

Exploring Gender Differences in the Connectedness of South African Adolescents

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ABSTRACT The literature on adolescent development refers to the adolescent's need to be *connected* to others in a meaningful way. However, research on adolescent connectedness in the South African context is limited, particularly with regard to gender influences. This exploratory, descriptive research project therefore aimed at investigating gender differences in the connectedness of Grade 8 and Grade 11 adolescents of the respective racial groups. Data was collected using the Hemmingway: Measure of Adolescent Connectedness questionnaire. Four hypotheses related to differences between the genders of the sample and the genders of the racial and age groups were tested. The results revealed that the girls in the sample were significantly more connected with regard to most of the variables tested than the boys. The Mixed descent boys and girls differed substantially with regard to connectedness to teachers; the Caucasian boys and girls differed in five domains, while the African boys and girls differed in eight domains. The younger adolescents were also more connected overall than the older ones, particularly the African girls and Caucasian boys. Follow-up research is needed to explain these differences.

INTRODUCTION

The literature on adolescent development refers to the adolescent's need to belong and to be *connected* to others in a meaningful way (Allen and Bowles 2012). Connectedness, belonging and attachment, among others, are concepts that are used interchangeably since they all refer to individuals as an integral part of a system in which they are valued and cared for. Hagerty et al. (1993: 293) define connectedness as occurring "when a person is actively involved with another person, object, group, or environment and that involvement promotes a sense of comfort, well-being, and anxiety reduction". Accordingly, Lee and Robbins (2000: 484) define social connectedness as "an enduring and ubiquitous experience of the self in relation with the world, as compared with social support, adult attachment, and peer affiliations, which represent more discrete, current relationships".

Feelings of connectedness are very important. Such feelings lead to psychological well-

being (Stuart and Jose 2014), which includes a positive self-esteem, self-efficacy, life satisfaction and aspirations (Haslam et al. 2009; Jose et al. 2012), happiness (Sharma and Malhotra 2010), and physical wellbeing (Easton 2009). Moreover, school and teacher connectedness is associated with important academic and developmental outcomes (Chhuon and Wallace 2014), and transition to middle school (Day et al. 2014). Future connectedness facilitates positive adolescent development (Calina et al. 2014). In contrast, a lack of connectedness is related to loneliness and adjustment difficulties (Duru 2008); self-alienation, a lack of meaning and purpose in life, delinquent behaviour (Rees et al. 2014) and poor health (Townsend and McWhirter 2005). It has also been linked to adolescent suicide (Whitlock et al. 2014).

An electronic search with ProQuest Psychology and ProQuest Education identified only two South African studies that focussed directly on adolescent connectedness (Easton 2009; Rawatlal and Petersen 2012). Another South African paper investigated the views of the future of Grade 11 adolescents (Steyn et al. 2010). This paper found evidence of general adolescent connectedness, although the authors did not use this concept. For example, the adolescents reflected positive self-images, a strong identification with religion and a future optimism. In contrast, the Rawatlal and Petersen (2012) paper with

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a group of Grade 10 adolescents identified factors that impeded connectedness, which included a lack of future orientation linked to limited post-school opportunities, a lack of warmth at home and undesirable peer influences. Neither of the two last mentioned studies distinguished between the genders, and the Easton (2009) paper was limited to the connectedness of adolescent boys to their families.

In light of the above, the aim of this research was to investigate possible differences in adolescent connectedness of boys and girls with regard to several domains. The research in particular sought to determine if there were significant differences between the two genders of the sample; the genders of the different racial groups; and the younger and older boys and girls. To this end the Bronfenbrenner's theory was used as conceptual framework.

Theoretical Framework

One of the most influential theories on child development is Bronfenbrenner's bio-ecological model (1999). Bronfenbrenner indicated that human development takes place through processes of progressively more complex reciprocal interaction between individuals and the people and objects in their environments. He labelled such interactions proximal processes. Examples of proximal processes include the relationships between adolescents and their parents or friends. To be significant, the contact should occur continuously over extended time periods.

