

Differential grandparental involvement and its associations with adolescent grandchildren's self-concept

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Abstract

Research has demonstrated that grandparents are important figures in grandchildren's lives, and that grandparental involvement is positively associated with adolescents' well-being. Grandparental involvement, however, appears to be unequal with maternal grandmothers being the most involved, followed by equal involvement by maternal grandfathers and paternal grandmothers. Paternal grandfathers tend to be the least involved. This pilot study aimed to explore whether these differential patterns of grandparental involvement exist in the South African context and whether this differential level of involvement is associated with adolescent grandchildren's self-concept. Survey data was collected from 168 grade 8 and 9 learners (ages 12-15) from two co-educational, government high schools in Cape Town. Results from a repeated measures ANOVA indicated that the predicted differential patterns of grandparental involvement, were replicated in this South African sample. Stepwise multiple regression analyses indicated that age of grandparent, the number of grandchildren, gender of grandchild, quality of the parent-grandparent relationship, and parental encouragement were significantly associated with the level of grandparental involvement. Hierarchical multiple regressions indicated that there was no significant association between high maternal or high paternal grandparental involvement and adolescent grandchildren's self-concept. These results add to the growing literature on grandparents and grandchildren in South Africa. Future research should explore why these differential patterns of involvement exist and the associations of these differential involvement patterns with alternative measures of adolescent well-being.

Keywords: differential grandparental involvement, self-concept, well-being, adolescent grandchildren, South Africa.

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Introduction

Grandparental care makes an important contribution in society (Euler & Weitzel, 1996), particularly in the South African context. Multiple factors specific to South Africa affect family structures. The HIV epidemic and high maternal mortality have resulted in increased extended family (particularly grandmothers') involvement in children's lives (Madhavan, 2004). South Africa's history of apartheid strongly influenced family structures with migrant labour resulting in forced separation within black families (Madhavan, 2004). Post-apartheid South Africa has left many families in poverty, thus extended family households frequently occur as this allows for better utilization of available resources (Amoateng, Heaton, & Kalule-Sabiti, 2007). With this increase in intergenerational households in South Africa and increased life expectancy, the lives of grandparents and grandchildren are overlapping considerably, allowing grandparents to play an important part in their grandchildren's lives (Amoateng et al., 2007; Bengtson, 2001; Szinovacz, 1998). This can take the form of direct support to grandchildren themselves, such as psychological, physical and social support (Danielsbacka, Tanskanen, Rotkirch, & Perry, 2015; Michalski & Shackelford, 2005); or indirect support by reducing the parents' load of childcare (Coall & Hertwig, 2010; Danielsbacka et al., 2015; Michalski & Shackelford, 2005).

Grandparental involvement, however, does not appear to be equal: maternal grandmothers exhibit the highest involvement followed by maternal grandfathers and paternal grandmothers together. Paternal grandfathers' involvement is reportedly the lowest (Coall & Hertwig, 2010; Euler & Weitzel, 1996; Tanskanen & Danielsbacka, 2012). Grandparental involvement, in general, has been shown to be positively associated with aspects of adolescent grandchildren's well-being, particularly prosocial behaviour (Griggs, Tan, & Buchanan, 2010; Profe & Wild, 2015; Sear & Coall, 2011; Wild & Gaibie, 2014). Differential grandparental involvement and its associations with grandchildren's well-being, however, has largely been unexplored. Self-concept as a measure of well-being is an additional important aspect of well-being to investigate that has received little attention in grandparent research.

Differential Grandparental Involvement

Various theories provide predictions and explanations for differential grandparent involvement with grandchildren. Two key theories are evolutionary and socialization theories. Evolutionary theories focus on genetic relatedness, paternity uncertainty and sex specific reproductive strategies (Coall & Hertwig, 2010). Socialization theories focus on gender roles and parental mediation (Spitze & Ward, 1998).

Evolutionary theory and supporting research.

Genetic relatedness. Female humans display a number of atypical life history characteristics compared to other primates: they reproduce later, at a higher rate, and stop reproducing halfway through the human life span (Sear, Mace, & McGregor, 2000). This has been attributed to humans being a co-operative breeding species: group members who are not the genetic parents, help raise offspring (Hrdy, 2006). Grandmothers are seen as particularly important in providing care. According to the ‘grandmother hypothesis,’ a concept originally explored by Williams (1957), an older woman can increase her inclusive fitness more by investing time into her living, genetically-related children and grandchildren (which increases their survival rate) than by risking the costs of reproducing more herself (Coall & Hertwig, 2010). Inclusive fitness is an evolutionary concept developed by Hamilton (1964) and refers to the ability of a person to increase their chances of transferring their genes to future generations either through reproducing themselves or helping relatives, who carry their genes, to reproduce more. Hence, this unusually long post-reproductive period in human females is seen as evolutionarily advantageous (Sear et al., 2000; Tanskanen & Danielsbacka, 2012; Williams, 1957) as long as the benefits of the investment exceed the costs (Coall & Hertwig, 2010). The ‘grandmother hypothesis’ suggests that grandmothers are more involved than grandfathers and has been supported in previous studies (Griggs et al., 2010; C. Jamison, Cornell, P. Jamison, & Nakazato, 2002; Sear et al., 2000). This theory, however, does not necessarily predict differential grandparental involvement varying by lineage. Concepts of paternity uncertainty and sex specific reproductive strategies have been used to explore this pattern.

Paternity uncertainty. Paternity uncertainty refers to the uncertainty of the assignment of children to their biological fathers. Mammalian mothers know with certainty who their children are (Trivers, 1972). Fathers’ investment and childcare provision is determined by the probability of a child being genetically related. This extends to grandparents, with the most uncertainty attached to the paternal grandfather, whereas the maternal grandmother carries the most certainty. Maternal grandfathers and paternal grandmothers have fairly equal levels of uncertainty (Coall & Hertwig, 2010; Euler & Weitzel, 1996; Michalski & Shackelford, 2005). Paternity uncertainty is used to predict differential patterns of involvement. Grandparents’ confidence in their genetic relatedness to their grandchildren varies by gender and lineage, and hence predicts their involvement. This predicted pattern of uncertainty has generally been reflected in grandparent involvement

patterns illustrated in previous research (Euler & Weitzel, 1996; Michalski & Shackelford, 2005; Wild & Gaibie, 2014).

Sex specific reproductive strategies. ‘Parental investment’ is defined as any behaviour that contributes to the survival of the offspring (thus increased reproductive success) at the cost of the parent being able to invest in further offspring. Males have lower parental investment from conception through to child-rearing than females, who endure the costly pregnancy and child-rearing process (Trivers, 1972). Due to this costly investment, females generally provide higher levels of parental care and focus on producing fewer children who are healthy, whereas males have little cost and focus on increasing their number of offspring and reproductive success by mating with multiple females (Coall & Hertwig, 2010; Trivers, 1972). These differential reproductive strategies extend to grandparents who can increase their own reproductive success by increasing the survival or number of grandchildren by supporting their children’s reproductive strategies (Coall & Hertwig, 2010; Euler & Weitzel, 1996). Paternal grandparents’ interest is to take advantage of the fertility of their daughter-in-law, whereas maternal grandparents’ interest is to increase their daughter’s well-being to ensure survival of the daughter and her children (by increasing birth intervals for example) (Tanskanen & Danielsbacka, 2012). This evolutionary concept predicts differential grandparental involvement varying by lineage: maternal grandparents should show greater involvement with grandchildren than paternal grandparents (Mueller & Elder, 2003). This pattern has been supported by previous research (Dubas, 2001; Tanskanen & Danielsbacka, 2012; Wild & Gaibie, 2014).

Evolutionary theory, however, is merely one theoretical approach and although it predicts overall patterns, it does not take contextual factors into account. Socialization theories better illustrate the mechanisms and processes of specific contexts and societal norms which help create these patterns (Danielsbacka et al., 2015).

Socialization theory and supporting research.

Gender roles. Socialization theory states that women have been socialized into being ‘kin-keepers.’ Women have been socialized into maintaining relationships in the family and having the strongest relationships (Michalski & Shackelford, 2005; A. Rossi & P. Rossi, 1998). These gender roles reflect gendered division of labour in society where, traditionally, men are in the workplace and women raise the family (Spitze & Ward, 1998). This theory supports predictions that grandmothers are more involved than grandfathers (Dubas, 2001) (Dubas, 2001). It can also be used to explain differential grandparental involvement in unstable family structures. Due to this gender role development, when divorce occurs, it is

common for the mother to obtain custody, which can result in a severing of the relationship between paternal grandparents and grandchildren. This may reduce the opportunity fathers and paternal grandfathers have to be involved with their children and grandchildren (Michalski & Shackelford, 2005; Sear et al., 2000). This prediction of increased grandmother involvement compared to grandfathers has been supported by previous research (Griggs et al., 2010; Sear et al., 2000).

Mediation by parents. Socialization theories explore mediation as an important concept. Parents play an important role in mediating relationships between grandchildren and grandparents (Denham & Smith, 2015; Mueller & Elder, 2003). Grandparental involvement is seen as contingent on grandparent-parent relationships (A. Rossi & P. Rossi, 1998). With these gender roles in place, it is predicted that the strongest relationship will occur between maternal grandmothers and granddaughters through the mediation of the mothers (Dubas, 2001). This prediction is supported by some research (Uhlenberg & Hammill, 1998). The general process of parental mediation, however, has been shown in multiple studies: grandparents tend to have better relationships and emotional closeness with grandchildren when the grandparent-parent relationship is close (Michalski & Shackelford, 2005; Mueller & Elder, 2003).

Theoretical limitations. Although evolutionary and socialization theories can be used to predict differential involvement patterns, it is also important to note their limitations. Contradictory evidence against both theories is evident. With regards to evolutionary theory, limited studies have found no difference in the involvement of paternal grandmothers and grandfathers (Pollet, 2007). Additionally, paternity uncertainty playing a role in differential patterns of grandparent involvement, has been critiqued, as in contemporary societies paternity uncertainty is fairly low. Hence, it cannot be used alone to explain behaviours (Anderson, 2006). With regards to socialization theories, a small amount of research has found that paternal grandparents exhibit greater involvement with grandchildren than maternal grandparents. They have also found that men can fulfil the roles of ‘kin-keepers’ (see Dubas, 2001; King & Elder, 1995). Additionally, some research findings have not supported the prediction of matrilineal strength between maternal grandmothers and granddaughters (Thompson & Walker, 1987).

