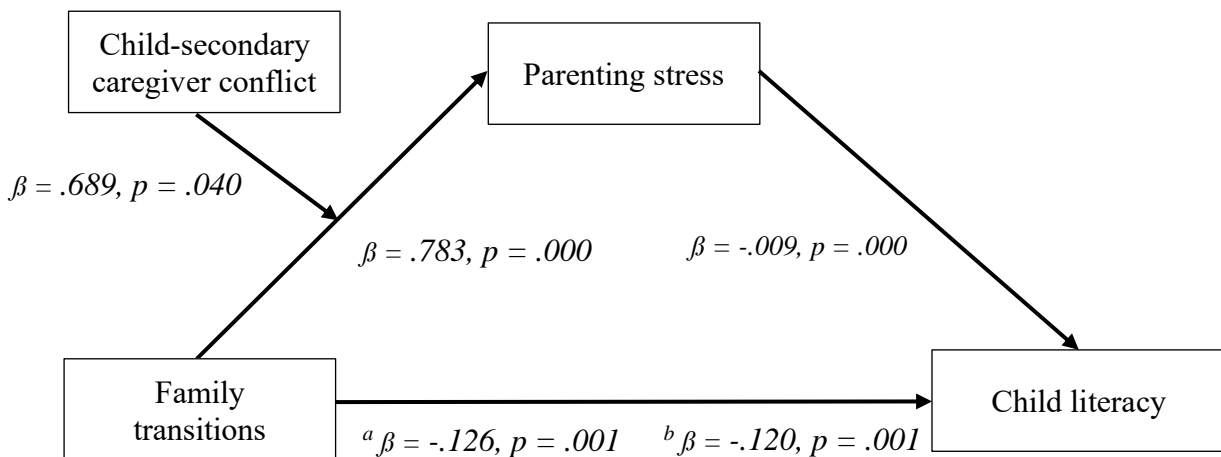
Note. [a]Beta before the mediation was included in the model, [b]Beta after the mediation was included in the model. [11]

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[11] Results are based on analysis of strictly controlled Research Microdata Files provided by the Central Statistics Office (CSO). The CSO does not take any responsibility for the views expressed or the outputs generated from this research.

Figure 5.19.

Two-Way Interaction between Family Structure Transitions and Child-Primary Caregiver Conflict[12]
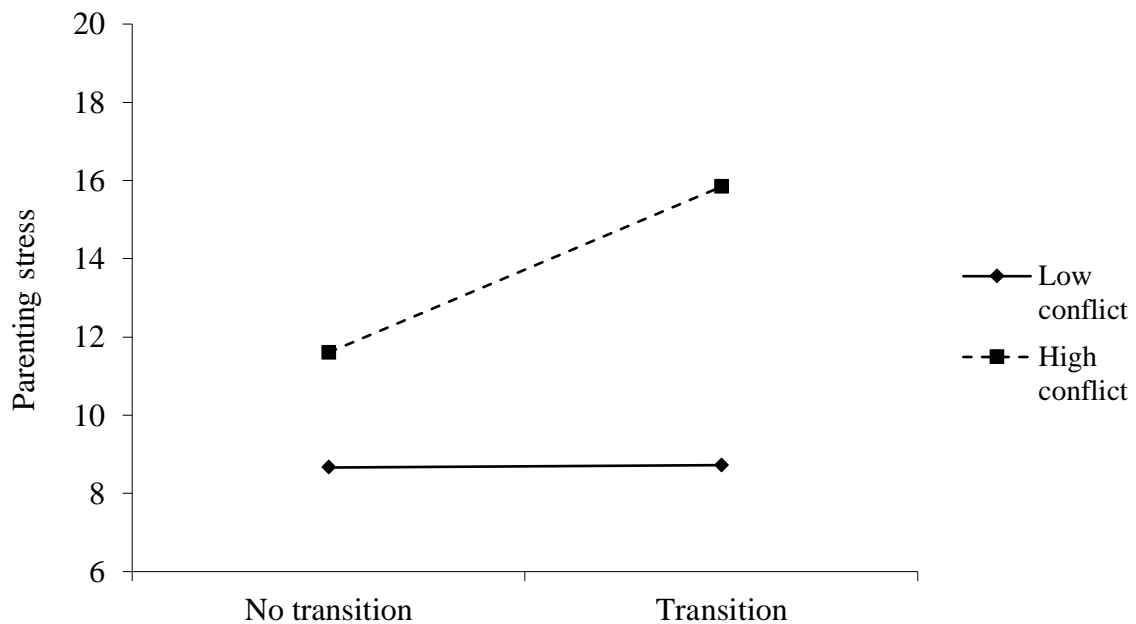
5.4 Discussion

The analyses in this chapter identified moderators of the instability hypothesis, shedding light on some of the potential mechanisms behind the mixed instability hypothesis literature (aim three). In line with my hypothesis, family structure transitions were less financially stressful in larger households in Peru and Vietnam, and in multigenerational and extended kin households in Peru, although the effect sizes were small. The level of conflict and closeness between children and their caregivers also influenced the parenting stress associated with family structure transitions in Ireland. Together, this suggests that aspects of the family context and family relationship quality can ameliorate the unfavourable outcomes associated with family structure transitions.

Living in a larger household acted as a protective factor against the financial stress associated with family structure transitions in Peru and Vietnam. This is congruent with research in Peru which suggests that living in a multiple-family household (i.e., households which include

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[12] Results are based on analysis of strictly controlled Research Microdata Files provided by the Central Statistics Office (CSO). The CSO does not take any responsibility for the views expressed or the outputs generated from this research.

more than one couple and their children, and therefore households with a greater number of people in them) reduces the likelihood of being poor (Cuesta et al., 2017). Having more people in the household could provide parents with more potential sources of instrumental support (e.g., childcare, money) which could reduce the financial burden of experiencing a family structure transition. This is particularly likely in more collectivistic cultures such as Peru and Vietnam (Hofstede, 2022b), where familial support during stressful life events is more common (Goodwin & Hernandez Plaza, 2000). Larger households may also have a protective effect due to the *types* of transitions that they are likely to experience; larger households may be more likely to have experienced family structure transitions involving the entrance of a caregiver (e.g., remarriage, a cohabiting partner moving into the household) rather than the exit of a caregiver. However, the analyses in Chapter 4 revealed that relationship formations were not associated with financial stress in any of the four Young Lives countries.

In addition to the size of the household, the types of people living in the household also matters. Living in the same household as a grandparent(s) and extended kin (i.e., aunts/uncles) reduced the financial stress associated with family structure transitions in Peru, the country with the highest income status of the Young Lives countries (upper-middle). This is in line with research which suggests that grandparents are better equipped to provide support in more wealthy areas (Furstenberg, 2019). Indeed, research has shown that older adults' pensions account for a sizable proportion of household income in Peru (Prince et al., 2016). Evidence from the United States suggests that family members are more likely to ask extended kin for practical support than financial support (Napolitano et al., 2020), so extended kin might be able to provide childcare which allows parents to work and therefore lessen the financial implications of experiencing a transition. In more disadvantaged contexts such as the other three Young Lives countries, household members may be less equipped to provide support than in more advantaged countries, such as Peru.

Child-caregiver closeness and conflict moderated the family structure transition – parenting stress relationship. More specifically, when levels of closeness between children and their caregivers was low, family structure transitions were associated with more parenting stress. Additionally, when children had more conflicted relationships with their caregivers, family structure transitions were associated with more parenting stress. These findings support theory emerging from the qualitative literature which suggests that family relationship quality

influences how family structure transitions are experienced (Hadfield & Nixon, 2018). They are also in line with research finding that child-parent relationship quality influences the effects of relationship breakdown on children (Mooney et al., 2009). This could have useful practical implications for interventions aimed at supporting families experiencing instability, because it suggests that the impacts of transitions can be ameliorated by fostering a close, warm child-caregiver relationships.

5.4.1 Limitations

The analyses in this chapter used data from two high-quality longitudinal studies to examine the stress associated with family structure transitions, but this approach did have some limitations. First, the Young Lives data did not include information on family relationship quality, so it was not possible to compare the GUI results with LMIC contexts. The findings may have differed in the Young Lives countries where multigenerational and extended kin household are more common, because the child is more likely to have access to multiple sources of care and support which could reduce the importance of the child-caregiver relationship as a protective factor in the family structure transition – stress relationship. Similarly, the multigenerational and extended kin moderated mediation analysis could not be conducted in the GUI data because the number of people living in these types of households who experienced a family structure transition was too small ($n < 30$), and so this analysis could also not be compared with a high-income context. However, these moderators make more theoretical sense in the Young Lives countries, because living with grandparents and aunts/uncles is a more common feature of family life in these countries, but less so in Ireland.

Despite these limitations, the Young Lives and GUI datasets were still the best possible datasets available to fulfil my final research aim. The Young Lives data allowed me to test moderators particularly relevant to LMIC contexts (i.e., household size and multigenerational/extended kin households) in four countries which are currently not included in the instability hypothesis literature. The GUI data included multiple family relationship quality variables which allowed me to examine theories derived from the qualitative literature.

5.4.2 Conclusion

In this chapter, I extended the instability hypothesis to uncover some circumstances under which family structure transitions lead to stress (aim three). The findings were encouraging: they suggest that drawing upon and bolstering resources within the family may lessen the stress associated with family structure transitions. Continuing to identify the specific circumstances under which transitions lead to stress is crucial for the development of interventions aimed at reducing the stress and, in turn, the deleterious outcomes associated with family structure transitions.