The ecological environment of the model is a set of nested systems on a microsystemic, mesosystemic and exosystemic level (Bronfenbrenner 1979). A basic premise of the ecological systems theory is that "development is a function of forces emanating from multiple settings and from the relations between these settings" (Bronfenbrenner 1999: 17). In an adolescent's life, the microsystem (inner circle) is where the adolescent has direct face-to-face interaction with significant others such as parents and siblings at home, teachers and friends at school and people at church. When the various microsystems in an adolescent's life adopt the same beliefs and expectations, adolescent development is enhanced (Leonard 2011). The mesosystem is where two or more microsystems interact, for example, the interaction of the adolescents' parents with their teachers. The outer circle or exosystem encompasses people who are indirectly involved in the adolescent's develop-

ment such as the Department of Education and the school governing body. In addition to the aforementioned, Bronfenbrenner (1979) described a macrosystem which includes the prevailing cultural and economic conditions of the relevant community, and a chronosystem which explains how settings and their significance change over time.

Adolescence refers to the period between 10 and 19 years when adolescents are in search of an identity and autonomy (Heaven 2001; Blend 2007; Gouws et al. 2008). The quest for autonomy, also called disembedding, is in contrast to being "immersed in a context-family, society, culture, with permeable boundaries and relatively confluent, introjecting boundary processes" (McConville 2001: 39). This view can be compared to the self-determination theory that identifies autonomy and connectedness (together with competence) as basic human needs. According to the theory, the satisfaction of all these needs is required for healthy psychological functioning (Ryan and Deci 2000; Chirkov et al. 2003). Bekker and Croon (2010: 909) therefore define autonomy-connectedness as "the need and capacity for self-reliance and independence *and* for intimacy and satisfactory functioning in intimate relationships". Ryan and Deci (2000) maintain that by failing to provide support for autonomy and relatedness of adolescents, socialising agents contribute to their psychological problems.

Parents' differential socialisation of the two genders may facilitate greater psychological autonomy in boys than in girls (Noom et al. 2001; Yu 2011). For example, parents tend to grant their adolescent sons more freedom outside the home, thus enhancing their independence and community connectedness. In contrast, they encourage interdependence in the girls. However, results are inconclusive. Bumpus et al. (2001), as well as Pinquart and Silbereisen (2002) reported greater autonomy in adolescent females than in males. Other authors pointed out that the link between autonomy or connectedness and gender was not simple. For example, Yu (2011) found that autonomy and connectedness in adolescence could be influenced more by extra-familial factors in the adolescent's microsystem, such as peer group values, than by gender.

Gender and Connectedness

For the purposes of this research, no distinction is made between 'gender' and 'sex'. When 'gender' is used, it refers to the 'sex' of

participants (male or female). However, 'gender' is used consistently in accordance with other publications on adolescent connectedness (for example, Akos and Galassi 2004; Brutsaert and Van Houtte 2004).

Researchers found that gender-related aspects of connectedness were strongly influenced by race and culture (Akos and Galassi 2004; Townsend and McWhirter 2005). In Western culture, females tended to perceive themselves as strongly attached to family, friends, colleagues and the wider social community; although this could be influenced by age. For example, an Israeli paper with participants from Western origin found that the females were more connected to others than the males as measured by empathy and the desire for intimacy (Lang-Takac and Osterweil 1992). The males were more separated, as measured by self-other differentiations and independence. This could be related to the various socialisation patterns of parents who encouraged interdependence in girls (Noom et al. 2001).

Regarding connectedness to the family, Dwairy (2003), and Dwairy and Achoui (2010) found that female adolescents were more connected to their families than male adolescents. In an Egyptian paper, twice as many female than male adolescents indicated their agreement with "absolute submission" to parents (in Dwairy et al. 2006: 250). Such obedience would have been encouraged if the beliefs and expectations in the multiple settings of the girls' lives were similar.

In the microsystem of the adolescents' lives, parents were important role players. When parents demonstrated behavioural characteristics of listening attentively to the adolescents; expressing love; showing trust and approval; being sensitive to their moods, being empathetic, valuing their opinions, and being interested in their schoolwork and friends, it enhanced adolescent-parent connectedness (Rice and Dolgin 2008; Easton 2009). The character of adolescent connectedness to mothers and fathers often differed (Gerali 2006). Easton (2009) found that the South African boys in her sample generally described their mothers in terms of domestic activities that made them feel loved, while they often referred to their fathers in terms of physical exercise.

In spite of parental connectedness, most adolescents reported a decline in emotional closeness to their parents (Smetana 2011). This

is explained by the self-determination theory that views both autonomy and connectedness as basic human needs. Greater independence from parents was accompanied by closer relationships with same-sex friends in early adolescence and with romantic partners at a later stage. Such social connectedness of contemporary adolescents was characterised by their cellphone use and increased participation in social events away from home (Rice and Dolgin 2008). This socialisation was equally important to both genders (Lee and Robbins 2000; Lee et al. 2002).