Evolutionary and socialization theories provide explanations for differential grandparental involvement varying by gender and lineage; however there are additional demographical and contextual factors that may confound results. These include the age (Spitze & Ward, 1998), proximity (Michalski & Shackelford, 2005), education,

socioeconomic status and number of grandchildren of the grandparent (Mueller & Elder, 2003). For example, maternal grandmothers tend to be the youngest grandparents and this may account for increased maternal grandmother involvement. Grandparents with many grandchildren have also tended to be less involved than grandparents with few grandchildren (Uhlenberg & Hammill, 1998). Cultural norms may also vary, for example, in farming communities grandfathers frequently show high involvement with grandchildren (King & Elder, 1995).

Although patterns of grandparental involvement can deviate from the predictions of evolutionary and socialization theories, using them in conjunction potentially provides a strong theoretical base for explaining and predicting differential grandparental involvement (Michalski & Shackelford, 2005). The majority of research supports the predicted hypotheses of both theories that maternal grandmothers are most involved, followed by equal involvement by maternal grandfathers and paternal grandmothers, and followed lastly by paternal grandfathers (Coall & Hertwig, 2010; Tanskanen & Danielsbacka, 2012).

Adolescent Well-Being

Well-being is seen as a useful indicator of the benefits of grandparental involvement. Historically, well-being of grandchildren was explored using survival rates; however in today's society, psychological well-being is a better indicator (Sear & Coall, 2011). Well-being is a widely defined concept that encompasses a range of attributes such as self-acceptance, autonomy, personal growth, sociability, mood and self-concept (Levitt, Guacci-Franco, & Levitt, 1993; Ryff, 2015). Well-being encompasses not only an absence of mental illness but also the presence of positive mental features (Ryff, 2015). It has been established internationally and locally that grandparental involvement is associated with grandchild well-being in terms of prosocial behaviour, psychological adjustment, behaviour and peer-relations (Griggs et al., 2010; Profe & Wild, 2015; Wild & Gaibie, 2014). Some research has indicated that grandparental involvement, varying by lineage, is associated with adolescent well-being: Tanskanen and Danielsbacka (2012) found that maternal grandparental involvement was associated with decreased levels of negative emotional and behavioural outcomes in grandchildren, whereas paternal grandparental involvement was not.

Self-concept in adolescent grandchildren is an important measure of well-being to explore (Manning, Bear, & Minke, 2006). Self-esteem and self-concept are often considered the same; however there are definitional differences. Self-esteem refers to accepting oneself, evaluation of one's life, self-worth and general contentment with oneself. Although self-concept incorporates self-esteem, self-concept is a multidimensional construct and goes

further to include the perceptions one has of one's capabilities in various aspects of life. Self-concept appears at a young age, but develops and incorporates additional dimensions until adolescence, when cognitive maturity and theory of mind has developed. This allows adolescents to accurately perceive themselves and others around them. During late childhood and early adolescence, however, self-perceptions and self-esteem can become more negative (Manning et al., 2006) and adolescents tend to become more self-conscious (Manning, 2007). During adolescence 'the self' becomes more complex as one begins to change and develop 'the self' in various contexts and with different people (Harter, Waters, & Whitesell, 1998). Gender differences in self-concept are also evident in adolescents. A meta-analysis illustrated that adolescent boys score higher for aspects of self-concept such as global self-concept, mathematical academic competency, appearance, athletic competency, and job competency. Girls tend to score higher on aspects such as having close friends and friendships with other girls, verbal competencies, and truthfulness (Wilgenbusch & Merrell, 1999).

Support from significant others in adolescents' lives can help with the development of the self (Harter et al., 1998). Although parents are generally viewed as key providers of support in children's lives, grandparents receive the next highest ratings for warmth, affirmation and importance (Furman & Buhrmester, 1985). They have the least conflict with their grandchildren compared to other family members, and are significant and supportive figures in grandchildren's lives (Furman & Buhrmester, 1985). Grandparents can be supportive by being a provider of unconditional love and care, rather than taking on an authoritative role (Mueller & Elder, 2003). Grandparents can provide encouragement and affirmation for adolescents, which is particularly important for the grandchild when parent-child conflict is occurring (Denham & Smith, 2015). Nurturance and acceptance have been shown to be important predictors of having a positive self-concept (Manning et al., 2006). Only a small amount of research has explored self-concept with close family members: Levitt et al. (1993) explored social networks in middle childhood and found that support from close network members was positively associated with self-concept. Deković and Meeus (1997) found that parental involvement, and specifically acceptance, was related with a positive self-concept in adolescent children. Previous research has not explored associations between grandparental involvement and self-concept in grandchildren.

Gaps in the Literature

A gap in the literature that research needs to focus on is differential grandparental involvement in the South African context. The studies on differential grandparental involvement have been conducted abroad. South Africa has a specific historical context and

cultural diversity, which affects how family structures occur: there is no general model for family structures and international findings may not generalise to the South African context (Amoateng et al., 2007). The lack of a general model for families stems from the wide range of factors specific to South Africa. The HIV epidemic in South Africa has resulted in high mortality, particularly maternal mortality, thus family networks and predominantly grandmothers tend to step in as caregivers (Madhavan, 2004). The consequences of the apartheid regime, such as migrant labour and high levels of poverty, are also felt today and result in many intergenerational households (Amoateng et al., 2007). South Africa is a multi-cultural nation with differing communities favouring different styles of living. Those favouring individualism tend to conform to independent living, whereas collectivist communities favour intergenerational living (Amoateng et al., 2007). All of these factors result in varying household structures in South Africa. It is important to explore whether the same patterns of differential grandparental involvement that are seen abroad, are evident in South Africa.

Methodologically, a criticism of past studies is that contact frequencies have often been used as a measure of involvement; however this may not measure the quality of the relationship and may not accurately reflect from whom contact was initiated. Frequency of contact may reflect parental desires rather than grandparental desire (Michalski & Shackelford, 2005).

Well-being is a widely defined concept, yet the majority of international and local studies exploring grandparental involvement and its effects on well-being (see Fergusson, Maughan, & Golding, 2008; Griggs et al., 2009; Profe & Wild, 2015) have defined well-being in terms of the five attributes of the Strengths and Difficulties Questionnaire (SDQ): emotional symptoms, hyperactivity/inattention, peer relationship problems, and pro-social behaviour (Goodman, Meltzer, & Bailey, 1998). Grandparental involvement and self-concept has not been explored and is worth exploring through research.

Research Aim and Hypotheses

This study aimed to address these gaps in the literature. It explored whether patterns of differential grandparental involvement applied to the South African context and whether the involvement of maternal and paternal grandparents was associated with adolescent grandchildren's well-being. The study used methods beyond contact frequencies to assess level of involvement and self-concept was used as a measure of well-being. The following hypotheses were tested:

1. Maternal grandmothers will be most involved, followed by equal involvement from maternal grandfathers and paternal grandmothers; and paternal grandfathers will be the least involved.
2. The level of grandparental involvement will be negatively associated with the age of grandparent and the number of grandchildren.
3. The level of grandparental involvement will be positively associated with the quality of the father-grandparent relationship, the quality of the mother-grandparent relationship, and parental encouragement of contact between grandparent and grandchild.
4. The level of involvement of the most involved maternal grandparent will be positively associated with self-concept in adolescent grandchildren.
5. The level of involvement of the most involved paternal grandparent will be positively associated with self-concept in adolescent grandchildren.

Methods

Design and setting

The design of this study was correlational and surveys were used to collect the data. The study was framed as a pilot study, as differential grandparental involvement and its associations with grandchildren's self-concept has been unexplored in the South African context.

Sample

A sample of 168 learners was recruited from grade 8 and 9 classes from two English speaking, co-educational, government high schools in Cape Town. The learners' ages ranged from 12-15 years. 57% of the learners identified as female and 43% as male. Convenience sampling with inclusion criteria was used. In order to compare grandparents' involvement varying by lineage, participants were required to have at least one living grandparent on both the maternal and paternal sides. 308 learners took parental consent forms (see appendix A) home and 18 learners were excluded as their parents did not consent to their participation. 110 learners' responses were ineligible due to not having at least one living maternal and paternal grandparent. 12 learner's responses were invalid due to either not responding to more than half of the questions, and/or due to incorrectly filling in the self-concept measure. Demographic information about the learners is displayed in table 1.

Table 1
Descriptive statistics: participant demographics
(n=168)

Variable		Frequency	Percent
Grade	8	118	70
	9	50	30
Age ^a	12	1	1
	13	60	36
	14	75	45
	15	30	18
Gender ^b	Female	96	57
	Male	71	43

^a 2 learners did not indicate their age

^b 1 learner did not indicate their gender

Power calculation

G* Power (Faul, Erdfelder, Lang, & Buchner, 2007) was used to calculate the sample size. There has been no research which explores differential grandparental involvement and its effects on adolescent's self-concepts, thus no established effect size could be used. A previous study however, explored parental involvement and its effects on adolescent self-concept (Deković & Meeus, 1997). An average R^2 of .18 from this study was used to determine a medium effect size in G* power. To be cautious, a lower effect size would be expected when exploring grandparental involvement, thus a smaller effect size (Cohen's f^2) of 0.10 with an alpha level of 0.05, and power of 0.80 was used. This resulted in a sample size of 125, thus the overall sample size of 168 was more than adequate.

Measures

Demographics. Participants were asked to provide demographic information, including their age, gender and grade. Participants were also asked to provide demographic information for their living grandparents including: age, and the total number of grandchildren they have. Age of grandparent was indicated and coded using age ranges: *younger than 50* (1), *in their 50s* (2), *in their 60s* (3), *in their 70s* (4), and *over 80* (5). Learners were given the additional option of *don't know* (system missing). The total number of grandchildren was measured and coded using categories: *just you* (1), *2 or 3* (2), *4 or 5* (3), and *6 or more* (4).

Parental influence. The quality of the father-grandparent relationship and mother-grandparent relationship was assessed by asking the learners how well their mother/father gets on with each of their living grandparents. Responses were scored on a scale from 1 (*not*

so well) to 4 (*very well*). Parental encouragement was assessed by asking learners if their parents encouraged them to spend time with their living grandparents. Learners could choose from *yes* (1) or *no* (0). Learners were also given the option of *don't have this parent*.