Chapter 6: Discussion

6.1 Introdution

Family structure transitions are commonplace in many high-income countries (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017). These transitions are generally considered to be associated with several deleterious outcomes for children, including worsened physical health and educational achievement (e.g., Augustine & Kimbro, 2015; Bzostek & Beck, 2011; Cavanagh & Fomby, 2019; Cooper et al., 2011; Devor et al., 2018; Fomby, 2013; Perkins, 2019; Sun & Li, 2011 Wickrama, et al., 2013). Most of this research focuses almost exclusively on high-income countries, predominantly the United Kingdom and the United States where family structure transitions are exceptionally common (Brown et al., 2016; Cherlin, 2009; DeRose, Lyons-Amos, et al., 2017). Children living in low- and middle-income countries (LMICs) are faced with several social, economic, and environmental challenges which threaten their development, such as poverty, child labour, access to clean water, malnutrition, and lack of schooling (Bell et al., 2013; Blum & Boyden, 2018; Vostanis, 2017). Despite evidence from high-income countries which suggests that family structure transitions can be an additional challenging impeding children's development, we know very little about how common these transitions are or how they affect children living in LMICs, where most of the world's children live (Blum & Boyden, 2018).

To address this substantial gap, my **first aim was to identify the prevalence of family structure transitions for children living in LMICs**. Four rounds of data (ages 1 to 12) from the Young Lives study were used, which samples children and their caregivers living in Ethiopia, India, Peru, and Vietnam. Because there are large gaps between rounds of data collection, I compared the Young Lives prevalence estimates with estimates from the same four countries using monthly union history calendar data from the nationally representative Demographic and Health Surveys (DHS). To contextualise the Young Lives prevalence estimates, the data were compared with estimates from 17 high- and upper-middle income countries (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017). **My second aim extended this to test the direct association between family structure transitions and children's general physical health and educational achievement in LMICs**. In these analyses, five rounds of Young Lives data (ages 1 to 15) were used to include the maximum amount of data possible. To provide a high-income country comparison from a context currently

underrepresented in the family instability literature, I also conducted the analyses for aims one and two using three rounds of data (ages 9 to 17/18) from the Growing Up in Ireland (GUI) study, which is the largest study of children and families in Ireland. This allowed me to examine if and how the prevalence and consequences of family structure transitions differed across five low-, middle-, and high-income countries.

The instability hypothesis theorises that family structure transitions lead to negative outcomes for children through the pathway of stress (Fomby & Cherlin, 2007; Wu & Martinson, 1993). However, a recent systematic review of the instability hypothesis revealed that transitions are often not associated with stress or with negative outcomes for children (Hadfield, Amos, et al., 2018). This suggests that family structure transitions are not uniformly stressful, and, therefore, there are specific circumstances under which these transitions lead to stress. The review also illuminated the lack of non-American studies testing the instability hypothesis (Hadfield, Amos, et al., 2018), despite family structure transitions likely being a stressful experience for families living in other countries. To shed light on the mixed evidence for the instability hypothesis, and to test this hypothesis in a wider range of geographical and cultural contexts, the **third aim of this thesis was to test and extend the instability hypothesis across five low-, middle-, and high-income countries**. To do this, I used five rounds of data (ages 1 to 15) from the Young Lives study and three rounds of data (ages 9 to 17/18) from the GUI study.

In this chapter, I will integrate the findings from this thesis research into the existing family structure transition literature. The chapter begins by reviewing the focal findings of the Young Lives and GUI analyses. The findings are placed into context alongside the existing literature, and the wider implications of the findings and possible future directions are considered. The methodological strengths and limitations of this research are then outlined, along with the practical implications of the findings. The chapter ends with concluding remarks.

6.2 Review of the Findings

6.2.1 The Proportion of Parent-Headed Family Structures

The first aim of this thesis was to identify the prevalence of family structure transitions in LMICs. To address this aim, four rounds of data (ages 1 to 12) from the Young Lives study

were used. I also ran this analysis using the GUI data, but the GUI data covers a different developmental period than the Young Lives and comparison country data (ages 9 to 17/18, compared with birth/ages 1 to 12), and so cannot be compared with the Young Lives and comparison country prevalence estimates.

In all four of the Young Lives countries, the pattern of family structures in which the children were living at each round was largely consistent. The vast majority of children in Ethiopia, India, Peru, and Vietnam lived in a two-parent family at every round of data collection. This is in line with global statistics on the prevalence of two-parent families; analyses conducted by the United Nations (2017) using data from 124 countries show that most children (73%) worldwide aged 15 and younger live with their two biological parents. Single-parent families were the second most common family structure in all four countries at every round of data collection. As the participating children got older, they were more likely to live in a single-parent family than in a two-parent family. This reflects global patterns of single-parenthood which show that children are increasingly likely to be born to and live with just one of their biological parents (DeRose, Lyons-Amos, et al., 2017; Ortiz-Ospina & Roser, 2020). Despite being the second most common family structure in every country, the prevalence of single parenthood across the five countries was wide-ranging, from 5.1% at age 12 in India to 18.0% in Ethiopia. This echoes evidence using census and survey data from 130 countries and 20.8 million households which show that the proportion of children living in single-parent families varies dramatically across countries, from 23% in the United States and 21% in the United Kingdom, to 2% in Turkey and 1% in Afghanistan (Kramer, 2020). Stepfamilies were the least common parent-headed family structure at every round in all four countries. More specifically, less than 5% of children lived in this family structure at age 8 in all Young Lives countries. This is slightly lower than the prevalence of stepfamilies in some high-income countries – around 7.5% of children in New Zealand and 11% of children in the United States live in a stepfamily (Gath et al., 2021; Westrick-Payne & Wilborg, 2021). Little is known about stepfamilies outside of high-income countries (Cherlin, 2017). Thus, this thesis provides new information on how prevalent stepfamilies are in a wider range of contexts.

These findings suggest that patterns of family structure are fairly similar across a diverse range of geographical and cultural contexts. However, the proportion of children living in each of these family structures differed between countries, showing that there is variability in

the family contexts of the four Young Lives countries. This underscores the need to shift the United States-centric focus that we currently have in the family structure and instability research, and broaden the contexts in which family structure is studied.

6.2.2 The Prevalence of Family Structure Transitions

After determining what family structures children were living in at each round, I then identified whether they experienced a change in family structure from one round to another (i.e., whether they experienced a family structure transition), focusing on parent-headed family structures (i.e., two-parent, single-parent, and stepfamilies). The decision to include all types of family structure transitions (i.e., relationship formations and dissolutions) into one variable, rather than solely focusing on relationship formations or dissolutions, was guided by the instability hypothesis, which theorises that *all* transitions are stressful because they disrupt the family system (Fomby & Cherlin, 2007; Wu & Martinson, 1993). This is how family structure transitions are commonly investigated in the extant literature (Hadfield, Amos, et al., 2018). To address the limitation of the large gaps between each round of data collection in the Young Lives study (three-to-four-years), the Young Lives family structure transition prevalence estimates were compared with estimates using monthly union history calendar data from the nationally representative DHS in the same four countries.

6.2.2.1 Advantages of the Family Structure Transition Categorisation Method

In this thesis, a family structure transition was defined as a change in household composition caused by a change in the parents' cohabiting relationship status. Cohabiting relationship status was determined using the household rosters to identify where the child's parents and their partners (if any) were living (in the same household as the child or not), as opposed to self-reported relationship status. There are several advantages to using this method of categorisation.

First, identifying changes in where the child's parents and their parents' partners were living allowed me to include non-legal family structure transitions. This is preferable because, in many countries, cohabitation is acceptable precursor or alternative to marriage (Furstenberg, 2019; Smith et al., 2017). Only including transitions that arise from marriage, divorce, or remarriage may have excluded a significant portion of family structure transitions. Moreover, people have differing definitions of some family structures. For example, some couples will

only classify themselves as living in a stepfamily if they are *married* to their partner, whilst others will classify themselves as living in a stepfamily if they are *cohabiting* with their partner, and still others will classify themselves as living in a married two-biological parent family even when one of the parents would be more accurately classed as a stepparent (e.g. a non-biological parent in a romantic relationship with the child's biological parent) (Hadfield & Nixon, 2013). Therefore, focusing solely on marital status could result in inaccurately counting the prevalence of some types of family structures and family structure transitions.

Second, some of the existing research which identifies the prevalence of family structure transitions only includes children who are born to married parents, such as the data from the 17 high- and upper-middle-income comparison countries (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017). Including all children is preferable because children's family structure at birth influences the likelihood of experiencing a family structure transition. For instance, children born to single-parent or cohabiting family structures are more likely to experience a transition than those born to married parents (Brown et al., 2016; Cavanagh & Huston, 2006; Raley & Sweeney, 2020; Ryan & Claessens, 2013). Excluding children based on their parents' marital status at birth may have resulted in biased – more specifically, conservative – prevalence estimates.