School connectedness also played an important role in the microsystem of the adolescents' lives. School connectedness could be facilitated by academic engagement, fair discipline, extra-curricular activities, school enjoyment, satisfactory peer relations, safety and teacher support (Libbey 2004). Adolescents that experienced school connectedness reported a sense of well-being and happiness (Allen and Bowles 2012) which seemed to protect them against substance abuse, school absenteeism, early sexual initiation, and violence (Davis-Alldrift 2012).

Regarding gender differences in school connectedness, girls generally reported greater levels of school connectedness than boys (Ma 2003). This was confirmed in a paper by Nichols (2008), with mostly Hispanic adolescents in an American school. Other authors (Maddox and Prinz 2003; Loukas et al. 2009) also noted that the influence of school connectedness on students' adjustment varied with regard to gender: school connectedness was significantly (positively or negatively) related to depression in respect of both genders, anxiety in girls, and the general behaviour of boys. This is in line with the finding that school connectedness enhances wellbeing and happiness (Allen and Bowles' 2012), and academic achievement (Chhuon and Wallace 2014).

School connectedness also seemed to be moderated by age. Early adolescent girls showed a significant need for social acceptance and connectedness. Hence, a Belgian paper found that in an academically oriented school the girls who experienced themselves as well connected within the school community showed positive psychological wellbeing (Brutsaert and Van Houtte 2004). Although the standard of the curriculum was a source of stress for the girls, the effect was partially moderated by their feelings of connectedness to the school community. This was

not the case with the boys who attributed failing at school to external causes rather than to themselves.

Relations with a higher being (for example, God) constituted part of the proximal processes in the lives of adolescents. During early adolescence females report greater intrinsic religiosity than males (Sinha et al. 2007; Klanjšek et al. 2012). Intrinsic religiosity provided purpose in life that offset feelings of worthlessness and powerlessness and seemed to protect adolescents against risk behaviour.

Bronfenbrenner's (1999) proximal processes also include relations to reading. In this regard, a South African paper found that the sampled adolescents' interest in reading was low and influenced by gender (Machet 2002). The girls in the sample were more willing than the boys to read in English if English was not their home language. The girls were motivated to read romantic fiction which portrayed characters that were similar to themselves. The boys were motivated to read stories that were linked to television programmes or films, portrayals of adventure and factual information.

With the above as background, the next section describes the research design to explore the connectedness of a group of adolescents.

METHODOLOGY

Sample

The sample comprised 835 students (361 boys and 455 girls) from four diverse high schools in one city in South Africa selected through a combination of purposeful and convenience sampling (McMillan and Schumacher 2010). Two schools used Afrikaans as medium of instruction: a large school with students that were mainly Caucasian with a few Mixed descent students, and a small, private Christian school. The other two (large) multi-racial schools used English as medium of instruction. One of the schools specialised in teaching the arts. Given the fact that there are thousands of high school students in urban areas in South Africa, the sample size was relatively small. This implies that if statistically significant differences could be determined between the genders, the differences in the population would probably be substantial (McMillan and Schumacher 2010: 141).

For statistical purposes the data were subdivided into groups. In many international studies on adolescent connectedness race had been considered as variable, differentiating between Asian, Hispanic, African American and Caucasian students (Akos and Galassi 2004; Kaminsky et al. 2010; Kiang and Johnson 2013). Accordingly, the schools in this research were purposefully sampled to include a variety of races, although each race comprised more than one culture. To use race as variable was also regarded as important considering the country's apartheid history. For example, the impact of post 1994 redresses of past injustices is unknown, but could influence future connectedness of Caucasian adolescents.

Since age had been identified as an influencing variable (Kaminsky et al. 2010), it was decided to include two age groups. Grade 8 and Grade 11 students were the youngest and the oldest students available for research purposes in the four schools. (Grade 12 students were preparing for their final examinations.) Table 1 shows the detailed characteristics of the sample. (Data of the four Indian students were excluded due to the limited number of students.)