Grandparental involvement. Grandparental involvement was measured in various ways and learners could only answer for living grandparents. Firstly, learners were asked to specify which grandparent they felt the closest to. Secondly, frequency of contact between grandparent-grandchild was measured using three questions, which referred to how often they saw their grandparents, how often they contacted their grandparents (by telephone, letter, or via the internet) and how often their grandparents looked after them. The answers for each question were graded from 0-5 and the responses to the three questions were summed into a total score out of 15. Learners were then asked 11 questions about the nature of their relationship with each grandparent. These questions were based on Griggs et al., (2010) and then adapted to include Mueller and Elder's (2003) dimensions of grandparental involvement. These dimensions included direct contact, joint activities, intimacy and emotional support, verbal help and advice, and instrumental support. Each item was scored on a scale from 0-2. These were summed to give an involvement score for each grandparent, within a range of 0-22. These questions have been used before in larger South African studies (see Profe & Wild, 2015; Wild & Gaibie, 2014) and have yielded Cronbach's alpha scores ranging from .87 to .91.

Self-concept. Self-concept was measured using the Self-Perception Profile for Adolescents (Harter, 2012). This is a self-report measure appropriate for adolescents aged 13 to 18 years. It builds on the scale for children, and includes 45 items representing a diverse range of competencies including global self worth and eight specific areas of capabilities: scholastic, social, athletic, physical, and job competencies; as well as romantic appeal, behavioural conduct and close friendship. Questions were represented in a structured format that asked the adolescent the degree to which they identified with the statement. This structure was created to prevent adolescents answering in a socially desirable way and counterbalancing of questions was used to avoid response set answering by the adolescents. Scoring followed the recommendations of the manual. Each item's answer was rated on a scale from 1-4. This measure has shown high reliability and validity. Internal consistency of the subscales ranged from cronbach's alpha scores of .74 to .92 in samples administered by Harter (2012) during the development of the Self-Perception Profile for adolescents. Various forms of validity were assessed: the measure had good face validity; subscales were deemed

distinct; and it had convergent validity with other scales of self-perception (Harter, 2012). See appendix B for a copy of the survey.

Procedure

The surveys were administered during classes allocated by the heads of the grades. Information on the survey proceedings, withdrawal and confidentiality was explained to the participants before the survey began (see appendix C). The Self-Perception Profile for Adolescents was administered according to the revised manual, which involved guiding the learners through a sample question beforehand (Harter, 2012).

Ethical considerations

Ethics approval was granted by the Department of Psychology of the University of Cape Town (see appendix D) and by the Western Cape Education Department (see appendix E). Permission was granted from the principals and the heads of the grades from the two government high schools from which the sample was recruited.

Learners were informed that participation in the study was voluntary and that they could withdraw at any point. The learners were not compensated for participating. Survey material was kept confidential and the surveys were anonymous. Learners took home letters to their guardians informing them of the study and passive consent was used, i.e. guardians had to return the form only if they did not want their child participating. If no response was received from parents, consent was assumed (see appendix A). Each student who received consent from their parents was also required to give assent in order to partake. The learners filled in an assent form (see appendix F) before completing the survey. No learners who received parental consent, refused assent. No formal debriefing occurred; however, the learners were thanked for their time and contribution towards the research, and were given the opportunity to ask any questions regarding the research.

Statistical analysis

Differential grandparental involvement. A repeated measures ANOVA was used to analyse if differential patterns of involvement existed between grandparents varying by gender and lineage. This analysis was conducted using IBM SPSS Statistics (version 22.0). A post-hoc LSD was used to test the hypothesis that maternal grandmothers would exhibit the highest involvement and paternal grandfathers the least (Coall & Hertwig, 2010; Michalski & Shackelford, 2005) with equal involvement from maternal grandfathers and paternal grandmothers, i.e. no significant difference between these groups (Euler & Weitzel, 1996). Stepwise multiple regressions were conducted to assess the associations between the level of grandparental involvement and variables including gender of grandchild, age of grandparent,

number of grandchildren, and the quality of the mother-grandparent and the father-grandparent relationships, and parental encouragement. Stepwise multiple regressions were used as there was not prior reasoning to hierarchically order the variables.

Differential grandparental involvement and self-concept. A factor analysis was conducted on the data output of Harter's Self-Perception Profile for Adolescents (2012) in order to minimize loss of degrees of freedom in subsequent multiple regressions. Previous research has used the same approach for this measure (Worrell, 1997). Additionally, two new variables were created: most involved maternal grandparent involvement score and most involved paternal grandparent involvement score. This allowed all of the participants' data to be included in the analysis as each had at least one living maternal and one living paternal grandparent. Additionally, creating involvement score variables for the most involved maternal grandparent and most involved paternal grandparent helped minimize shared variance between maternal grandmothers' and grandfathers' involvement scores, and paternal grandmothers' and grandfathers' involvement scores. Research indicates that married grandparents frequently show similar involvement with grandchildren due to marriage and living arrangements (Uhlenberg & Hammill, 1998). Two hierarchical multiple regressions were conducted to explore if most involved maternal and paternal grandparental involvement scores were associated with the factors of self-concept. Gender of the grandchild was used as a control variable as it has been shown to influence self-concept (Wilgenbusch & Merrell, 1999).

Results

Differential Grandparental Involvement

Participants were asked to specify which grandparent they felt closest to (table 2). Maternal grandmothers were perceived as the closest grandparent by 60% of participants. Paternal grandfathers were only considered the closest grandparent by 6% of participants. Grandmothers were more frequently rated as the closest grandparent than grandfathers for both maternal and paternal grandparents.

Table 2
Perceived closest grandparent (n=143)

Variable	Frequency	Percent
Closest grandparent Maternal grandmother	86	60.14
Maternal grandfather	16	11.19
Paternal grandmother	32	22.38
Paternal grandfather	9	6.29
Total ^a	143	100

^a 25 learners did not indicate their closest grandparent

The frequency of grandparental contact, ranging from 0-15, is depicted in table 3 using means (*M*) and standard deviations (*SD*). Maternal grandmothers had the highest mean scores of contact, followed by maternal grandfathers, then paternal grandmothers and paternal grandfathers respectively. Differing sample sizes (*n*) occurred across grandparent groups due to missing data and the varying numbers of living grandparents each participant had.

Table 3
Frequency of grandparental contact

Grandparent	n	<i>M</i>	<i>SD</i>
Maternal grandmother	157	8.46	3.60
Maternal grandfather	106	7.10	3.83
Paternal grandmother	147	6.61	3.80
Paternal grandfather	85	6.00	3.64

The most important measure of grandparental involvement was the grandparental involvement scores gathered from 11 survey questions. The sample size was *n*=43 as cases with missing data were excluded. Thus, only participants with all four grandparents living were included in the study. Table 4 indicates mean grandparental involvement scores. Maternal grandmothers had the highest mean scores for involvement and paternal grandfathers the lowest mean scores. Maternal grandfathers' and paternal grandmothers' involvement scores fell in the middle.

Table 4
Descriptive statistics: grandparent involvement scores (n=43)

Grandparent	<i>M</i>	<i>SD</i>
Maternal grandmother	13.70	5.15
Maternal grandfather	12.49	4.92
Paternal grandmother	11.35	5.37
Paternal grandfather	7.67	5.20

The analysis indicated that the assumption of normality was upheld, however, the assumption of sphericity was violated, thus Greenhouse-Geisser estimates were used in the analysis. The repeated measures ANOVA conducted showed that the gender and lineage of a grandparent was significantly associated with their involvement with their grandchildren, $F(2.09, 87.94) = 14.09, p < .001$. The partial $\eta^2 = .25$ indicates that grandparents' gender and lineage explained 25% of the variance in grandparental involvement scores. The LSD post-hoc analysis explored the significant differences through pairwise comparisons. Maternal grandmothers were significantly more involved than paternal grandfathers ($MD=6.02, SE=1.05, p < .001$) and paternal grandmothers ($MD=2.35, SE=1.00, p=.024$). Maternal grandmothers, however, were only marginally significantly more involved than maternal grandfathers ($MD=1.21, SE=.61, p=.053$). Maternal grandfathers and paternal grandmothers did not significantly differ in involvement scores ($p=.338$). Paternal grandfathers were significantly less involved than all other grandparents, namely maternal grandmothers ($MD=-6.02, SE=1.05, p < .001$), maternal grandfathers ($MD=-4.81, SE=1.09, p < .001$), and paternal grandmothers ($MD=-3.67, SE=1.05, p < .001$). This pattern is illustrated in figure 1.

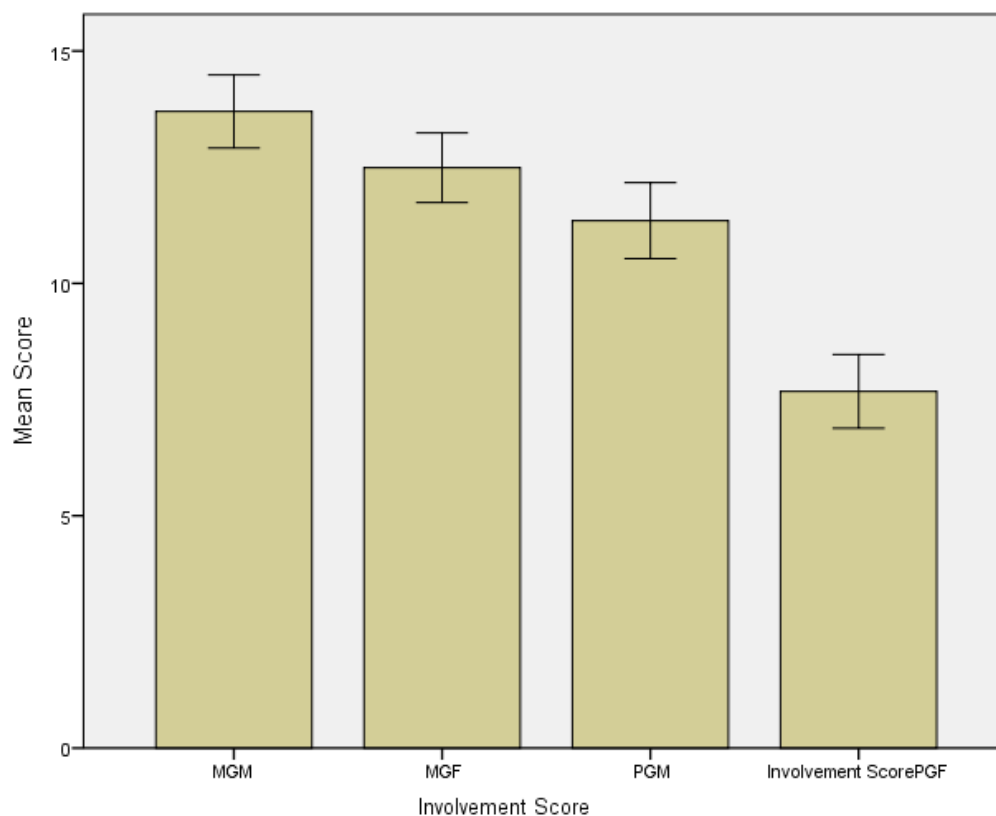


Figure 1. Bar graph showing mean involvement levels of grandparents varying by gender and lineage (Error bars +/- 1 standard error)