Finally, tracking the cohabiting relationship status of both of the child's parents meant that I could include both maternal and paternal transitions, if the child lived in the same household as their father. Most of the family structure transition literature focuses exclusively on maternal transitions; of the 39 studies included in a systematic review of the instability hypothesis, 26 focused on maternal transitions only (Hadfield, Amos, et al., 2018). This is likely due to the use of secondary datasets which typically sample the child's primary caregiver, who is often the mother. Including both maternal and paternal family structure transitions was important because fathers are likely to re-partner following the end of a relationship (Wu & Schimmele, 2005), and both maternal and paternal transitions have been associated with stress and negative outcomes for children (e.g., Heard, 2007; Sun & Li, 2011). Only focusing on maternal transitions might have underestimated the prevalence and effects of family structure transitions on children.

6.2.2.2 Family Structure Transitions in LMICs

The prevalence of family structure transitions in the four Young Lives countries was wide-ranging. Children in Peru experienced the highest rates of family structure transitions by age 12 (22.0%), followed by children in Ethiopia (14.8%), Vietnam (7.7%), and India (5.6%). In the 17 high- and upper-middle income countries, the prevalence of family structure transitions was equally as wide-ranging, from 0% in Italy to 56% in the United States (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017). Monthly union history calendar data from the nationally representative DHS found an identical pattern of results to the Young Lives prevalence estimates. The prevalence of family structure transitions in Ireland (8.3%) was similar to the prevalence of transitions in India and Vietnam (the two Young Lives countries with lower rates of family structure transitions), and similar to many of the 17 high- and upper-middle income comparison countries such as Austria (9%), Belgium (8%), and the Netherlands (7%). However, it is important to restate that the GUI data covered a different developmental period to the Young Lives and comparison country data (ages 9 to 17/18 vs. ages 1 to 12, respectively). These findings further demonstrate that the United Kingdom and the United States are outliers when it comes to the prevalence of family structure transitions (32% and 56%, respectively) (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017), yet most of what we know about family structure and family transitions comes from these countries (Hadfield, Amos, et al., 2018). This underscores the pressing need to understand if and how family instability impacts children in a variety of contexts.

6.2.2.2.1 Hypothesising Social and Cultural Influences on the Prevalence of Transitions

The relationship between the social and cultural context and family structure transitions is complex and challenging to disentangle, particularly given that aspects of the social context (e.g., social norms, laws, religion) likely work together to influence family instability (Cherlin, 2009). It is not possible to draw concrete conclusions on the impact of the social and cultural context on the prevalence of transitions based on the analyses conducted in this thesis, but due to the diversity of countries studied, it is possible to hypothesise why the prevalence of family structure transitions is higher in some contexts than others.

Peru scores highly on religiosity (The Telegraph, 2018), which we might have expected to dampen the prevalence of family structure transitions given that more highly religious couples typically experience greater relationship quality and lower rates of divorce (Wang &

Schofer, 2018; Wilcox et al., 2019). Peru is also a collectivist society (Hofstede, 2022b), which we may have also expected to negatively influence the prevalence of family structure transitions as it indicates a preference for putting the group's (i.e., the family's) needs above one's own. Despite these high levels of religiosity and collectivism, the prevalence of family structure transitions was higher in Peru than in Ethiopia, India, or Vietnam, and higher than all of the 17 high- and upper-middle income comparison countries, excluding the United Kingdom and the United States (Brown et al., 2016; DeRose, Lyons-Amos, et al., 2017). What other factors of the social context could be driving the high prevalence of family structure transitions in this country? In Peru, divorce is stigmatised (particularly for women) and is difficult to obtain (Alvarado & Vilchez, 2015; Brookman, n.d.b), and re-marriage laws are restrictive (OECD, 2019). This may explain why living in non-married family structures (i.e., single-parent and cohabiting families) is common in this country (Cuesta et al., 2017), as it negates the legal and social costs of divorce and remarriage. On the other hand, the large number of people having non-marital relationships could have led to strict divorce and remarriage laws as a way of "protecting" the family and making it more difficult to be in a non-marital relationship. Either way, non-married family structures are common in Peru, and research from the United States suggests that being born to non-married family structures is associated with an increased likelihood of experiencing family instability (Brown et al., 2016; Manning, 2015), which may contribute to the high proportion of children experiencing family structure transitions. These estimates from Peru suggest that restrictive laws which discourage individuals from separating and forming new romantic relationships do not necessarily result in low rates of family structure transitions, as non-legal unions – which are typically less stable – may become a favourable alternative. It will be interesting to observe whether the more non-traditional family practices observed in Peru (i.e., the high rate of family structure transitions and the prevalence of single-parent and cohabiting families) will later be reflected in legislation, given that the law often responds to changes in social attitudes and behaviour (Hiller & Recoules, 2013).

Family structure transitions were less common in Ethiopia than in Peru, although they were still relatively common compared with the 17 comparison countries. Cohabitation is not as normative or as widespread in Ethiopia as it is in Peru (Tafere et al., 2020), which may mean that unions are more stable and, therefore, children are less likely to experience family structure change in this context. Although divorce laws are relatively permissive in Ethiopia (Brookman, n.d.a), divorce is socially stigmatised, particularly for women (Abebe, 2015; Van

Der Gagg, 2020), and is strongly opposed by the Ethiopian Orthodox church, which is the predominant religious group in Ethiopia (Diamant, 2017; World Values Survey, 2020). This may deter individuals from ending marital relationships. Further, members of the Ethiopian Orthodox Church may only remarry following the death of their former partner (Schembri, 2015), which restricts their ability to form new marital unions following a dissolution.

The proportion of children experiencing a family structure transition in Vietnam was low in comparison to Peru and Ethiopia. In Vietnam, divorce is considered shameful for women in some traditional communities (Cultural Atlas Editors, 2016), and single-mother families are largely disapproved of (World Values Survey, 2020). This may inhibit family structure transitions, particularly relationship dissolutions which result in single-mother families. Further, the collectivistic culture could mean that individuals place a greater emphasis on social cohesion and the impact of family structure transitions on others above their own needs, thus potentially lowering the prevalence of these transitions. On the other hand, the most common religion in Vietnam – Buddhism – is accepting of both divorce and remarriage because they allow individuals the opportunity to rediscover happiness (Buddhism Info, 2022; Woodham Academy, n.d.). This suggests that there might be fewer religious barriers to family structure change in Vietnam compared to contexts where the predominant religion obstructs – either through social disapproval or religious laws – people's access to divorce and remarriage (e.g., in Peru and Ethiopia). However, levels of religiosity in Vietnam are the lowest of the four Young Lives countries (The Telegraph, 2018), so these more moderate religious beliefs about divorce and remarriage may have a limited impact on the prevalence of family structure transitions.

Children in India experienced the lowest proportion of family structure transitions of the four Young Lives countries, with lower rates than 15 of the 17 high- and upper-middle income countries (Italy and Spain were lower, with 0% and 5% of children experiencing a transition by age 15, respectively) (DeRose, Lyons-Amos, et al., 2017). There are many aspects of the Indian social and cultural context which may reduce the prevalence of family structure transitions. First, autonomy regarding partner selection is low, and family and community input is high (Dommaraju, 2016), resulting arranged marriages being much more common than "love marriages" (i.e., where individuals select their marital partner themselves) (Statista, 2017). Most people in India consider themselves to be religious (The Telegraph, 2018), which might contribute towards more high-quality relationships which are less likely

to end in divorce (Wang & Schofer, 2018; Wilcox et al., 2019). On the other hand, couples may be less likely to divorce because divorce is viewed negatively in Hinduism (Legal Service India, 2022), rather than because couples have higher-quality relationships. Cohabitation – which is associated with increased family instability in the United States (Brown et al., 2016; Manning, 2015) – is not widely accepted among Hindus (Emeng, 2021), which is the predominant religious group in India (Kramer, 2021). Despite relatively liberal divorce and remarriage laws for Hindu Indians (Vakil Search, 2019), divorce carries a social stigma (Thadathil & Sriram, 2020), and remarriages do not hold the same social status as first marriages, particularly for remarried women, who are considered impure (Dommaraju, 2016; Mishra & Jayakar, 2019). Together, this may reduce parents' likelihood of ending or beginning romantic relationships.

To empirically examine the relationship between the social and cultural context and the prevalence of family structure transitions, future research could identify whether aspects of the social and cultural context (e.g., attitudes towards divorce and remarriage, strict versus liberal divorce laws, high individualism/collectivism, high religiosity) predict the prevalence of family structure transitions. Additionally, qualitative research could be conducted to understand what (if any) societal-level factors people perceive as influential when making decisions about forming and dissolving romantic relationships.

6.2.3 The Consequences of Family Structure Transitions Across Contexts

Extending on aim one, the second aim of this thesis was to identify the consequences of family structure transitions for children living in LMICs. To address this aim, five rounds of the data (ages 1 to 15) from the Young Lives study were used. The analyses were also run using three rounds of data (ages 9 to 17/18) from the GUI study to provide a high-income country comparison. Linear Mixed Models (LMMs) were run to control for the naturally nested data structure (i.e., time nested within children). The analyses were first run with family structure transitions predicting children's general physical health, and then with family structure transitions predicting children's educational achievement. Based on existing literature, I hypothesised that family structure transitions would be associated with worsened general physical health and educational achievement for children.