Table 1: Characteristics of the sample

<i>Characteristics</i>	<i>N</i>	<i>%</i>
<i>Gender</i>		
Male	361	44
Female	455	56
<i>Race and Gender:</i>		
Caucasian male	95	11.7
Caucasian female	142	17.5
African male	230	28.3
African female	268	32.7
Mixed descent male	24	3
Mixed descent female	54	6.6
<i>Race, Grade and Gender:</i>		
Caucasian Grade 8 male	64	8.1
Caucasian Grade 8 female	92	11.7
Caucasian Grade 11 male	31	3.9
Caucasian Grade 11 female	50	6.4
African Grade 8 male	121	15.4
African Grade 8 female	167	21.3
African Grade 11 male	108	13.7
African Grade 11 female	100	12.7
Mixed descent Grade 8 male	16	2
Mixed descent Grade 8 female	15	1.9
Mixed descent Grade 11 male	7	.9
Mixed descent Grade 11 female	15	1.9

Missing values occurred

Ethical Considerations

Data collection procedures included obtaining permission from the Department of Educa-

tion; ethical clearance from the ethics committee at the University of South Africa; as well as consent from parents and assent from the students. Participants were given assurances of anonymity and confidentiality.

Instrument

All the students completed the Hemmingway: Measure of Adolescent Connectedness (MAC) questionnaire (Karcher 2000). The MAC questionnaire is made up of 72 items with 15 subscales that focus on the microsystem of the adolescents' lives. The MAC was, therefore, selected for this research, because a limited number of previous investigations had focussed on different domains of connectedness as pointed out by Kaminsky et al. (2010).

Most of the 15 variables are self-explanatory (for example, mother, father, siblings and teacher). *School connectedness* is the extent to which students believed that they were part of the school community and were supported by others at the school (Wilson 2004). *Connectedness to religion* was defined as "connectedness to God or other higher being" (Houltberg et al. 2011: 111). *Neighbourhoods* were viewed as the area where the adolescents resided and connectedness was tested by the item, 'I like hanging out around where I live'. The variable, *self-in-the-present*, included the item, 'I really like who I am'; and *connectedness to the future* included 'I do lots of things to prepare for my future'. An item that determined *connectedness to peers of other cultures* was: 'I like getting to know kids from other cultural or race groups'. Responses to the items were by means of a five-point, Likert-type scale that ranged from (1) 'not true at all' to (5) 'very true', and there was one reverse score item on each subscale.

The questionnaire was translated into Afrikaans for the two schools that used Afrikaans as medium of instruction. This version was pilot tested with a group of Afrikaans-speaking students of an appropriate age before finalisation.

Data Analysis

The sample had a normal distribution and thus allowed for parametric tests. Data analysis was done through the comparison of means (M), standard deviations (SD), ANOVAs and Scheffe's post-hoc tests. Four hypotheses were tested: (i) there are significant differences be-

tween the two genders of the sample on the 15 subscales; (ii) there are significant differences in the average overall connectedness between the genders of the three racial groups separately; (iii) there are significant differences on the 15 subscales between the two genders of the three racial groups separately; and (iv) there are significant differences in the average overall connectedness between Grade 8 and Grade 11 boys, and Grade 8 and the Grade 11 girls of the three racial groups separately.

The Cronbach's alphas on 11 subscales were between .704 and .888 with the exception of four instances (self-in-the-present, peers, teachers and future) where the alphas were between .6 and .7. This is acceptable in light of the exploratory nature of this research (McMillan and Schumacher 2010). For the same reason, and because an existing questionnaire was used with the permission of its author, construct validity was not considered. However, face validity was judged favourably by the researchers.

The results are presented in the next section. Significant differences were identified on the 5% scale. However, if the analyses determined significant differences on the 1% scale, it is indicated in the results.

RESULTS

Hypothesis 1

To test the first hypothesis, gender differences in the strength of the connectedness on all 15 sub-scales for the whole sample were investigated. Table 2 illustrates that for both genders, the connectedness to the future ($M=4.3111$ and 4.2706); religion ($M=4.1947$ and 3.9855); and self-in-the-present ($M=4.0845$ and 4.0509) was high. The lowest connectedness was to reading ($M=3.3454$ and 2.822); romantic partners ($M=2.7072$ and 2.8437); and local neighbourhoods ($M=2.6618$ and 2.9851). However, the students differed considerably among peers of their own gender with regard to connectedness to their fathers, reading and romantic partners ($SD = 1.05362$ up to 1.26393). Similarly, the variance among the male students regarding peers of other racial groups was relatively large ($SD = 1.09533$).