Predictors of Grandparental Involvement

Demographic information about the learners' grandparents is displayed in figures 2 and 3. Figure 2 illustrates the trend that maternal grandmothers tended to be the youngest grandparent and paternal grandfathers the oldest. Figure 3 illustrates the number of grandchildren for each grandparent

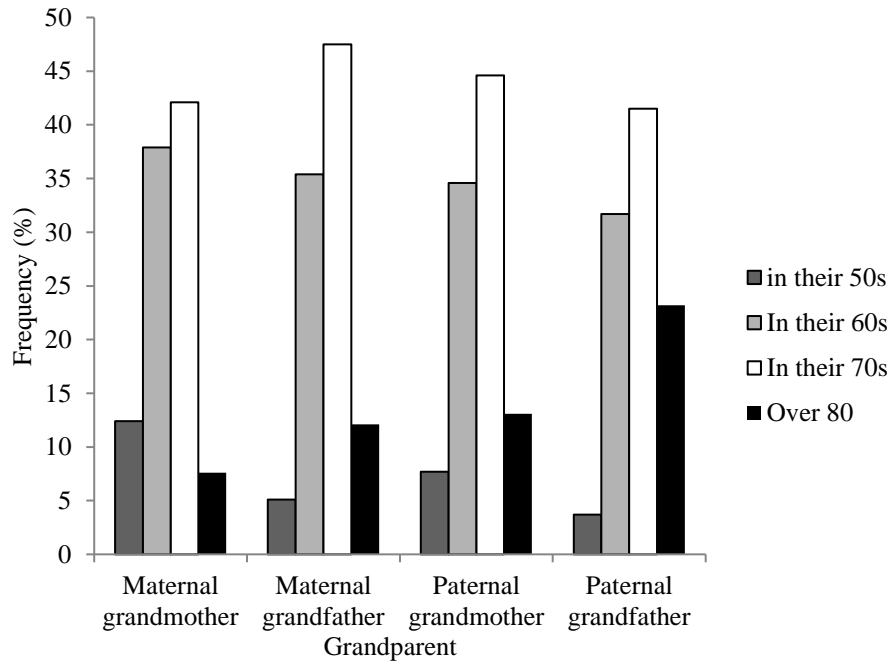


Figure 2. Bar chart illustrating the frequency of age ranges of grandparents varying by gender and lineage

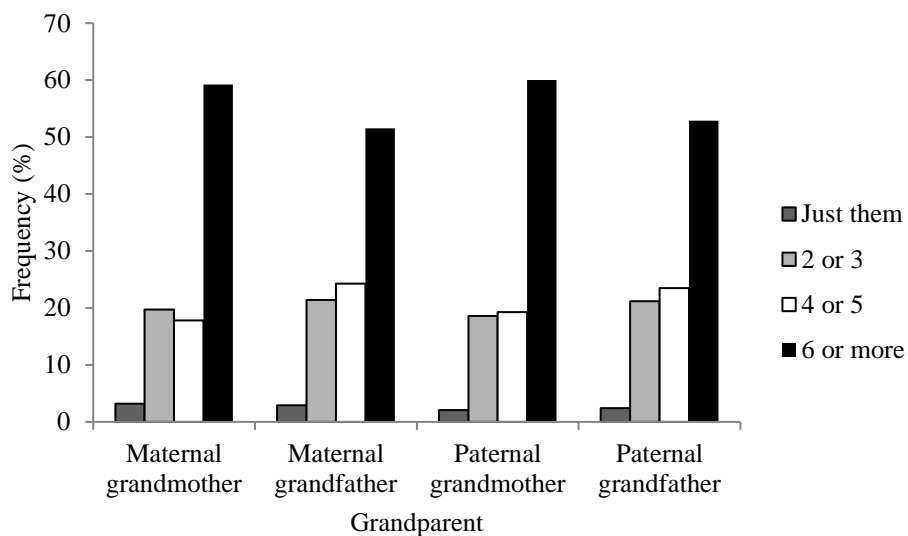


Figure 3. Bar chart illustrating the number of grandchildren of each grandparent varying by gender and lineage

Four stepwise multiple regressions were run to assess whether the factors suggested in social theories such as gender of grandchild, the quality of the mother-grandparent relationship, the quality of the father-grandparent relationship, and parental encouragement were associated with the relevant grandparent's involvement. Additionally, demographic factors such as the number of grandchildren and the grandparent's age were included. There was no prior reasoning to hierarchically order the variables. A bonferroni correction was used to account for running four multiple regressions and to avoid type 1 errors. Hence, only p values below .0125 were accepted as significant. Overall, the assumptions of normality and homoscedasticity were upheld and as multiple regression is a robust test, slight violations of homoscedasticity were accepted. See table 5 for each variables' R^2 and β and p values. VIF and tolerance scores for each regression analysis indicated that collinearity was not a problem. The standard errors, zero-order correlations, and part/partial correlations were fairly stable for all four regressions, thus there was no concern over the stability of the predictors.

Maternal grandmother involvement. The results indicate that parental encouragement, age of maternal grandmother, and the quality of the father-maternal grandmother relationship significantly predicted maternal grandmothers' involvement scores, $F(3,131) = 15.49, p < .001$ with an R^2 of .26 (thus accounting for 26% of the total model's variance). The beta values indicate that age of maternal grandmother was the strongest predictor of involvement and indicated a negative relationship, thus older maternal grandmothers were associated with lower levels of involvement. This was followed by parental encouragement and quality of the father-maternal grandmother relationship, which both showed positive relationships.

Maternal grandfather involvement. The analysis indicated that the quality of the mother-maternal grandfather relationship, gender of grandchild, and age of maternal grandfather significantly predicted maternal grandfathers' involvement scores, $F(3,85) = 11.87, p < .001$ with an R^2 of .30, thus accounting for 30% of the total model's variance. The beta values indicate that the quality of the mother-maternal grandfather relationship was the strongest predictor of maternal grandfathers' involvement scores. The positive beta value for gender indicates that maternal grandfathers were more involved with grandsons than granddaughters. Age of maternal grandfather had a negative relationship with involvement scores, thus older maternal grandfathers were associated with less involvement.

Table 5

Results of stepwise regressions showing significant predictors of grandparental involvement scores varying by gender and lineage

Predictors	Maternal grandmother involvement			Maternal grandfather involvement			Paternal grandmother involvement			Paternal grandfather involvement		
	ΔR^2	B	<i>p</i>	ΔR^2	B	<i>P</i>	ΔR^2	B	<i>P</i>	ΔR^2	B	<i>p</i>
Gender of grandchild ^a				.09	.29	.002						
Quality of the mother-grandparent relationship				.13	.34	.001	.22	.44	.000	.25	.50	.000
Quality of the father-grandparent relationship	.05	.24	.003									
Parental encouragement ^b	.14	.30	.000				.07	.28	.001			
Age of grandparent	.07	-.34	.001	.07	-.27	.004		.				
Number of grandchildren							.05	-.22	.005			

^a 0= Female, 1= Male.

^b 0= No, 1 = Yes.

Paternal grandmother involvement. The results indicate that the quality of the mother-paternal grandmother relationship, parental encouragement, and number of grandchildren significantly predicted paternal grandmother involvement scores, $F(3,117) = 19.40, p < .001$ with an R^2 value of .33, thus accounting for 33% of the total model's variance. The beta values indicate that the quality of the mother-paternal grandmother relationship was the strongest predictor of paternal grandmothers' involvement scores. This was followed by parental encouragement and number of grandchildren. The relationship between the number of grandchildren and involvement scores was negative, thus paternal grandmothers with many grandchildren were associated with lower levels of involvement.

Paternal grandfather involvement. The analysis indicated that the quality of the mother-paternal grandfather relationship and parental encouragement significantly predicted paternal grandfather involvement scores. However, after the bonferroni correction was applied, parental encouragement did not significantly predict involvement. Thus, the final model was $F(1,75) = 25.22, p < .001$ with the quality of the mother-paternal grandfather relationship accounting for 25.4% of the total model's variance.

Grandparental Involvement and Self-Concept

Factor analysis. A principal components factor analysis was conducted on the data of the subscales of the Harter Self-Perception Profile for Adolescents (2012). Orthogonal rotation was conducted using varimax normalized rotation method. The sampling adequacy was acceptable ($KMO = .72$) and all individual KMO values were greater than the acceptable level of .50. Bartlett's test of sphericity was significant ($p < .001$) indicating that factor analysis was an appropriate method. The initial analysis showed that three factors had eigenvalues over 1. The scree plot, however, visually indicated that there were only two clear underlying factors (see appendix G). The third factor had an eigenvalue of 1.02, only marginally over 1, thus two factors were requested for extraction. The two factors had eigenvalues of 3.03 and 1.52. Together these factors accounted for 50% of the total explained variance. The rotated component matrices and communalities were used to determine which subscales were to be excluded (see table 6). The rotated component matrix indicated that global self-worth and behavioural conduct loaded highly onto factor 1. Physical appearance and scholastic competence loaded moderately onto factor 1. Close friendship loaded almost equally onto factors 1 and 2. Athletic competence, romantic appeal and social competence loaded highly onto factor 2. Job competency did not load well onto either factor 1 or 2. By looking at both the communalities and rotated component matrix, close friendship and job competency were excluded from the analyses as they did not contribute significantly to the

under lying factor structure. Factor 1 was labelled ‘adult-valued subscale of self-concept, and factor 2 was labelled ‘peer-valued subscale self-concept.’