Contrary to my hypothesis, family structure transitions were not associated with children's general physical health or educational achievement in Ethiopia, India, Peru, or Vietnam. This

runs counter to some evidence from the United States which suggests that family structure transitions are negatively associated with multiple facets of physical health (e.g., obesity, asthma, worse general physical health) (Augustine & Kimbro, 2015; Bzostek & Beck, 2011; Wickrama, et al., 2013), and educational achievement (e.g., likelihood of high school and college enrollment, math and reading scores, verbal ability) (Cooper et al., 2011; Devor et al., 2018; Fomby, 2013; Perkins, 2019; Sun & Li, 2011). These results also differ from the findings of the GUI analyses, which revealed that family structure transitions were negatively associated with both general physical health and educational achievement for children living in Ireland.

That family structure transitions did not lead to worse outcomes in the four Young Lives countries, coupled with the finding that in Ireland transitions did lead to worse outcomes, could suggest that family structure transitions are more impactful to children when their lives are relatively stable in other ways. That is, children living in Young Lives countries may have their development threatened by considerable social, economic, and environmental challenges (e.g., poverty, child labour, malnutrition, access to clean water) (Blum & Boyden, 2018), which may outweigh the potential impacts of family structure transitions (i.e., the socioeconomic disadvantage hypothesis, see Cavanagh & Fomby, 2019). Aside from in the analysis looking at the impact of transitions on children's educational achievement in India, environmental shocks negatively impacted children's general physical health and educational achievement in all four of the Young Lives countries (*ßs = -.02 - -.08, p*s = .000 - .036), which suggests that the environment impacts children's development over and above any impact of family structure transitions in these contexts. This is in line with research from the United States which suggests that structural factors (i.e., poverty) are more detrimental to children's outcomes than family instability (Schoon et al., 2012). Further, some studies in the United States have found that family structure transitions are more harmful for more privileged children than their less privileged counterparts on numerous outcomes, such as academic performance, socioemotional behaviour, age at first sexual experience, problem behaviour, and income mobility (Bloome, 2017; Fomby et al., 2010; Fomby & Cherlin, 2007; Ryan et al., 2015; Wu & Thompson, 2011). My research supports this evidence, as family structure transitions impacted children's general physical health and educational achievement in Ireland, but not in Ethiopia, India, Peru, or Vietnam. An alternative possibility is that there is more variability in the types of stressors influencing children who live in LMICs, and so the relatively small impacts of stressors such as a family structure transitions are not able to

be detected. That is, family structure transitions may impact children in LMICs, but the heterogeneity in the types of stressors impacting their outcomes washes out the ability to identify the impacts of family structure transitions.

6.2.4 Testing and Extending the Instability Hypothesis

The third and final aim of this thesis was to test and extend the instability hypothesis. Prior to this research, only one study had tested this hypothesis outside of high-income countries (Hu, 2020), and even then, this study sampled families living in China, which is at the very upper end of low- and middle-income. Overall, the analyses provided very little support for the instability hypothesis. Financial stress did not mediate the relationship between family structure transitions and children's outcomes in Ethiopia, India, Peru, or Vietnam. This aligns with Hu's (2020) findings which showed that economic resources did not mediate the relationship between family instability and child wellbeing. When distinguishing between relationship formations and dissolutions, there was still no evidence to support the instability hypothesis in any of the Young Lives countries. This strengthens the analyses which combine all types of family structure transitions into one variable, as it suggests that the null findings in these countries have little to do with the type of transition experienced.

In contrast, both financial stress and parenting stress mediated the family structure transition – child educational achievement relationship in Ireland.. These findings lend support for the hypothesis that the effects of family structure transitions are less visible in more disadvantaged contexts, because the effects of transitions are outweighed by other substantial challenges (e.g., access to food and clean water, child labour, poverty) (i.e., the socioeconomic disadvantage hypothesis, see Cavanagh & Fomby, 2019). Indeed, in all four of the Young Lives countries, financial stress was associated with worsened general physical health and educational achievement for children ($ßs = .182 – 1.855, p$s = .000 - .027), but family structure transitions were not (ps > .05). This suggests that structural factors (i.e., poverty) are a stronger determinant of children's development than household-level factors (i.e., family instability) in these contexts. This emphasises that we should not base our understanding of how families work and how the family context impacts children's development on a small and unique sample (i.e., children living in the United States).

More generally, these mixed findings are reflective of the wider evidence for the instability hypothesis, which is similarly mixed (Hadfield, Amos, et al., 2018). Out of 26 studies using

financial stress as a mediator when testing the instability hypothesis, 11 found no significant association between family structure transitions and stress (Hadfield, Amos, et al., 2018). The findings are equally as mixed when other stressors such as parent functioning (e.g., caregiver depression) and parenting (e.g., parenting quality, punishment) are used. To shed light on the circumstances under which family structure transitions are stressful, the final analyses of this thesis aimed to unpack the instability hypothesis by adding moderators to the family structure transition – stress relationship.

To identify factors which influence the stress associated with family structure transitions, moderator variables were added to the family structure transition – stress pathway. In the Young Lives analysis, three separate family context moderators (i.e., household size, living in a multigenerational household, and living in an extended kin household) were added to the family structure transition – financial stress pathway. These analyses revealed that, in Peru and Vietnam, living in larger household reduced the stress associated with family structure transitions. Living with more people could mean that there are more sources of social support available to the parents (e.g., money, childcare), which could buffer the financial stress associated with experiencing a family structure transition. This is in line with research from Peru which suggests that living in a multiple-family household (i.e., households that include more than one couple and their children, and thus households with a greater number of people in them) reduces the likelihood of living in poverty (Cuesta et al., 2017). Additional family members could reduce the financial stress caused by family structure transitions by providing childcare, which, in turn, may enable the parents to continue working. This is particularly likely in more collectivistic cultures such as Peru and Vietnam (Hofstede, 2022b) where familial support during stressful life events is more common (Goodwin & Hernandez Plaza, 2000). The protective effect of larger households could also be due to the *types* of family structure transitions that parents in larger households are having. That is, those living in larger households may be more likely to experience transitions which involve the entrance of a caregiver (e.g., remarriage), rather than then exit of a caregiver.

In Peru, living with grandparents and extended kin also reduced the financial stress associated with family structure transitions, which is in line with evidence from the United States showing that living in a multigenerational household reduces the likelihood of living in poverty (Cohn et al., 2022). Research has shown that older adult's pensions account for a sizable proportion of household income in Peru (Prince et al., 2016), suggesting that older

adults could ameliorate the financial effects of experiencing a family structure transition. Evidence from the United States suggests that families are more likely to ask extended kin for practical or emotional support rather than financial support (Napolitano et al., 2020), and so even if family members do not provide financial assistance, they may be able to provide practical support in the form of looking after the children, which allows the parents to continue to work and relieves them of the financial burden of childcare. But why did living with grandparents or extended kin not reduce the financial stress associated with family structure transitions in Ethiopia, India, or Vietnam? It could be that these additional household members are better equipped to provide support (particularly financial support) in more advantaged contexts, which is why we only see statistically significant effects in the Young Lives country with the highest income status (Peru, upper-middle income). Further, household members can be both the providers and the recipients of care. In poorer contexts, it might be that grandparents are more likely to be cared for, rather than providing care themselves (International Longevity Centre Global Alliance, 2012). Another type of household member which may influence the stress associated with family structure transitions is siblings. There is evidence suggesting that changes in sibling structure (e.g., the introduction of stepsiblings into a household) impact children's outcomes, sometimes even more so than parental transitions (Sanner et al., 2018). It would be valuable for future research to investigate the moderating impact of sibling complexity in the family structure transition, stress, and child outcome relationship to continue to explore the specific circumstances under which family structure transitions are stressful.

The GUI analyses showed that having a closer child-caregiver relationships and less conflicted child-caregiver relationships following a family structure transition was associated with lower parenting stress. This is in line with Mooney and colleagues' (2009) evidence review which suggests that the quality of the child-parent relationship influences the impact of parental separation on children. Mooney et al.,'s (2009) review focused exclusively on relationship dissolutions, whereas I combined both relationship formations and dissolutions, which may imply that family relationship quality is potentially influential for families experiencing both types of transitions. That being said, the transition from a two-parent family to a single-parent family was the most common type of family structure transition in Ireland, and so perhaps the findings follow the same pattern as the evidenced discussed by Mooney and colleagues (2009), because I predominately looked at relationship dissolutions. My findings suggest that, if family functioning can ameliorate the consequences of family

instability, experiencing a family structure transition alone is less important than *how* family structure transitions are experienced. That is, if parents and their children can maintain a close, warm relationship following a change in family structure, this change will likely have relatively little impact on the stress the parents feel about their parenting role and, in turn, their child's development. This is in line with research which argues that family instability should be conceptualised as a process rather than an isolated event (Coleman & Glenn, 2010), and so it makes sense to think about how the event unfolds and what can be done in the aftermath to protect children from unfavourable outcomes. In light of this, it may be beneficial to develop interventions for families which help them to maintain close, low-conflict child-caregiver relationships when experiencing family instability, in order to lessen the consequences of family structure transitions.

6.2.5 Theoretical Implications

The overarching aim of this thesis was to examine family structure transitions in LMICs. The predominant theoretical model in the family structure transition literature is the instability hypothesis (Fomby & Cherlin, 2007), which is often contrasted with the selection hypothesis (Wu & Martinson, 1993). The selection hypothesis was not employed as a theoretical framework in this thesis because there is strong evidence that family structure transitions can impact children even when controlling for selection effects (e.g., Bayaz-Öztürk, 2022; Fomby, 2013; Wu, 1996; Wu & Thompson, 2001), which suggests that transitions have effects above and beyond the parents' characteristics. Therefore, in line with the instability hypothesis, this thesis employed mediation analyses to examine the association between family structure transitions, financial and parenting stress, and children's physical health and educational achievement.