A one-way ANOVA determined that the 455 female students were overall more connected than the 361 male students as indicated by the F value of less than 0.01 ($F= 12.967 = p < 0.01$; $M =$

Table 2: Significant differences between scores of boys and girls on all subscales of connectedness

	<i>Malen=361</i>		<i>Femalen=455</i>		<i>df</i>	<i>F</i>	<i>Sig.</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Neighbourhood	2.9851	0.9634	2.6618	0.9987	814	17.136	.000**
Romantic partner	2.8437	1.1524	2.7072	1.2639	805	.241	.624
Reading	2.8220	1.0739	3.3454	1.1448	814	37.794	.000**
Peers	3.3169	0.6437	3.3815	0.6283	814	3.417	.065
Friends	3.3443	0.6916	3.5590	0.7085	814	18.890	.000**
Father	3.6950	1.0536	3.5943	1.0835	790	.837	.360
Siblings	3.7703	0.8906	3.8552	0.8627	814	.982	.322
Teachers	3.5801	0.7665	3.8897	0.7260	814	3.755	.053
School	3.6488	0.6127	3.8912	0.6453	814	6.326	.012*
Parents	4.0825	0.6795	4.0395	0.7443	814	.015	.904
Mother	4.0815	0.7516	4.0506	0.9001	805	.643	.423
Peers of other cultures	3.6573	1.0953	4.0564	0.9315	806	31.285	.000**
Self in the present	4.0509	0.6460	4.0845	0.6167	814	.917	.338
Religion	3.9855	0.9570	4.1947	0.9520	806	9.573	.002**
Future	4.2706	0.5165	4.3111	0.5321	814	1.194	.275

** $p < .01$; * $p < .05$

3.7077 and 3.6081). The boys were significantly more connected to their neighbourhoods than the girls ($F=21.765 = p < 0.001$; $M=2.9851$ and 2.6618); and the girls were significantly more connected than the boys to reading ($F=44.435 = p < 0.001$; $M=3.3454$ and 2.8220); religion ($F=9.573 = p < 0.01$; $M=4.1947$ and 3.9855); school ($F=29.701 = p < 0.001$; $M=3.8912$ and 3.6488); teachers ($F=34.821 = p < 0.001$; $M=3.8897$ and 3.5801); friends ($F=18.890 = p < 0.001$; $M=3.5590$ and 3.3443) and peers of other races ($F=31.285 = p < 0.001$; $M=4.0564$ and 3.6573).

Hypothesis 2

In order to test the second hypothesis, the boys and girls of the different racial groups were compared separately for overall connectedness. Table 3 indicates that the rank order from most to least connected was: Caucasian females ($M=3.7730$); Mixed descent females ($M=3.7622$); Mixed descent males ($M=3.7257$); African females ($M=3.6699$); Caucasian males ($M=3.6619$); and African males ($M=3.5840$). However, in all

instances the averages were between 3 and 4 (indicating responses that were generally between "sort of true" and "true"), which suggests that all six groups were quite 'connected'.

Table 3 also illustrates that in all three racial groups, the females were more connected than the males. Follow-up ANOVAs revealed that the difference was not significant for the Mixed descent boys and girls. However, the Caucasian and African girls were (on the 5%-level), significantly more connected overall than the Caucasian and African boys (Caucasian: $F=4.176 = p < 0.05$; $M=3.7730$ versus 3.6619 ; African: $F=6.2 = p < 0.05$; $M=3.6699$ versus 3.5840).

Hypothesis 3

The ANOVAs revealed the following gender differences on the 15 subscales for each racial group. The Mixed descent girls were significantly more connected to their teachers than the Mixed descent boys ($F=18.502 = p < 0.001$; $M=4.19$ versus 3.4). This was the only important difference between the genders of this racial group.

Table 3: Significant differences between overall connectedness of males and females in three cultural groups

	<i>Male</i>			<i>Female</i>			<i>df</i>	<i>F</i>	<i>Sig.</i>
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>			
Caucasian	3.6619	0.4315	95	3.7730	0.3949	142	235	4.176	.042*
African	3.5840	0.3970	230	3.6699	0.3725	268	496	6.200	.013*
Mixed descent	3.7257	0.3394	24	3.7622	0.3512	30	52	.148	.702

* $p < .05$

With reference to the Caucasian adolescents, the boys were not as connected as the girls. The girls were significantly more connected than the boys to: reading ($F = 6.104 = p < 0.05$; $M=3.4343$ versus 3.0570); school ($F = 6.836 = p < 0.05$; $M = 3.9026$ versus 3.6877); and peers of other races ($F = 12.340 = p < 0.01$; $M = 3.8286$ versus 3.3405).