Table 6
Factor analysis of Harter Self-perception profile for adolescents showing communalities and rotated component matrix

	Component		Communalities
	Factor 1	Factor 2	
Global Self-Worth	.79		.75
Behavioural Conduct	.75		.60
Physical Appearance	.63		.52
Scholastic Competence	.56		.31
Close Friendship	.43	.41	.35
Athletic Competence		.81	.70
Romantic Appeal		.72	.52
Social Competence		.71	.65
Job Competence			.14

Table 7 illustrates the means (*M*) and standard deviations (*SD*) for the adult-valued and peer-valued subscales of self-concept and for the most involved maternal and paternal grandparent involvement scores. Adult-valued and peer-valued subscales of self-concept had similar mean scores and standard deviations. These were close to the expected scores of means (around 2.9) and standard deviations (0.5 - 0.75) identified by Harter (2012) in previous administrations. The initial descriptive statistics indicate that most involved maternal grandparent involvement score had a higher mean involvement score than the most involved paternal grandparent.

Table 7
Descriptive statistics of adult-valued and peer-valued subscales of self-concept, and most involved maternal and paternal grandparental involvement scores (n=163)

	M	SD
Adult-valued subscale of self-concept	2.78	.49
Peer-valued subscale of self-concept	2.59	.59
Most involved maternal grandparent involvement score	13.45	5.08
Most involved paternal grandparent involvement score	10.53	5.63

Correlations. Correlations between the variables used in the multiple regressions are displayed in table 8. As expected, adult-valued and peer-valued subscales of self-concept were significantly correlated. The only additional significant correlation occurred between

the peer-valued subscale of self-concept and gender. The positive relationship indicates that being male was associated with higher scores of the peer-valued subscale of self-concept.

Table 8

Correlations between adult-valued subscales of self-concept, peer-valued subscales of self-concept, gender, most supportive maternal grandparent involvement score and most supportive paternal grandparent involvement score (n=163)

	Adult-valued subscale of self-concept	Peer-valued subscale of self-concept	Gender ^a	Most involved maternal grandparent involvement score	Most involved paternal grandparent involvement score
Adult-valued subscale of self-concept	1.00	.291*	.14	-.01	.02
Peer-valued subscale of self-concept	.291*	1.00*	.26*	.02	.03
Gender ^a	.14	.26*	1.00	.05	.04
Most involved maternal grandparent involvement score	-.01	.02	.05	1.00	.05
Most involved paternal grandparent involvement scores	.02	.03	.04	.05	1.00

* $p < .005$

a: 0=female 1=male

Multiple regressions. Hierarchical multiple regressions were conducted to assess whether most involved maternal and paternal grandparents' scores predicted adult-valued and peer-valued subscales of self-concept. The assumption of normality was inspected using a histogram and pp plot and was upheld. The assumption of homoscedascity was inspected using a scatter plot and was found to violated, however, multiple regression is robust thus the analyses continued. Tolerance and VIF scores indicated that no issues of collinearity were present. Table 9 indicates the R^2 , β , and p values for both regressions.

Adult-valued subscales of self-concept. The ANOVA output indicated that the model controlling for gender only, was not a significant predictor of adult-valued subscales of self-concept in grandchildren, $F(1, 161) = 3.21$, $p=.075$. The second model of most involved maternal and paternal grandparents' involvement predicting adult-valued subscales of self-concept after controlling for gender of grandchild, was also not significant, $F(3,159) = 1.08$, $p=.361$.

Peer-valued subscales of self-concept. The ANOVA output indicated that the first model using gender to predict peer-valued subscales of self-concept in grandchildren was significant, $F(1,161) = 11.15, p=.001$. Adding the variables of most involved maternal and paternal grandparent involvement scores did not significantly change the R^2 value. Most involved maternal and parental grandparents' involvement scores were not significant predictors of peer-valued subscales of self-concept in grandchildren. Gender significantly accounted for 7% of the total variance in the model. The beta value for gender indicates that male learners had higher scores on peer-valued subscales of self-concept than female learners.

Overview

These results show that hypothesis 1 was fully supported: maternal grandmothers were the most involved, followed by equal involvement of maternal grandfathers and paternal grandmothers and lastly, the least involvement was observed in paternal grandfathers. Hypothesis 2 and 3 were partially supported: age of grandparent was associated with maternal grandparents' involvement only. Number of grandchildren was associated with paternal grandmothers' involvement only. The quality of the mother-grandparent relationship was associated with maternal grandfathers' and paternal grandparents' involvement. The quality of the father-grandparent relationship was associated with maternal grandmothers' involvement only. Parental encouragement was associated with grandmothers' involvement only. Hypothesis 4 and 5 were not supported: the most involved maternal and paternal grandparents' involvement scores were not associated with adolescent grandchildren's self-concept.

Table 9

Results of hierarchical multiple regressions assessing whether most involved maternal or paternal grandparent involvement scores predict self-concept in adolescent grandchildren.

Predictors	Adult-valued subscales of self-concept			Peer-valued subscales of self-concept		
	ΔR^2	B	<i>p</i>	ΔR^2	B	<i>p</i>
Step 1	.02		.075	.07		.001
Gender of grandchild ^a		.14	.075		.25	.001
Step 2	.00		.974	.00		.963
Gender of grandchild ^a		.14	.077		.25	.001
Most involved maternal grandparent		.01	.862		.01	.917
Most involved paternal grandparent		.01	.876		.02	.802

^a 0 = Female, 1 = Male

Discussion

Differential Involvement Patterns

The first part of the study aimed to determine whether levels of grandparental involvement, varying by gender and lineage, differed, and which variables were associated with this differential pattern. The results supported the hypothesis that maternal grandmothers exhibit the highest involvement, followed by equal involvement by maternal grandfathers and paternal grandmothers, with paternal grandfathers exhibiting the least involvement. This pattern is consistent with previous research (Coall & Hertwig, 2010; Danielsbacka et al., 2015; Euler & Weitzel, 1996; Tanskanen & Danielsbacka, 2012). In addition to the 11 item involvement score, two other forms of involvement were measured, which reiterated this pattern: perceived closest grandparent and frequency of contact. The results of the variable of the perceived closest grandparent exhibited almost the same pattern as the 11 item involvement scores, with maternal grandmothers most frequently chosen and paternal grandfathers the least chosen; however it differed in that paternal grandmothers were chosen more than maternal grandfathers. This is not necessarily a reliable form of assessing involvement however, as it has been shown that perceptions of closeness differ when asking grandparents versus grandchildren (Harwood, 2001). The mean scores of frequency of contact of each grandparent illustrated the exact same differential pattern of involvement as the repeated measures ANOVA on the 11 item involvement scores. Frequency of contact is usually considered fairly unreliable, as it may reflect parental desire for contact instead of grandparental desire for contact (Michalski & Shackelford, 2005), thus it cannot stand alone as evidence. In this study, it merely serves as additional evidence for the differential pattern of involvement.

Evolutionary theories. Evolutionary theories can help to explain the differential patterns of grandparental involvement observed in this study. For example, the finding that grandmothers were significantly more involved than their male counterparts could be due to the different length of time that men and women can reproduce for. Grandmothers who can no longer reproduce are expected to become more involved with their grandchildren as a way to increase their inclusive fitness. Grandfathers, in contrast, do not pay grandchildren as much attention as they can increase inclusive fitness by reproducing themselves for much longer (Coall & Hertwig, 2010; Dubas, 2001). Although this ‘grandmother hypothesis’ (Williams, 1957) does not explain why maternal grandmothers were more involved than paternal grandmothers, this specific pattern can be explained in terms of paternity uncertainty and sex-specific reproductive strategies. The maternal grandmother has the most certainty that her

grandchildren are genetic descendents, and paternal grandfathers the least, with medium levels of certainty experienced by maternal grandfathers and grandmothers. This can explain the pattern of differential involvement illustrated in the results, as higher certainty of genetic relatedness is associated with higher involvement (Coall & Hertwig, 2010; Danielsbacka et al., 2015; Dubas, 2001). Grandparents may also have supported their children's reproductive strategies, which in turn affected their level of involvement. The maternal grandparents, and particularly maternal grandmother, may have focused their efforts on supporting their daughter's reproductive strategy of having few, healthy grandchildren. Hence, the maternal grandmother was the most involved. The paternal grandparents, and particularly the paternal grandfather, may have supported their son's reproductive strategy of reproducing as much as possible, and high involvement with grandchildren is unnecessary (Coall & Hertwig, 2010; Trivers, 1972). Similar findings and conclusions have been drawn in previous research (Friedman, Hechter, & Kreager, 2008).

Socialization theories. Socialization theories can additionally be helpful at explaining the differential patterns of grandparental involvement observed in this study. For example the finding that maternal grandmothers were the most involved can be explained by gender roles and norms, such as women being socialized into the 'kin-keepers' of the family (Michalski & Shackelford, 2005) and women bonding over the experience of motherhood (Barnett, Scaramella, Neppl, & Conger, 2010; Uhlenberg & Hammill, 1998).

Socialization theories can also explain the results around the variables of the quality of the parent-grandparent relationship and parental encouragement. Socialization theories argue that the grandparent-grandchild relationship does not occur in isolation from the rest of the family and is frequently facilitated by parents. Results indicated that the quality of the mother-grandparent and father-grandparent relationships were positively associated with grandparental involvement. This finding has been supported by previous research (see Barnett et al., 2010) which draws on socialization theories and concepts such as parents as mediating figures between the grandparent and grandchild. The results indicate that the quality of the mother-grandparent relationship was significant for specifically the maternal grandfather, paternal grandmother and paternal grandfather. The quality of the father-grandparent relationship was significant only for the maternal grandmother. This result aligns itself with previous social research conducted on the grandparent-grandchildren relationship. Fingerman (2004) found that the quality of the grandparent-grandchild relationship was associated more with the quality of the grandparent's relationship with their children-in-law, than the quality of the grandparent's relationship with their own children. It could be

speculated that that the parents act as gatekeepers with grandparents who are not their own parents. The finding that parental encouragement was positively associated with maternal grandmothers' and paternal grandmothers' involvement scores, can additionally be explained by socialization theory. This again links to women being the 'kin-keepers' in the family, who try to increase family contact. It has been argued, however, that one would then expect high involvement from both maternal and paternal grandmothers, yet the results indicate that maternal grandmothers exhibit higher involvement. This has been argued to be attributed to the matrilineal strength: the maternal grandmother and mother frequently reject involvement from the paternal grandmothers. Consequently, the involvement patterns do not necessarily reflect paternal grandmothers' intentions, but rather parental intention (Barnett et al., 2010; Dubas, 2001). Previous research has found similar findings that parental encouragement was significantly associated with grandparental involvement (Barnett et al., 2010).