The use of financial and parenting stress variables was guided by the existing instability hypothesis literature (Hadfield, Amos, et al., 2018), as well as the availability of variables in the secondary datasets which would allow me to address my research aims. A limitation of the instability hypothesis is the lack of specificity when defining the type(s) of stress associated with family structure transitions. This has resulted in the existing literature using various measures of stress, including changes in the household's financial situation, residential or school mobility, and mother and child functioning (Hadfield, Amos, et al., 2018). Conceptualising stress in many different ways may in part explain the mixed evidence for the instability hypothesis, as family structure transitions may impact some types of stress

more than others. Further, Wu & Martinson (1993) and the wider literature agree that family structure transitions are stressful in a variety of ways, yet most studies only use one type of stressor when testing the instability hypothesis (Hadfield, Amos, et al., 2018). Future research could use a qualitative approach to uncover and consolidate the ways in which these transitions are stressful, which could inform the development of a multidimensional measure of family structure transition stress. A specific, multidimensional measure of family structure transition stress would enable researchers to assess the impact of these transitions more holistically, and more accurately assess the different stressors associated with family transitions which likely have a combined/cumulative effect rather than acting in isolation. This would also enable researchers to test this hypothesis more accurately, and more reliably compare the findings across outcomes, samples, and contexts.

6.3 Methodological Strengths and Limitations

6.3.1 Secondary Data

This thesis used data from two secondary longitudinal datasets – Young Lives and GUI. Using secondary longitudinal data was advantageous because it gave me access to data from thousands of children and their families living in five countries who were sampled from early infancy through late adolescence. It would not have been possible to collect data of this scale throughout my PhD, as collecting this type of rich data requires a significant time and financial investment (Hofferth, 2005), whereas the availability of these datasets allowed me to access this information relatively quickly and with limited financial cost. The Young Lives data in particular was incredibly easy to access. Despite its limitations (e.g., the large gaps between each round of data collection, the lack of consistency regarding in what rounds and countries variables were available), it is a valuable and perhaps underused resource for researchers who are interested in studying families living in LMICs. The large sample sizes were also beneficial as I had enough statistical power to detect small effects where they existed.

Despite these advantages, there were some noteworthy challenges and limitations of using secondary data. First, understanding the data (i.e., gathering information about the samples, research methodologies, and the variables included in the dataset) took a significant amount of time. When contacting the study's data managers to ask for further information, it was

often difficult to get a timely response which impacted on the time taken to plan and conduct the analyses. Second, unlike the Young Lives data, the GUI Researcher Microdata Files (RMF) data was difficult to access as the data are stored in the Irish Central Statistics Office's Research Data Portal (see the data applications for Young Lives and GUI in Appendix C and D, respectively). It took several months to complete the paperwork and training required to access the data, and once I had gained access, I had to physically be in Ireland to conduct the analyses. This was particularly challenging due to the COVID-19 travel restrictions that were in place throughout much of my PhD. Because I had to be in Ireland to conduct the GUI analyses, the amount of time I had to conduct the analyses was limited: I had one month to get to know the data and analyse it, and I had to ensure that I completed the analyses correctly because I could not conduct further analyses once I left Ireland. After completing the analyses, the outputs had to be checked and released to me by a statistician which, due to the large number of outputs, took a couple of months. Storing data in this highly restrictive way has implications for research more broadly. Imposing significant barriers to accessing data means that it is not used as widely as openly available data (Huston et al., 2019). This is particularly undesirable for studies such as GUI that require a significant time and financial investment to run (Hofferth, 2005), because fewer researchers can benefit from the rich data collected and, in turn, the potential impacts of the data are diminished. This can be demonstrated by comparing the number of publications using the Young Lives data – which was very easy to access – to the GUI data: Young Lives has over 800 publications, whereas GUI has under 300 (excluding official reports from the study) (Growing Up in Ireland, 2022; Young Lives, 2022). Open data – which can be defined as data that can be "freely used, re-used, built on, and redistributed by anyone" (CODATA, 2022) – is valuable, because it encourages collaboration between researchers (Huston et al., 2019), allows for the investigation of a broad range of research questions (Cook et al., 2018), and enhances the visibility of research (i.e., the number of citations and amount media coverage) (McKiernan et al., 2016). Despite these access limitations, the GUI data contained rich, fine-grained measures of family relationship quality, and it also allowed me to examine family instability in a context understudied in the existing literature, which outweighs the challenges of accessing the data.

In both the Young Lives and GUI data, some variables of interest were not available at some or all rounds. For example, a measure of perceived psychological stress was not available in either dataset. This meant that I had to work to the strengths of the datasets by using the best

variables available to measure family structure transitions, stress, and child outcomes, whilst adhering to the analysis plans outlined in the data access applications so as not to allow the data guide the analyses, which is a common challenge of secondary data analysis (Hofferth, 2005). In the Young Lives data, because the data was collected by separate teams in each country, the availability of variables differed not only across rounds but across countries (e.g., the child general physical health variables). My aim was to make the results as comparable as possible across the four countries, and so I selected variables that were available in all countries.

The reporter of the variables sometimes changed over time; the child's caregiver reported on children's general physical health up to round four, and the child self-reported at round five in the Young Lives data. This makes it more difficult to reliably measure the same construct over time, as the change in reporter may cause a change in the variable, rather than the predictor of interest (Collier et al., 2016; Yang et al., 2021). However, looking at the correlations between the variables over time allowed me to be reasonably confident that different reporters had similar ratings of the same construct.

An additional limitation is that not every important confounder could be adjusted for as the appropriate variables were not available in the datasets, for example the parent's own experiences of family instability, which has been associated with a higher likelihood of experiencing instability in their own future relationships (e.g., Fomby & Cherlin, 2007). This could mean that, if such confounders were available and included in the models, the sizes of the statistically significant effects could be very small, or potentially non-significant. That being said, research suggests that even when controlling for such variables, family structure transitions still have an impact on children's outcomes (e.g., Bayaz-Öztürk, 2022; Fomby & Cherlin, 2007; Fomby, 2013; Wu, 1996; Wu & Thompson, 2001). Either way, it is important to use some caution when interpreting and extrapolating the statistically significant findings which had very small effect sizes.

A further limitation of using secondary data specifically relates to the availability of LMIC datasets. When searching for an LMIC dataset to address my research aims, I found it particularly challenging to find a study that was conducted in recent decades (i.e., in the past ~20 years), sampled children and their caregivers from early childhood through adolescence with any sort of regularity, included a method of classifying children's family structures that was available at every timepoint, and included information on children's developmental

outcomes and a measure of stress. Indeed, there are few datasets which satisfy even a few of these needs. The Young Lives dataset was the only one which fulfilled all of my research requirements and provided the added value of sampling children living in *multiple* LMICs. Even so, Young Lives is a study of childhood poverty and therefore focuses on collecting data to understand the causes and consequences of poverty, rather than family relationships. This demonstrates the lack of secondary longitudinal LMIC data, and could potentially explain why so much of the family instability research focuses almost exclusively on high-income contexts. To continue to investigate family instability through a more global lens, it is critical that efforts are made to target countries which are underrepresented in the family instability literature, and where most of the world's children live (i.e., LMICs) (Blum & Boyden, 2018). Without the creation of more publicly available longitudinal LMIC datasets, comprehensive research on children and families living in these countries cannot be done.

6.3.2 Gaps Between Data Collections

A limitation of both the Young Lives and GUI datasets is the large gaps between each round of data collection (approximately three-to-four years). These gaps have implications for several of the findings. When determining the prevalence of family structure transitions, I likely underestimated how common these transitions are, because I could only identify if a transition occurred when a child's family structure changed from one round to another, whereas those that occurred between rounds could not be counted. So, if the child experienced multiple family structure transitions in between rounds (e.g., a transition from a two-parent family to a single-parent family, and a transition from a single-parent family to a stepfamily), only one transition was counted (e.g., a transition from a two-parent family to a stepfamily). This also impacts the reliability of the data on the most common *types* of family structure transitions, as I only had data on children's family structures at each round rather than between rounds. That being said, that DHS prevalence estimates showed an identical pattern of results to the Young Lives data (Peru experiencing the highest rates of family structure transitions, followed by Ethiopia, Vietnam, and India), with closely corresponding estimates, which increases confidence in the Young Lives findings.

The analyses exploring the consequences of these transitions on financial and parenting stress and children's outcomes is perhaps more greatly impacted by these gaps. These analyses explored whether a family structure transition between rounds (e.g., from round one to two)

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impacted stress and child outcomes at subsequent rounds (e.g., at round two). This meant that the analyses could have been identifying the impact of both recent and distant transitions on current stress and child outcomes, as some households may have experienced a transition a few months ago, whilst others may have experienced a transition many years ago. Those who experienced a family structure transition many years ago may have returned to baseline levels of financial/parenting stress and child outcomes by the following round of data collection, and so although the transition may have been impactful in the short-term, the analyses were not able to detect that. This may contribute to the null results in the Young Lives analyses, because in these countries, transitions might influence children's outcomes at more proximal timepoints, but the effects may not persist three-to-four years later.