Regarding the African racial group, the boys were significantly more connected to their neighbourhoods than the girls ($F = 17.558 = p < 0.01$; $M = 2.9628$ versus 2.5950) and to their fathers ($F = 4.849 = p < 0.05$; $M = 3.6247$ versus 3.407). However, the girls were far more connected than the boys in six instances : reading ($F = 33.776 = p < 0.001$; $M = 3.2910$ versus 2.7254); religion ($F = 10.474 = p < 0.01$; $M = 4.1459$ versus 3.8765); school ($F = 20.905 = p < 0.001$; $M = 3.8871$ versus 3.6283); teachers ($F = 21.338 = p < 0.001$; $M = 3.8134$ versus 3.4933); peers of other races ($F = 20.089 = p < 0.001$; $M = 4.1220$ versus 3.7251) and to friends ($F = 15.204 = p < 0.001$; $M = 3.4782$ versus 3.2223).

Hypothesis 4

On the next level of analysis, Grade was also considered. The means and standard deviations of 12 groups (Grade 8 and 11 males and females of three racial groups) are illustrated by Table 4.

Table 4 shows that of the 12 groups, the rank order of *most* to *least* connected was: Grade 8 Mixed descent females ($M = 3.8816$); Grade 8 Caucasian females ($M = 3.8196$); Grade 8 Mixed descent males ($M = 3.7751$); Grade 8 Caucasian males ($M = 3.7502$); Grade 8 African females ($M = 3.7473$); Grade 11 Mixed descent males ($M = 3.6935$); Grade 11 Caucasian females ($M = 3.6871$); Grade 11 Mixed descent females ($M = 3.6428$); Grade 8 African males ($M = 3.6058$);

Grade 11 African males ($M = 3.5539$); Grade 11 African females ($M = 3.5466$); and lastly, the Grade 11 Caucasian males ($M = 3.4796$). The range of the means (3.4796 and above) implies that all groups were relatively well connected, although the Grade 8 African males ranked surprisingly low within this rank order where Grade 8 students were generally more connected than Grade 11 students.

ANOVAs identified significant differences in two instances: Grade 8 Caucasian males were significantly more connected than Grade 11 Caucasian males ($F = 8.904 = p < 0.01$; $M = 3.7502$ versus 3.4796). Likewise, Grade 8 African females were significantly more connected than Grade 11 African females ($F = 19.533 = p < 0.001$; $M = 3.7473$ versus 3.5466).

DISCUSSION

In the microsystems of the adolescents’ day-to-day functioning, they connected with a variety of people and objects in their respective contexts. The results showed that the adolescents were overall relatively well connected since most means were above 3. Connectedness to family in particular was seen as key to prevent serious psychological problems (Kaminsky et al. 2010; Stuart and Jose 2014). Such connectedness does not imply a lack of healthy autonomy (Kagitcibasi 2005). Adolescents have the need and the capacity for self-reliance and satisfactory relationships as explained by the self-determination theory (Ryan and Deci 2000).

In particular, the adolescents were connected to the future, religion and themselves, in confirmation of a previous South African paper (Steyn et al. 2010). Such hopeful expectations for the future facilitate positive development in adolescents (Calina et al. 2014). The fact that the

Table 4: Significant differences in connectedness of males and females in Grade 8 and Grade 11 of three cultural groups

	Grade 8			Grade 11			df	F	Sig.
	M	SD	n	M	SD	n			
African male	3.6058	0.4021	121	3.5539	0.3887	108	227	4.172	.290
African female	3.7473	0.3448	167	3.5466	0.3819	100	265	19.53	.000**
Caucasian male	3.7502	0.4038	64	3.4796	0.4360	31	93	8.904	.004**
Caucasian female	3.8196	0.3622	92	3.6871	0.4398	50	140	3.715	.056
Mixed descent male	3.7751	0.3622	16	3.6935	0.2298	7	21	.298	.591
Mixed descent female	3.8816	0.3624	15	3.6428	0.3059	15	28	3.801	.061

** $p < .01$

students were not well connected to reading, particularly the boys, was also in accordance with a previous South African paper conducted more than a decade ago (Machet 2002). In this regard, both Hunsberger (2007) and Machet (2002) pointed out how important it was for readers to be able to identify (*connect*) with the characters of books. This has implications for writers, the teachers of languages and school librarians.