Additional factors. Evolutionary and social theories are two very different theories, which together can provide explanations for the results obtained from the research. There are, however, other demographic factors that can influence involvement of grandparents, which are not explained by evolutionary or social theories. Two of these factors were included in the research: age of grandparent and number of grandchildren.

Age of grandparent. The descriptive statistics (figure 2) indicate that all four grandparents had the same modal age of *in their 70s*, however maternal grandmothers tended to be the youngest grandparent and paternal grandfathers the oldest. This aligns itself with previously identified patterns (Euler & Weitzel, 1996). The results indicated a significant negative association between age of maternal grandparents and their involvement. Previous research has shown, that grandchildren have closer relationships with younger grandparents (Attar-Schwartz, Tan, & Buchanan, 2009). Thus, these results partially support previous research findings.

Number of grandchildren. The results indicate that there was a negative association between the number of grandchildren paternal grandmothers had and their involvement scores. Research has indicated that a negative relationship exists between number of grandchildren and degree of involvement with grandchildren (Uhlenberg & Hammill, 1998) as grandparents may not be able to sufficiently be involved in all of their grandchildren's lives (Mueller & Elder, 2003). Thus, these results partially support previous research findings.

Adolescent self-concept

The second part of the study aimed to assess whether high maternal and paternal grandparental involvement was positively associated with self-concept in adolescent grandchildren.

Adult-valued versus peer-valued self-concept. The factor analysis indicated that there were two clear underlying factors in the data related to the Self-Perception Profile for Adolescents (2012). Factor 1 consisted of global self-worth, behavioural conduct, physical appearance, and scholastic competence. Factor 2 consisted of athletic competence, romantic appeal, and social competence. A study by Worrell (1997) similarly found two underlying factors in the Self-Perception Profile for Adolescents (2012). The subscales, however, differed slightly with factor 1 consisting of scholastic, athletic, job competencies and behavioural conduct. Factor 2 consisted of social competence, physical appearance, romantic appeal and close friendship subscales. The slight differences in these outcomes could be attributed to the different samples. For example, the finding that academic competency and global self-worth loaded onto the same factor could be attributed to the fact that the two schools from which the sample was recruited, place a high value on academic achievement. The underlying factor structure found in this study is supported by preliminary administrations after the development of the scale. Harter (2012) and Worrell (1997) found correlations ranging from .37 to .45 between scholastic competency and behavioural conduct. Additionally, Harter (2012) found high correlations (up to .73) between physical appearance and global self-worth. Thus, these previous correlational findings substantiate the clustering of these subscales onto factor 1 in this study. Harter (2012) also identified correlations of up to .40 between the subscales social competency and athletic competency, which substantiates their loadings onto factor 2. The factors were given the names adult-valued (factor 1) and peer-valued (factor 2) subscales of self-concept as these characteristics have been supported by previous research. Adolescents tend to think of their peers as popular when they are athletic (Chase & Dummer, 1992; Harter, 2012), romantically appealing (Zimmer-Gembeck, Siebenbruner, & Collins, 2004), socially integrated, and physically attractive (Harter, 2012). In contrast, academic talent (Chase & Dummer, 1992) and behavioural conduct (Owens, Feng, & Xi, 2014) are perceived as characteristics of unpopular adolescents. This fits the general pattern observed in this study's factor analysis, except for physical attractiveness, which again could be due to this specific sample and due to the established high correlations between global self-worth and physical attractiveness (Harter, 2012).

Grandparental involvement and self-concept. The multiple regressions indicated that high maternal and paternal grandparental involvement were not significantly associated with either adult-valued or peer-valued subscales of self-concept in adolescent grandchildren. Although grandparents are frequently nurturing, caring and accepting figures in grandchildren's lives and these behaviours are often associated with self-concept, it appears that this form of support can also be provided by others. Parents and friends have been identified as the most important figures for self-concept development in adolescents (Manning et al., 2006). In the adolescent years, parent support is still important, however peers and friends become increasingly important with respect to self-concept development (Furman & Buhrmester, 1985; Hay & Ashman, 2010; Manning, 2007). Adolescents tend to spend more time around friends and less time with family, than they did in childhood (Steinberg & Morris, 2001). It has also been argued that the change from childhood to adolescence results in a more complex form of thinking. Self-reflection and increased capacity for perspective taking becomes more evident, which may result in adolescents being less influenced by family members, such as grandparents, and more concerned with their own opinions (Sebastian, Burnett, & Blakemore, 2008). Previous research has shown that grandparental involvement has been associated with some aspects of adolescent grandchildren's well-being such as prosocial behaviour (Wild & Gaibie, 2014), but not to others such as substance use (Profe & Wild, 2015). Thus, self-concept appears to be another aspect of adolescent well-being which grandparental involvement is not associated with.

The control variable of gender was significantly associated with peer-valued subscales of self-concept and indicated that males were associated with higher scores. A meta-analysis found that adolescent males scored higher on overall self-concept than female adolescents, however the effect size was small (Kling, Hyde, Showers, & Buswell, 1999). The effect size of gender in this study was also very small. Thus, although there were gender differences, they were not hugely influential. Specifically, it has also been illustrated that boys tend to score higher on athletic competency than girls (Wichstrom, 2006). This could explain the finding that peer-valued subscales of self-concept was significantly higher for male learners.

Limitations

Although some intriguing results emerged from this study, there are several limitations that were identified through the process that could be addressed in future research.

Design. The first limitation was the design of the study. This was exploratory research and was framed as a pilot study. The sampling method used was convenience, thus a major limitation was that the sample used was not truly representative of the diverse population

South Africa has. Hence, the findings cannot be generalised. The research was cross-sectional, consequently, the significant findings merely represent associations between variables and one could not infer causality, as the sequence of events was unclear (Bonita & Beaglehole, 2006). For example, it may appear as though decreased parental encouragement decreased grandparental involvement, but it may be that because grandparental involvement was already low, parents stopped encouraging contact. Longitudinal studies could be used in future to eliminate these problems.

Measures. There are limitations to the measures used in the study. Firstly the data consisted of self-report measures from grandchildren. Harwood (2001) illustrated that grandparent and grandchildren's perceptions of closeness do not always match. This could easily extend to perceptions of involvement. Future research could use multiple sources of information, for example, child, parent and grandparent, to control for this. Secondly, the measure of parental encouragement was not specifically defined as 'mother encouragement' and 'father encouragement'. This made it difficult to establish if gender was the determinant of the significant findings with grandmothers and not grandfathers. In future, this variable should be split into 'mother encouragement' and 'father encouragement' to avoid this problem. The variables of most involved maternal grandparent and most involved paternal grandparent were used in relation to self-concept. This limited the possible findings, however, and future research could look at each grandparent individually with respect to grandchild self-concept. Lastly, the Harter Self-Perception Profile for Adolescents is not necessarily applicable across all cultures. It was designed in the USA, consequently, some of the questions are not necessarily appropriate in the South African context or are not interpreted in the same way (Harter, 2012). For example, the job competency subscale was dropped from the analysis as communalities and factor loadings were weak. This was probably because it was irrelevant to this population. In South Africa, according to the Basic Conditions of Employment Act (1997), children under the age of 15 may not work. The majority of the sample was aged 13 or 14 and would not have been able to answer job-related questions.

Additional factors. This study controlled for age of grandparent and number of grandchildren as they have been shown to influence grandparental involvement patterns. There are a number of other factors, however, that can affect grandparents' involvement, that were not assessed in this research. These include: distance, health of grandparent, socio-economic status (SES), and family structure. The distance between grandparent and grandchild can be an important factor: the closer the proximity of the grandparent, the higher

the likelihood of grandparental involvement on a day-to-day basis (Barnett et al., 2010; Michalski & Shackelford, 2005; Uhlenberg & Hammill, 1998). This can extend to intergenerational houses with grandparents living with the grandchildren and having frequent contact (Chen, Liu, & Mair, 2011). The health status of grandparents can also influence involvement as grandparents who are sick may not be able to be as involved in their grandchildren's lives (Uhlenberg & Hammill, 1998). SES can influence grandparental involvement, with research indicating two opposing views. Some research has shown that the lower the SES of the family, the greater the likelihood of grandparental involvement (Fergusson et al., 2008). Other research findings indicate that high SES families have the financial privilege (e.g. paying for travel costs) that allows them to involve grandparents in their lives on a frequent basis (Uhlenberg & Hammill, 1998). Family structure could also be important. Over the past few decades, divorce is on the rise both in terms of grandparents themselves and parents (Szinovacz, 1998). When parents get divorced, custody decisions can affect grandparental involvement, often detrimentally for the paternal grandparents. When grandparents are divorced, grandfathers often become less involved with grandchildren as grandmothers are frequently the facilitator between grandfather and grandchild (Barnett et al., 2010). Families involving remarriage and step-grandparents are also becoming more common (Szinovacz, 1998). Evolutionary research has shown that step-grandparents are not as involved as genetically related grandparents (Aldous, 1995). This should be controlled for as the inclusion of step-grandparents may confound results. As a whole, these factors should be included as variables in future research.