The interpretation of the moderated mediation analyses is also influenced by the gaps between each round of data collection. When conducting the moderations on the family structure transition – stress pathway, I looked at the interaction between family structure transitions from one round to another (e.g., from round one to two) and the moderator at the subsequent round (e.g., at round two) (Figure 6.1.). Thus, the moderation analyses are telling us whether support following a family structure transition influences stress and, in turn, children's outcomes. Therefore, I cannot conclude whether having a large household, an multigenerational household, or extended kin living in the household, and the quality of the child-caregiver relationships before or during the family structure transition is advantageous, but I can instead conclude whether these aspects of the family context are helpful following a transition.

Figure 6.1.

Theoretical Model Testing the Potential Pathway from Family Structure Transitions to Financial Stress and Child Outcomes at the Next Round of Data Collection
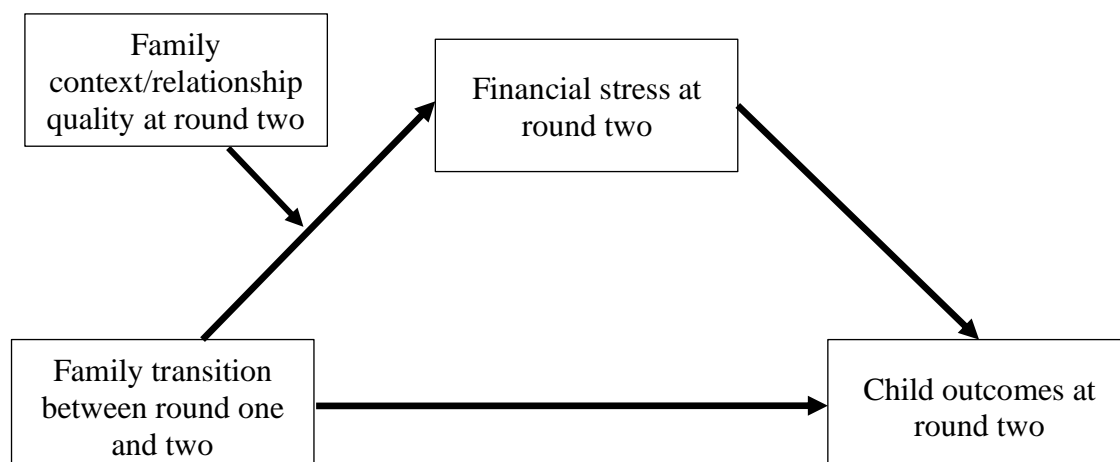
6.3.3 Conceptualising and Measuring "Stress"

When testing and examining the instability hypothesis, stress was conceptualised as financial stress (Young Lives and GUI) and parenting stress (GUI). Choosing these two stressors allowed me to compare if and how the results differ to the largely US-centric existing evidence. Both datasets included a measure of financial stress that was consistently available at every round of data collection. Finding a stressor that was included at every round proved to be difficult, yet it was essential in order to conduct the analyses. In the Young Lives analyses, a multidimensional measure of socioeconomic status was used (the wealth index variable) which assessed households on three indicators of wealth: housing quality, access to services, and the number of country-specific household items owned. In the GUI analyses, equivalised household income was used which categorised households into deciles from lowest household income (decile 1) to highest household income (decile 10). Parenting stress in the GUI analyses was measured using the six-item version of the Parental Stress Scale (Berry & Jones, 1995), which focuses on the stressful and negative aspects of parenting; a parenting stress variable was not available in the Young Lives data. Although these stress variables were the best stressors available in the datasets, they do have some limitations.

The financial stress variable used in the Young Lives analyses was a multidimensional measure of socioeconomic status. When a multidimensional measure of poverty is used, the effects of parental separation on financial stress tend to be smaller than when a measure of income is used (Leturcq & Panico, 2019). This could be because the aspects of wealth included in multidimensional measures may be impacted less by experiencing a family structure transition than household income. For example, a parent or caregiver leaving the household may be more likely to lead to a reduction in household income than the quality of the house, although if the family move home following a transition, this is still a possibility. Therefore, the use of a multidimensional measure of stress may have contributed to the null findings in the Young Lives analyses. However, some aspects of the wealth index variable may be indirectly influenced by household income. For example, a reduction in household income following a transition may result in reduced access to services such as electricity or fuel for cooking (which are two of the services included in the wealth index variable), and so this variable may have indirectly captured changes to household income, suggesting that the

type of financial stress variable used has little to do with the lack of evidence for the instability hypothesis in the Young Lives countries.

Using household income as a measure of financial stress also has its limitations. Parents may prioritise the allocation of their financial resources towards their children so that their children do not feel the financial implications of experiencing a family structure transition (Leturcq & Panico, 2019), so a reduction in household income may not have a tangible impact on children's lives. Therefore, using household income as a financial stress variable may overestimate the impact of family structure transitions on children. Second, additional benefits received after a reduction in household income (e.g., subsidized childcare or healthcare) may cushion the financial ramifications of experiencing a transition (Fusco et al., 2011), particularly in Ireland where government safety nets are strong (Citizens Information, 2022). Further, although household income may reduce in the short-term, families tend to recover (i.e., increase their income or return to pre-transition levels) in the longer-term (Brewer & Nandi, 2014; Leturcq & Panico, 2019). So, some households may have financially recovered between the family structure transition occurring and the next round of data collection, given that the gap between the transition and measure of household income could be up to four years, which may underestimate the impacts of family structure transitions on financial stress.

Although most studies testing the instability hypothesis use a financial measure of stress (Hadfield, Amos, et al., 2018), this may not be the most optimal way of conceptualising and measuring the stress associated with family structure transitions. It could be that financial stress is only caused by certain types of family structure transitions. That is, we might expect that parent or caregiver exits from the household are more financially costly than parent or caregiver entrances (Hadfield, Amos, et al., 2018; Sun & Li, 2014), although the additional Young Lives analyses revealed that there was no evidence for the instability hypothesis in the four LMICs even when distinguishing between relationship formations and dissolutions. The instability hypothesis theorises that family structure transitions are stressful because a change in family structure causes disruption to the family system, with the type of transition unimportant (Fomby & Cherlin, 2007; Wu & Martinson, 1993), but this may only be true when stress is conceptualised in a specific way. For example, family structure transitions may always be *psychologically* stressful irrespective of the type of transition, but transitions may only be *financially* stressful for some transitions (i.e., parent/caregiver exits rather than

entrances). Indeed, using a psychological stress variable may be the most optimal way of measuring stress, because using a financial stress variable only tells us whether there has been a change in socioeconomic status or household income – it does not tell us whether this change was significant enough to be perceived as stressful. A perceived psychological stress variable was unfortunately not available in either the Young Lives or GUI datasets.

The use of a parenting stress variable in the GUI analyses aimed to address some of the limitations of using a financial stress variable. Although we might expect financial stress to be impacted more by certain types of family structure transitions (i.e., relationship dissolutions), parenting stress is likely impacted by all types of transitions (Beck et al., 2010). If a parent/caregiver leaves the household, the primary caregiver may feel a sense of increased responsibility for their child as the sole carer (e.g., the amount of time or money they have to invest in them), assuming that they take on the majority of caring responsibilities once the other parent/partner leaves the household. However, if custody is shared, the single parent may feel as though they have *fewer* parenting responsibilities than when they were living in a two-parent family, because single parents typically spend less time with their children (Kendig & Bianchi, 2008). If a parent/caregiver enters the household, parenting stress could increase because they are required to adapt to a new family system and share the parenting responsibilities, assuming that the parent's partner is at least somewhat involved in the caregiving of their child.

6.3.4 Measuring Child Physical Health

The physical health outcome is a further limitation of the analyses. When deciding what physical health variables to use, it was important that the facet of health measured could be affected by a family structure transition that potentially occurred several years ago. Therefore, more proximal measures of physical health were discarded (e.g., "Since this time yesterday, has [child] had…extreme lethargy?"), and the remaining variables focused on more general measures of physical health. Due to the large gaps between each round of data collection in both datasets, a family structure transition could have happened several years prior to the outcome being measured, and so it made sense to focus on general physical health rather than short-term physical health symptoms, such as "having a cough". This has implications for what I can conclude about family instability and children's physical health. In Ireland, family structure transitions were associated with worsened general physical health

for children, even though the transition could have occurred several years prior. This suggests that the effects of family structure transitions are potentially long-lasting in this context, which is in line with research which shows that the effects of family instability can persist throughout the life course (e.g., Fomby, 2013; Fomby & Bosick, 2013; Hampden-Thompson & Galindo, 2015; Wu & Martinson, 1993). Family structure transitions were not associated with children's general physical health in the Young Lives countries. These transitions may have relatively little impact on these children, or it could be that family structure transitions are associated with short-term reductions in physical health which I was not able to detect in my analyses.