The girls in the sample were overall significantly more connected than the boys in accordance with some studies (for example, Lang-Takac and Osterweil 1992; Townsend and McWhirter 2005). In particular, the girls revealed greater social connectedness to teachers, friends and peers of other cultures, and to reading, religion and school. If the relatively small sample size is considered, the difference between South African adolescent boys and girls regarding their connectedness on these scales could be substantial. Reasons for the differences could relate to parental socialisation patterns as well as the influence of peers and the media. The boys' lower connectedness to school could indicate that they were less engaged academically, enjoyed school less and did not experience as much teacher support as the girls (Libbey 2004). This could influence their overall happiness (Allen and Bowles 2012) and impact negatively on their academic achievement (Chhuon and Wallace 2014). In only one instance was the girls less connected than the boys. The relatively low connectedness of the girls to their neighbourhoods may be related to high crime rates in South Africa and to a greater restriction on their movements by their parents. Parents tend to grant boys more freedom to venture outside the home, thus fostering their greater community connectedness (Noom et al. 2001).

When the overall connectedness of the six groups was compared (the two genders for each of the three racial groups), it was notable that for all three racial groups, the females were once again more connected than the males, in accordance with the above mentioned results for hypotheses 1 and 2. The Caucasian females were most connected followed by the Mixed descent females, while the Caucasian and the African males were least connected. This is an important finding for many reasons which include the fact that a sense of social connectedness to others in one's racial group is supportive of academic achievement (Carter 2005) and to overall well-being over time (Stuart and Jose 2014).

Regarding age as variable, Caucasian male and African female adolescents became significantly less connected with age. This finding raises concerns since authors have pointed out the importance of remaining connected while becoming autonomous (Ryan and Deci 2000; Chirkov et al. 2003). If the trend continues, it may develop into disconnectedness and alienation in late adolescence for these groups. This trend can be mitigated by high levels of family connectedness, according to Stuart and Jose (2014).

CONCLUSION

The research aimed at exploring gender differences in the connectedness of adolescents in Grade 8 and 11, in four schools. To this end, 361 boys and 455 girls completed the MAC questionnaire. The sample was not representative of any particular group and this is acknowledged as a limitation of the research. The fact that the research relied on a self-report questionnaire which was not designed for the South African context *per se* is another limitation of the paper. However, given the exploratory nature of the research, the results are nevertheless valuable for identifying numerous significant differences between the genders.

The results revealed that in the school microsystem of the adolescents' lives, the girls were significantly more connected overall than the boys. This is an important finding. In particular, the girls in the sample were more connected than the boys to school, reading and religion. The boys indicated greater connectedness to their neighbourhoods.

When the genders in the three racial groups were compared, there were insignificant differences between the Mixed descent boys and girls, apart from the girls' greater connectedness to their teachers. In the Caucasian racial group, there were more differences between the genders – the girls were significantly more connected to reading, school and peers of other cultures or races. The majority of differences were between the African boys and girls where substantial differences were determined in eight domains: the African girls showed greater connection to people outside the home (teachers, friends, peers of other cultures) and to reading, religion and school, than the boys; while the latter were more connected to their neighbourhoods and to their fathers than the girls.

Finally, regarding the Caucasian boys and the African girls, the Grade 8s were in general significantly more connected than the Grade 11s. Thus, these two groups in particular grow more *disconnected* as they grow older. This is also a valuable finding.

RECOMMENDATIONS

The above mentioned findings seem to point to different gender socialisation patterns of parents within the ecological systems of the three racial groups. It is recommended that these findings be further investigate by means of a qualitative approach to understand the complex interplay between racial and social constructions of the gender of different age groups.

Schools are in exceptional positions to mediate adolescent connectedness, perhaps by raising awareness among teachers of why and how adolescent connectedness may be enhanced in classrooms. In this regard the social relationships in classes and the way in which discipline is enforced are particularly important. There is a need to target specific domains (for example, reading, school, peers of other races and cultures) and particular groups (for example, the Grade 11 Caucasian males and the Grade 11 African females). Relevant interventions may promote satisfactory relationships and thus foster a sense of wellbeing in all students. The interventions are important for both genders, in particular for the African girls and Caucasian boys.

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