Implications and Future Research

This research has shown that the pattern of unequal grandparental involvement that has been found internationally can be replicated in a South African sample. Future research could re-test this result using a representative sample to increase reliability and validity of the findings in the South African context. Additionally, further quantitative and qualitative data could be gathered to understand why these particular patterns exist. Although this study did not illustrate any associations between high maternal involvement or high paternal involvement and self-concept in adolescent grandchildren, there is still room for further research to be conducted. Studies in the South African context have shown that grandparental involvement can positively influence adolescent grandchildren's well-being in terms of prosocial behaviour (Profe & Wild, 2015). There is also international research to indicate that this differential grandparental involvement can impact adolescents' mental and physical well-being (Tanskanen & Danielsbacka, 2012). Although grandparental involvement may not be

critical to South African adolescent's development of self-concept, there may be other measures of well-being that will be affected by this differential involvement. With the HIV epidemic continuing to exist in South Africa, mass poverty, reduced resources, and remnants of apartheid culture such as migrant labour, grandparents' roles are ever expanding as support systems, caregivers and role models (Amoateng et al., 2007). Risk and resilience theory has identified that adolescents with at least one supportive family member, such as a grandparent, can be hugely protective to their well-being (Werner, 1995). Thus, it is critical that we continue to explore the possible benefits grandparental involvement can have on adolescent well-being. In light of these findings, it is also important to explore how unequal grandparental involvement affects adolescent grandchildren.

Conclusion

International research has demonstrated that there is unequal involvement in grandparents, varying by gender and lineage (Coall & Hertwig, 2010). This study aimed to assess whether international findings of differential grandparental involvement were replicated in the South African context. Results indicated that the same pattern existed in the South African context with maternal grandmothers exhibiting the highest involvement, paternal grandfathers the least, with maternal grandfathers and paternal grandmothers illustrating equal, moderate levels of involvement. Age of grandparent, the quality of the mother-grandparent relationship, the quality of the father-grandparent relationship, parental encouragement and gender of grandchild were significant predictors of grandparent involvement. High levels of grandparental involvement from the maternal and paternal sides were not associated with self-concept in adolescent grandchildren. Future research should focus on possible associations between unequal grandparental involvement with a wider range of well-being outcomes in adolescent grandchildren. These results, in conjunction with previous work, contribute to a growing literature base on the important relationships between grandparents and grandchildren. Grandparents can positively influence adolescent grandchildren, thus future research could be hugely beneficial and valuable with real-life implications.

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Appendix A

UNIVERSITY OF CAPE TOWN



Department of Psychology

University of Cape Town, Rondebosch, 7701, South Africa
Telephone: (021) 650-4605
Fax: (021) 650-4104

June 2015

Dear Parent

Grandparents and grandchildren: Research study at your child's school

Researchers from the Department of Psychology at the University of Cape Town have arranged to conduct a study at your child's school. The study looks at grandparents' relationships with their grandchildren.

Many grandparents play an important role in South African families. International research suggests that support from grandparents can help to protect adolescent children from many stresses that occur in their lives, and contribute to their well-being. To date, however, children's relationships with their grandparents have received little research attention in South Africa.

We would like to invite your child to fill in a questionnaire during an ordinary school period. They will be asked questions about their relationships with their grandparents and how they perceive themselves. This is a voluntary exercise and your child will be able to choose whether or not to participate. If they do participate, they will be free to withdraw from the study at any time, or to leave out certain questions. If they choose not to participate, this will have no effect on how your child will be treated at school.

All information provided by your child will be anonymous and confidential. They will not be asked to put their name on the questionnaire, and the information from all learners who participate will be combined in the presentation of the results. As a result, no child who participates in the research will be personally identifiable.

If you do *not* want your child to participate in this study, please fill in the reply slip below and return it to school by [date will be inserted]. If you do not respond we will take that as permission for your child to participate.

Thank you for your cooperation.

Yours sincerely

Frances Dreyer
Psychology Honours Student

If you have any questions about this study, please contact:

Frances Dreyer
Psychology Honours Student
Tel.: 071 383 0286
Email: francesdreyer@hotmail.com

Dr. Lauren Wild
Supervisor
Tel: (021) 650 4607
Email: lauren.wild@uct.ac.za

If you have any complaints about this study, please contact:

Rosalind Adams
Postgraduate Administrator
Tel.: (021) 650 3417
Email: Rosalind.Adams@uct.ac.za

I **do not** wish for my son / daughter to participate in the research study being conducted by the UCT Psychology Department at my child's school.

Child's Name:

Class: _____

Parent's / Guardian's Name: _____

Signature: _____ Date: _____

Appendix B

Survey Number:

Section A

A. Can you tell us about yourself?

1. What is your age? _____
2. What Grade are you in? _____
3. What is your gender? Male Female

B. Can you tell us about your grandparents?

	Mother's mother	Mother's father	Father's mother	Father's father
1. What grandparents do you have living? (Tick all that apply)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Which grandparent are you closest with? (Tick one)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please answer the following questions. Only answer for grandparents that are still alive.

- | | | | | | |
|---|----------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 3. How often do you see them? | Just about every day | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | About once a week | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | About once a month | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Several times a year | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Once a year or less | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Never | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <hr/> | | | | | |
| 4. How often do you contact them via telephone, internet (e.g. e-mail or Facebook) or letter? | Just about every day | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | About once a week | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | About once a month | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Several times a year | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Once a year or less | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| | Never | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
-

5. How often do they look after you?		Mother's mother	Mother's father	Father's mother	Father's father
	Just about every day	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	About once a week	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	About once a month	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Several times a year	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Once a year or less	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Never	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. How old are your grandparents?		Mother's mother	Mother's father	Father's mother	Father's father
	Younger than 50	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	In their 50s	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	In their 60s	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	In their 70s	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Over 80	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Don't know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. How many grandchildren do they have?		Mother's mother	Mother's father	Father's mother	Father's father
	Just you	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	2 or 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	4 or 5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	6 or more	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. How well does your mother get on with your grandparents?		Mother's mother	Mother's father	Father's mother	Father's father
	Very well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Don't have this parent	<input type="checkbox"/> Not so well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> Not well at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> Don't know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. How well does your father get on with your grandparents?		Mother's mother	Mother's father	Father's mother	Father's father
Don't have this parent	<input type="checkbox"/>	Very well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Not so well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Not well at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		Don't know	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. Do your parents encourage you to spend time with your grandparents?

Yes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

C. Can you tell us about your relationship with your grandparents?
(Remember we only need to know about the grandparents who are still alive)

		Mother's mother	Mother's father	Father's mother	Father's father
1. How much can you depend on your grandparent to be there when you really need him/her?					
Not much	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Some	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A lot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. How much does your grandparent make you feel appreciated, loved, or cared for?					
Not much	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Some	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A lot	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. How often do you talk to them about personal matters or things that are important to you?					
Never	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occasionally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. How often does your grandparent help you by giving you advice or helping solve problems you have?					
Never	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occasionally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Mother's mother	Mother's father	Father's mother	Father's father
5. Do you talk to them about your future plans?				
Never	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occasionally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Do they help you to learn or understand things? (for example, school work, your family history)				
Never	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occasionally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Do they get involved with things you like? (for example, sport, making things, doing enjoyable things together)				
Never	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occasionally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Do they come to school events or other activities that are important to you? (for example, sporting matches, plays, religious activities)				
Never	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occasionally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. How often do you help your grandparent with something they are doing or making? (for example, household jobs)				
Never	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occasionally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Does your grandparent get involved in telling you what you can and cannot do?				
Never	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occasionally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Do they give you or your family money or gifts?				
Never	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Occasionally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section B
What I Am Like

	Really True for me	Sort of True for me	Sample Sentence		Sort of True for me	Really True for me	
a.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers like to go to movies in their spare time	BUT	Other teenagers would rather go to sports events	<input type="checkbox"/>	<input type="checkbox"/>
1.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers feel that they are just as smart as others their age	BUT	Other teenagers aren't so sure and wonder if they are as smart	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers find it hard to make friends	BUT	Other teenagers find it pretty easy to make friends	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers do very well at all kinds of sports	BUT	Other teenagers <i>don't</i> feel that they are very good when it comes to sports	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers are <i>not</i> happy with the way they look	BUT	Other teenagers <i>are</i> happy with the way they look	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers feel that they are ready to do well at a part-time job	BUT	Other teenagers feel that they are not quite ready to handle a part-time job	<input type="checkbox"/>	<input type="checkbox"/>
6.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers feel that if they are romantically interested in someone, that person will like them back	BUT	Other teenagers worry that when they like someone romantically, that person <i>won't</i> like them back	<input type="checkbox"/>	<input type="checkbox"/>
7.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers usually do the right thing	BUT	Other teenagers often don't do what they know is right	<input type="checkbox"/>	<input type="checkbox"/>
8.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers are able to make really close friends	BUT	Other teenagers find it hard to make really close friends	<input type="checkbox"/>	<input type="checkbox"/>
9.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers are often disappointed with themselves	BUT	Other teenagers are pretty pleased with themselves	<input type="checkbox"/>	<input type="checkbox"/>

	Really True for me	Sort of True for me			Sort of True for me	Really True for me	
10.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers are pretty slow in finishing their school work	BUT	Other teenagers can do their school work quickly	<input type="checkbox"/>	<input type="checkbox"/>
11.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers know how to make classmates like them	BUT	Other teenagers don't know how to make classmates like them	<input type="checkbox"/>	<input type="checkbox"/>
12.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers think they could do well at just about any new athletic activity	BUT	Other teenagers are afraid they might not do well at a new athletic activity	<input type="checkbox"/>	<input type="checkbox"/>
13.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers wish their body was different	BUT	Other teenagers like their body the way it is	<input type="checkbox"/>	<input type="checkbox"/>
14.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers feel that they <i>don't</i> have enough skills to do well at a job	BUT	Other teenagers feel that they <i>do</i> have enough skills to do a job well	<input type="checkbox"/>	<input type="checkbox"/>
15.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers are <i>not</i> dating the people they are really attracted to	BUT	Other teenagers <i>are</i> dating those people they are attracted to	<input type="checkbox"/>	<input type="checkbox"/>
16.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers often get in trouble because of things they do	BUT	Other teenagers usually <i>don't</i> do things that get them in trouble	<input type="checkbox"/>	<input type="checkbox"/>
17.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers <i>don't</i> know how to find a close friend with whom they can share secrets	BUT	Other teenagers <i>do</i> know how to find a close friend with whom they can share secrets	<input type="checkbox"/>	<input type="checkbox"/>
18.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers don't like the way they are leading their life	BUT	Other teenagers do like the way they are leading their life	<input type="checkbox"/>	<input type="checkbox"/>
19.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers do very well at their classwork	BUT	Other teenagers <i>don't</i> do very well at their classwork	<input type="checkbox"/>	<input type="checkbox"/>
20.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers don't have the social skills to make friends	BUT	Other teenagers do have the social skills to make friends	<input type="checkbox"/>	<input type="checkbox"/>
21.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers feel that they are better than others their age at sports	BUT	Other teenagers don't feel they can play as well	<input type="checkbox"/>	<input type="checkbox"/>
22.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers wish their physical appearance was different	BUT	Other teenagers like their physical appearance the way it is	<input type="checkbox"/>	<input type="checkbox"/>