6.4 Practical Implications

The findings in this thesis echo the existing family structure transition literature: transitions do not always lead to stress or to worsened outcomes for children. Experiencing a family structure transition was not associated with worsened financial stress in any of the four Young Lives countries. Financial stress, however, was associated with worsened general physical health and educational achievement for children. There is a widespread assumption that living in a stable, two-parent family is preferable for children. Consequently, a large number of resources are spent on marriage education programmes, such as the heavily promoted, multi-billion dollar "Healthy Marriage Initiative" in the United States (Randles, 2016). However, there is evidence both in this thesis and more generally which demonstrates that structural factors (e.g., poverty) have much stronger negative effects on children's development than family structure transitions, and with considerably larger effect sizes (i.e., the socioeconomic disadvantage hypothesis, see Cavanagh & Fomby, 2019) (Amato & Keith, 1991; Schoon et al., 2012). In contexts where children are faced with significant structural challenges, it is likely to be more beneficial to allocate resources towards tackling structural issues, rather than towards marriage promotion and relationship dissolution prevention.

When children experienced a family structure transition in Ireland, their physical health and educational achievement were slightly worse than children who had not experienced a transition. This suggests that there may be some benefits to creating policies which reduce the risk of relationship dissolution, or which reduce the stress of relationship dissolution for children and families when it occurs (Coleman & Glenn, 2010). Such policies could involve relationship strengthening programmes that equip couples with the knowledge and skills to

create and sustain healthy relationships. Focusing on relationship strengthening policies as opposed to *marriage* strengthening policies is favourable given that, in many parts of the world, couples are choosing to cohabit before or as an alternative to marriage (DeRose, Lyons-Amos, et al., 2017; Holland, 2017; Ortiz-Ospina & Roser, 2020). Cohabiting parents are more likely to experience family instability than their married counterparts (Cavanagh & Huston, 2006; Manning, 2015; Raley & Sweeney, 2020), and so excluding these families neglects a potentially important target group for these policies. The GUI findings also suggest that cultivating strong child-parent relationships can reduce the stress and therefore the negative implications of family structure transitions. Interventions that aim to help families foster close, warm relationships are likely to be beneficial to children's health and development, regardless of whether they experience a family structure transition.

6.5 Concluding Remarks

This thesis used two large, longitudinal datasets to identify the prevalence and consequences of family structure transitions in five geographically and culturally diverse countries. Previously, very little was known about how common these transitions are and how they affect children living outside of high-income countries. The findings from this thesis emphasise the importance of studying family relationships in a more diverse range of countries, as family structure transitions are equally as common in LMICs as they are in many high-income countries, and the effects of these transitions appear to differ across contexts. Adopting a more nuanced approach to studying family structure transitions is critical in order to illuminate the specific circumstances under which these transitions are stressful.

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Appendix A: Supplemental Information for Chapter 2

Mean, Standard Deviation (SD), and Range for Child Age (in Years) at Each Round for Every Country

| | Child age (years) | | | | | | | | | | | |
| | Ethiopia | | | India | | | Peru | | | Vietnam | | |
	M	*SD*	Range	*M*	*SD*	Range	*M*	*SD*	Range	*M*	*SD*	Range
Round 1	0.97	0.30	0.33-1.42	0.99	0.29	0.42-1.75	0.96	0.30	0.42-1.83	0.97	0.26	0.42-1.50
Round 2	5.15	0.32	4.33-6.25	5.36	0.32	4.50-6.33	5.29	0.39	4.42-6.25	5.25	0.31	4.00-6.67
Round 3	8.12	0.34	7.17-11.50	7.95	0.32	7.17-8.83	7.91	0.30	7.08-8.83	8.05	0.31	6.75-9.33
Round 4	12.12	0.32	11.33-13.00	11.98	0.32	11.17-12.83	11.92	0.31	11.25-13.67	12.20	0.31	11.25-13.58
Round 5	15.08	0.31	14.25-16.00	15.00	0.31	14.17-15.83	14.94	0.31	14.08-15.83	15.20	0.30	14.25-16.58

Appendix B: Supplemental Information for Chapter 3

Percentage of Children Living in Each Family Structure from Rounds One to Five (Ages 1 to 15) in Ethiopia, India, Peru, and Vietnam

	Ethiopia					India					Peru					Vietnam				
	R1	R2	R3	R4	R5	R1	R2	R3	R4	R5	R1	R2	R3	R4	R5	R1	R2	R3	R4	R5
Two-parent family	84.0	76.6	72.8	68.4	65.2	99.0	94.6	91.4	86.3	83.1	85.1	79.9	75.6	69.2	67.1	96.6	91.9	87.5	89.1	82.4
Single-parent family	12.7	16.1	18.0	18.7	21.0	0.5	3.9	5.1	8.6	11.9	13.5	14.2	15.7	18.4	18.7	2.4	4.7	7.0	5.9	11.2
Stepfamily	0.5	1.3	3.0	3.5	3.1	0.0	0.4	0.6	1.2	1.4	0.4	2.5	4.5	6.9	7.4	0.6	0.2	0.6	1.1	1.9
Grandparent-headed household	2.1	4.5	5.1	6.9	5.9	0.2	1.0	2.3	2.6	2.1	0.6	3.0	3.6	4.5	4.5	0.4	3.1	4.4	3.3	3.4
Sibling-headed household	0.1	0.5	0.3	0.6	1.0	0.0	0.1	0.1	0.2	0.3	0.0	0.1	0.2	0.4	1.3	0.0	0.0	0.0	0.1	0.3
Aunt/uncle-headed household	0.3	1.0	0.9	1.9	1.4	0.0	0.0	0.6	1.2	1.1	0.1	0.4	0.5	0.6	1.1	0.0	0.3	0.5	0.5	0.7

Appendix C: Application to Access the Young Lives Data

Project description

Changes in family structure can be stressful and lead to negative physical and psychological outcomes for the children experiencing them (Hadfield, Amos, Ungar, Gosselin & Ganong, 2018; Langlais, DeAnda, Anderson & Greene, 2018; Ryan & Claessens, 2013; Smith, Crosnoe & Cavanagh, 2017). However, much of the literature examining the impact of family structure transitions on child outcomes uses data from the Western world, in particular, the United States where family transitions are common. Little has been done to delve into the pervasiveness, and consequences of, changes in family structure in low-and-middle-income countries (LMICs), despite the majority of the world's children living in these areas. Youth from LMICs are faced with many challenges (i.e. access to water, child labour). The preponderance of family transitions in LMICs is under-researched, but if this is something that children from these areas are experiencing, then this may represent an additional challenge for children in LMICs. Perhaps if there are cultural expectations regarding family life in these countries, it could present an even *greater* challenge for those not conforming to those expectations due to the stigma surrounding family transitions.

Exploring how family transitions differ in LMICs would help to create a picture of the demographic trends in transitions and the consequences of those transitions for child mental health, in LMIC contexts that have differing sets of ideals and expectations regarding family life. The Young Lives data has followed the lives of children and families from Ethiopia, India, Peru and Vietnam for 15 years, and provides information on family structure (i.e. marital status, residence of the child's mother, frequency of contact with biological mother) that will serve as a useful tool to uncover the prevalence of family transitions in LMICs, as well as the sequelae of those transitions for children's mental and physical health and achievement. Understanding how family transitions effect children in LMICs will potentially provide a useful avenue for developing context-specific interventions for children and families in these areas.

Appendix D: Application to Access the Growing Up in Ireland Data

Research Microdata File (RMF) Application Form

Please tick one box only (using your mouse), where appropriate:

☒ This is an application for access to RMFs for a **new project.**
Sections A, B and D must be completed.

☐ This is an application to **renew** access to RMFs for an existing project where the purpose of the project remains unchanged. Only the researchers named on most recent RMF Standard Agreement may be included here.
Only this cover page and Sections C and D must be completed.

☐ This is an application to **add researchers** to an existing project.
Only this cover page, Sections A and D must be completed.

Instructions for completing RMF Application Form
This form must be completed by the Lead Researcher and submitted by email in .doc format to rcu@cso.ie. Please complete this form in MS Word or similar, do <u>not</u> print to complete.
Section C, the declaration, must be countersigned by the Research Organisation RMF Contact.
Please note that any reference to signature and date in this document can be read as meaning the typed name and date where such an application is forwarded electronically.

Lead Researcher:	**Rebecca Oldroyd**
Project Title*:	**Individual differences in the effects of family structure transitions on child development at different developmental stages**
Project Expiry Date*:	**September 2021**
Research Organisation:	**Trinity College Dublin**
Number of applicants:	**3**

* For applications to renew or to add researchers only.

Name(s) of all applicants:

Rebecca Oldroyd

Kristin Hadfield

Elizabeth Nixon

Section A – Researcher details

For new RMF applications and to add researchers to existing projects only

Section A must be completed for all applicants.

This application form must include the names and details of all researchers who will be involved in the proposed research project. Please copy and paste the tables below to input details of all researchers, where necessary.

To include details of each researcher named on page one. Researchers who have not previously been appointed as an Officer of Statistics are required to complete a separate Researcher Accreditation Application Form.

Please refer to your organisations' IT Service Desk for confirmation of your devices' public IP Address or organisations' IP Range.

Name:	Rebecca Oldroyd
Position:	PhD Student
Organisation:	Trinity College Dublin
Telephone:	
Email:	
Public IP address:	

Has this researcher previously been appointed as an Officer of Statistics?

Yes ☐　　　No ☒　If no, please complete separate Researcher Accreditation Application Form

Name:	Dr Kristin Hadfield
Position:	Assistant Professor
Organisation:	Trinity College Dublin
Telephone:	
Email:	
Public IP address:	

Has this researcher previously been appointed as an Officer of Statistics?