	Really True for me	Sort of True for me				Sort of True for me	Really True for me
23.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers feel they are old enough to get and keep a paying job	BUT	Other teenagers do not feel that they are old enough, yet, to really handle a job well	<input type="checkbox"/>	<input type="checkbox"/>
24.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers feel that people their age will be romantically attracted to them	BUT	Other teenagers worry about whether people their age will be attracted to them	<input type="checkbox"/>	<input type="checkbox"/>
25.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers feel really good about the way they act	BUT	Other teenagers <i>don't</i> feel that good about the way they often act	<input type="checkbox"/>	<input type="checkbox"/>
26.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers <i>do</i> know what it takes to develop a close friendship with a peer	BUT	Other teenagers <i>don't</i> know what to do to form a close friendship with a peer	<input type="checkbox"/>	<input type="checkbox"/>
27.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers are happy with themselves most of the time	BUT	Other teenagers are often not happy with themselves	<input type="checkbox"/>	<input type="checkbox"/>
28.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers have trouble figuring out the answers in school	BUT	Other teenagers almost always can figure out the answers	<input type="checkbox"/>	<input type="checkbox"/>
29.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers understand how to get peers to accept them	BUT	Other teenagers <i>don't</i> understand how to get peers to accept them	<input type="checkbox"/>	<input type="checkbox"/>
30.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers <i>don't</i> do well at new outdoor games	BUT	Other teenagers are good at new games right away	<input type="checkbox"/>	<input type="checkbox"/>
31.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers think that they are good looking	BUT	Other teenagers think that they are not very good looking	<input type="checkbox"/>	<input type="checkbox"/>
32.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers feel like they could do better at work they do for pay	BUT	Other teenagers feel that they are doing really well at work they do for pay	<input type="checkbox"/>	<input type="checkbox"/>
33.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers feel that they are fun and interesting on a date	BUT	Other teenagers wonder about how fun and interesting they are on a date	<input type="checkbox"/>	<input type="checkbox"/>
34.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers do things they know they shouldn't do	BUT	Other teenagers hardly ever do things they know they shouldn't do	<input type="checkbox"/>	<input type="checkbox"/>

	Really True for me	Sort of True for me				Sort of True for me	Really True for me
35.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers find it hard to make friends they can really trust	BUT	Other teenagers <i>are</i> able to make close friends they can really trust	<input type="checkbox"/>	<input type="checkbox"/>
36.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers like the kind of person they are	BUT	Other teenagers often wish they were someone else	<input type="checkbox"/>	<input type="checkbox"/>
37.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers feel that they are pretty intelligent	BUT	Other teenagers question whether they are intelligent	<input type="checkbox"/>	<input type="checkbox"/>
38.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers know how to become popular	BUT	Other teenagers do not know how to become popular	<input type="checkbox"/>	<input type="checkbox"/>
39.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers do not feel that they are very athletic	BUT	Other teenagers feel that they <i>are</i> very athletic	<input type="checkbox"/>	<input type="checkbox"/>
40.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers really like their looks	BUT	Other teenagers wish they looked different	<input type="checkbox"/>	<input type="checkbox"/>
41.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers feel that they are really able to handle the work on a paying job	BUT	Other teenagers wonder if they are really doing as good a job at work as they should be doing	<input type="checkbox"/>	<input type="checkbox"/>
42.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers usually <i>don't</i> go out with people they would really like to date	BUT	Other teenagers <i>do</i> go out with people they really want to date	<input type="checkbox"/>	<input type="checkbox"/>
43.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers usually act the way they know they are supposed to	BUT	Other teenagers often don't act the way they are supposed to	<input type="checkbox"/>	<input type="checkbox"/>
44.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers <i>don't</i> understand what they should do to have a friend close enough to share personal thoughts with	BUT	Other teenagers <i>do</i> understand what to do to have a close friend with whom they can share personal thoughts.	<input type="checkbox"/>	<input type="checkbox"/>
45.	<input type="checkbox"/>	<input type="checkbox"/>	Some teenagers are very happy being the way they are	BUT	Other teenagers often wish they were different	<input type="checkbox"/>	<input type="checkbox"/>

Appendix C

Survey administration Script

Researcher:

Good morning.

Today I am going to be administering a survey to explore your relationships with your grandparents and your self-perceptions. I am going to use this information for my research on grandparents and their relationships with their grandchildren at the University of Cape Town.

All information I receive will be kept confidential and you have the right to withdraw from this survey at any time. You do not have to answer any questions that you are not comfortable with.

The survey consists of two sections: section A will ask you and your relationships with your different grandparents: your mother's mother; your mother's father, your father's mother and your father's father. I only require you to answer the sections that relate to grandparents that are currently living.

Section B will ask you questions about how you feel about yourself. Let's going through the first sample question of that first to make sure you know how to complete the survey. For each question you will be required to check one box only. First, you must decide if you agree with the boxes on the left or the right of the statement. Then you must decide out of the two boxes, which one applies to you the best. It is important that you only tick one box for each question.

The survey needs to be completed in the lesson.

Does everyone understand or have any questions before we start?

Appendix D

UNIVERSITY OF CAPE TOWN



Department of Psychology

University of Cape Town, Rondebosch 7701, South Africa
Telephone: (021) 650 3414
Fax No.: (021) 650 4104

11 May 2015

Ms F. Dreyer
Department of Psychology
University of Cape Town
Rondebosch 7701

Dear Ms Dreyer,

I am pleased to inform you that ethical clearance has been given by an Ethics Review Committee of the Faculty of Humanities for your project: *Differential Grandparental Involvement and its Implications for Grandchildren*.

Please use the reference PSY2013-016 if required. I wish you all the best for your study.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Johann Louw'.

Johann Louw PhD
Professor
Chair: Ethics Review Committee

Appendix E



Directorate: Research

Audrey.wyngaard@westerncape.gov.za
 tel: +27 021 467 9272
 Fax: 0865902282
 Private Bag x9114, Cape Town, 8000
 wced.wcape.gov.za

REFERENCE: 20150604-88

ENQUIRIES: Dr A.T Wyngaard

Ms Francis Dreyer
 20 Kew Street
 Mowbray
 7700

Dear Ms Francis Dreyer

RESEARCH PROPOSAL: DIFFERENTIAL GRANDPARENT INVOLVEMENT AND ITS IMPLICATIONS FOR GRANDCHILDREN

Your application to conduct the above-mentioned research in schools in the Western Cape has been approved subject to the following conditions:

1. Principals, educators and learners are under no obligation to assist you in your investigation.
2. Principals, educators, learners and schools should not be identifiable in any way from the results of the investigation.
3. You make all the arrangements concerning your investigation.
4. Educators' programmes are not to be interrupted.
5. The Study is to be conducted from **04 June 2015 till 26 September 2015**
6. No research can be conducted during the fourth term as schools are preparing and finalizing syllabi for examinations (October to December).
7. Should you wish to extend the period of your survey, please contact Dr A.T Wyngaard at the contact numbers above quoting the reference number?
8. A photocopy of this letter is submitted to the principal where the intended research is to be conducted.
9. Your research will be limited to the list of schools as forwarded to the Western Cape Education Department.
10. A brief summary of the content, findings and recommendations is provided to the Director: Research Services.
11. The Department receives a copy of the completed report/dissertation/thesis addressed to:
The Director: Research Services
Western Cape Education Department
Private Bag X9114
CAPE TOWN
8000

We wish you success in your research.

Kind regards.

Signed: Dr Audrey T Wyngaard

Directorate: Research

DATE: 04 June 2015

Appendix F

Information Sheet and Assent Form for Adolescents

Please take time to read this sheet carefully and decide whether you do or don't want to take part. Ask the researcher if there is anything that is not clear, or if you have questions. Thank you for reading this.

What is the study about?

We would like to know more about young people and their relationships with their grandparents.

What would I have to do?

If you decide to take part, you will first sign an assent form (on the next page), and then spend about 45 minutes answering a questionnaire. The questions will ask about your grandparents and how you feel about yourself.

What are the risks?

The study has no known risks. If you do not want to answer any of the questions, you do not have to.

What are the benefits?

You will not benefit directly from participating in this study. However, you will help the researcher to increase knowledge about grandparents' relationships with their grandchildren.

Do I have to take part?

Not at all. It is up to you to decide whether or not to take part. You will not get in any trouble if you do not want to take part. If you decide to take part, you are still free to stop at any time. You don't have to give a reason.

Will what I say be kept confidential (secret)?

Anything you tell us about yourself will be kept strictly confidential. This means it will be private between you and the research team, and will not be told to anyone else. You will not be asked to put your name on the questionnaire.

Who is conducting the research? The research is being conducted by the Department of Psychology at the University of Cape Town.

Contact for further information

If you have any questions about this study, please contact:

Frances Dreyer
 Psychology Honours Student
 Tel.: 071 383 0286
 Email: francesdreyer@hotmail.com

Dr. Lauren Wild
 Supervisor
 Tel: (021) 650 4607
 Email: Lauren.Wild@uct.ac.za

If you have any complaints about this study, please contact:

Rosalind Adams
 Postgraduate Administrator
 Tel.: (021) 650 3417
 Email: Rosalind.Adams@uct.ac.za

Thank you for reading this sheet. If you have any questions, please raise your hand now. If you feel comfortable with everything, you can fill in the box below:

	Tick
1. I have read and understand the information sheet for this study and have had the chance to ask questions.	<input type="checkbox"/>
2. I understand that I have chosen to take part and that I am free to stop at any time, without giving any reason.	<input type="checkbox"/>
3. I agree to take part in the study	<input type="checkbox"/>
Your name	
Signature	Date.....

Appendix G