Yes ☒ No ☐ If no, please complete separate Researcher Accreditation Application Form

Name:	Dr Elizabeth Nixon
Position:	Assistant Professor in Developmental Psychology
Organisation:	Trinity College Dublin
Telephone:	
Email:	
Public IP address:	

Has this researcher previously been appointed as an Officer of Statistics?

Yes ☒　No ☐　If no, please complete separate Researcher Accreditation Application Form

For new RMF applications only

1. RMF Details

1.1 To which RMF(s) are you requesting access?

Growing Up in Ireland infant and child cohort.

1.2 Please specify the data reference period (e.g. *RMF name, Quarter, Year*):

Child ('98) cohort wave 1, 2, and 3. Infant ('08) cohort wave 1, 2, 3, 4, and 5.

2. Project Overview

2.1 Please provide details of the proposed research including an outline of the main objectives/goals of the proposed research. Sufficient detail should be provided to allow CSO staff to assess the proposal under the principle of data minimisation.

Family structure transitions can be defined as a change in family structure caused by a change in a parent's romantic relationship, through marriage, divorce, cohabitation, and moving in and out of dating relationships. Family structure transitions may cause stress which, in turn, can lead to negative outcomes for children. Negative outcomes range from impaired physical and mental health to lower educational attainment. However, family structure transitions are not always stressful, and therefore do not always lead to negative outcomes for children. Our previous research suggests that there are specific circumstances under which transitions are more or less harmful. The aim of this research project is to identify the effects of risk and protective factors (e.g. the quality of the child-parent relationship, parental conflict) that either expose children to, or shield them from, the potential negative outcomes associated with family structure transitions. We will use multilevel moderated mediation to test how these risk and protective factors influence the relationship between transitions, stress, and child health.

3. Statistical Disclosure Control

I confirm that I have read the guidelines and instructions on the use of RMF datasets referred to by the link below that are relevant to the RMFs to which access is being requested: https://www.cso.ie/en/aboutus/lgdp/csodatapolicies/dataforresearchers/rmfregister/

Yes   ☒
No   ☐

3.1 Please outline your understanding of Statistical Disclosure Control (SDC):

Drawing upon the Handbook of Statistical Disclosure Control (CENEX SDC, 2007), we understand that SDC refers to a set of methods to reduce the risk of disclosing information on individuals, businesses or other organizations. As named Officers of Statistics, we will apply SDC rules as outlined below to determine whether any aggregated data outputs are disclosive or not.

3.2 In relation to tabular outputs, please outline the criteria that you will use to determine if the aggregated data is disclosive or not:

All tabular outputs or other analysis will be vetted to ensure that there is no possibility of disclosure. As per GUI policy, we will not publish any outputs where the cell size is less than 30, or if the denominator is less than 100 in a percentage.

3.3 Please outline the approach you will adopt to deal with disclosive aggregates:

Disclosive aggregates will be restricted to the Officers of Statistics and these outputs will be deleted.

4. RMF Access and Security

4.1 Are there any other potential data sources for this proposed research? If so, please specify the data sources:

Rebecca Oldroyd and Kristin Hadfield have previously worked with data from the Young Lives study, which is a longitudinal international study of childhood poverty in Ethiopia, India, Peru, and Vietnam. A disadvantage of this dataset is that it lacks household/family variables which would allow us to explore mediators of the impact of family structure transitions on child health in detail. The Growing Up in Ireland data has a much richer variety of household/family variables (i.e. the quality of the child-parent relationship, parental conflict) which we can use to unpick the specific conditions in which family structure transitions lead to stress and poor child health. There are no other existing datasets which are able to effectively address our research question.

4.2 Why is access to an RMF(s) required for this project? (Explain why aggregated data is not sufficient.)

Our research requires the sensitive questionnaires which are only available in the RMF data files. The questionnaires contain variables on family circumstances. For example, "Roughly how often would you and your spouse / partner argue?" "How well do you get on with [study child]'s father?".

4.3 Have similar studies/projects been undertaken on this topic previously in Ireland? If so, please provide details:

Quantitative research has been conducted using the GUI data to examine the impacts of family structure transitions on child outcomes (Hannan & Halpin, 2014) and to examine family dynamics in 'non-traditional' family structures (e.g. Hadfield & Nixon, 2012). However, this research uses cross-sectional data which only allows for a static comparison of family structures (i.e. married versus non-married families). We would like to use longitudinal multilevel modeling to look at within-and between-person change in child outcomes over time, as a function of family structure transitions. Further, the GUI data has also been used to explore the association between the quality of the child-parent relationship and family structure (Högbacka et al., 2012). We would like to explore this association longitudinally, by looking at family structure *transitions,* and how the effects of these transitions are impacted by the quality of the child-parent relationship.

      Finally, qualitative work has been conducted on family structure transitions in Ireland using a variety of non-GUI data sources (Hadfield & Nixon, 2018; Hogan, Halpenny, & Greene, 2003). We would like to build on the qualitative work by Hadfield and Nixon (2018) by using the GUI data to quantitatively examine the themes that emerged in their interviews

with mothers and children. Specifically, we would like to examine the importance of the child-parent relationship, child-stepparent relationship, and parent-stepparent relationship in the family structure transition and child outcome relationship.

4.4 Will access to the RMF(s) be used to derive, either directly or indirectly, any monetary gain to you personally or to the organisation for whom you work? If so, please provide details:

No.

4.5 Do you, or the organisation for whom you work, have a vested interest (i.e. have a material interest in the activities or business performance of a particular enterprise or set of enterprises) in any of the entities that you believe may be on the RMF for which you are requesting access? If so, please outline details:

No.

4.6 Please detail the physical security measures in place (e.g. location of the PC used, storage of the fob, username and password) to prevent unauthorised access to the RDP by any person who is not an Officer of Statistics:

I am a PhD student based in London, but I will travel to Ireland to access and analyse the data at Trinity College Dublin. I will work in a room that is only accessible by other key holders, and I will work on a password protected computer. I will complete and write up the analysis whilst in Ireland. The fob will be securely stored in a locked draw that is only accessible to the Officers of Statistics.

5. Outputs
5.1 Please identify the target audience for the proposed outputs:

Family science/child development researchers
Policy makers in child welfare and child health

5.2 Will outputs from the proposed research be released into the public domain?
Yes   ☒
No   ☐
Please comment:

Papers published by UK-based researchers necessarily become open access after 6 months, so all papers published using GUI data will be in the public domain 6 months after publication. Where possible given available funds, we will publish any resulting papers open access immediately.

5.3 Will there be a cost to the public in accessing the results/outputs from the research? If so, please comment.

Accessing journal articles will incur a cost. However, after 6 months, those articles will be open access and thus accessible for free to the general public.

5.4 Please outline details of the proposed outputs (e.g. reports, publications, presentations, articles, etc.) from the research:

Results will be published in a research paper on the conditions in which family structure transitions lead to stress and worsened physical health for children. This will be submitted for publication to the Journal of Marriage and Family. Results will also be presented at the Society for Research in Child Development 2021 conference.

6. Contractors

6.1 Are you undertaking the research on your own behalf (including that of your organisation)?

Yes   ☒

No   ☐

If not, who is the contracting authority?

6.2 Please provide relevant contact details within the contracting authority:

Name:	
Full address of organisation:	
Position held:	
Email	
Phone:	

Section C - Reason for renewal

A project will only be considered for renewal if the details provided have not changed from the most recent RMF Standard Agreement for this project.

Applications to add researchers to an RMF project may only be submitted after an application for renewal has been approved.

Please outline the reason for which a renewal of the project is required:

Section D - Declaration

For all applications

1. **Declaration to be completed by lead researcher**

I confirm that the details provided in this application form are correct.

Name: **Rebecca Oldroyd**

Date: **10.08.2020**

Organisation: **Trinity College Dublin**

Name of Relevant Statistician: **Dr Kristin Hadfield**

Please forward this document to the Research Organisation RMF Contact for completion.

2. <u>Declaration to be completed by the Research Organisation RMF Contact</u>

I confirm that the details provided in this application form are correct and all that applicants named on page one are employed by, or formally related to, the research organisation.

Name: **Leonard Hobbs**

Date: **11th Sept 2020**

The Research Organisation RMF Contact should forward this document to rcu@cso.ie **on completion.**

Please note that any reference to signature and date in this document can be read as meaning the typed name and date where such an application is forwarded electronically.

For information on how we use your personal data, please see the Transparency Notice available from the following page:

https://www.cso.ie/en/aboutus/lgdp/csodatapolicies/dataforresearchers/

Section D - Declaration

For all applications

1. **Declaration to be completed by lead researcher**

I confirm that the details provided in this application form are correct.

Name:	**Dr Elizabeth Nixon, Dr Kristin Hadfield**
Date:	**10.08.2020**
Organisation:	**Trinity College Dublin (Psychology)**
Name of Relevant Statistician:	**Dr Kristin Hadfield**

Please forward this document to the Research Organisation RMF Contact for completion.

2. **Declaration to be completed by the Research Organisation RMF Contact**

I confirm that the details provided in this application form are correct and all that applicants named on page one are employed by, or formally related to, the research organisation.

Name:	**Leonard Hobbs**
Date:	**11th Sept 2020**

The Research Organisation RMF Contact should forward this document to rcu@cso.ie **on completion.**

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