

**SHORT MESSAGE SERVICE (SMS) AND LONELINESS IN A
GROUP OF ADOLESCENTS**

G. MCLACHLAN Hons. B.A.

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Supervisor: Prof. C.A. Venter

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G. MCLACHLAN

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SUMMARY

Short Message Service (SMS) and loneliness in a group of adolescents.

Key words: SMS (Short Message Service), Text message, Adolescents, Loneliness

The aim of the research was to explore the relationship between the use of SMS communication by adolescents and their perceived feelings of loneliness. The SMS seems to be the new communication medium for young people as they are most comfortable with and enthusiastic about this technology and its applications. The adolescent stage is characterised by the building of own social networks, the definition of boundaries between themselves and parents, self-presentation constructed on a social stage in relation to others and characterised by the development of romantic attachments, feelings of anxiety, self-esteem development and maintenance which may result in feelings of isolation and loneliness. Loneliness can be defined as an emotional and cognitive reaction to having fewer and less satisfying relationships than one desires. This includes the absence or self-perceived absence of satisfying social relationships and the unpleasant experience that occurs when a person's network of social relations is deficient in some important way. The motivation for this research was to get insight into the relationship between the use of SMS communication and loneliness in the South African context. An internet search on the 13th February 2006 indicated that no research has yet been done on the relationship between the use of the SMS and loneliness of adolescents in South Africa.

An availability sample was used. One hundred and seventeen Grade 11 and 12 learners from two schools in the North West Province participated in the research project. An explanatory cross-sectional survey design with features of qualitative data analysis was used in this investigation. Three methods were used to obtain data, namely the UCLA Loneliness Scale (Version 3), Satisfaction with Life Scale as well as a self-compiled questionnaire. After scoring the UCLA scale the researcher determined which of the participants had the highest level of loneliness and the

lowest level of loneliness. Two groups were chosen, each consisting of 15 learners, according to the highest and lowest scores on the loneliness scale respectively. These two groups represented the top and bottom 14% of the sample. The data obtained from the self-compiled questionnaire and Satisfaction with Life scale were qualitatively compared. Analysis of the data indicated that there might be a relationship between the experience of loneliness and the following: gender; number of siblings; involvement in romantic relationships; amount of money spent on bill (financial constraints); quantity of SMS messages sent and received; need to stay in contact with friends over the weekend; reasons for sending SMS messages; feelings regarding sending or receiving SMS messages; feelings regarding no response to SMS messages; feeling with regard to not receiving SMS messages from a friend for a long time; initiating of friendships via cellphone and the SMS rather than face-to-face communication. Suggestions for future research projects were made.

OPSOMMING

“SHORT MESSAGE SERVICE” (SMS) EN EENSAAMHEID IN ‘N GROEP ADOLESSENTE

Sleutelwoorde: SMS (Short Message Service); Teksboodskap; Adollesente;
Eensaamheid

Die doel van die navorsing was om die verband tussen die gebruik van SMS kommunikasie by adollesente en hul waargenome gevoelens van eensaamheid te ondersoek. Dit wil voorkom asof SMS boodskappe die nuwe kommunikasiemedium vir jong persone is, aangesien hul gemaklik en geesdriflig is oor hierdie tegnologie asook die aanwending daarvan. Die adollesentestadium word gekenmerk deur die totstandbrenging van eie sosiale netwerke, die definiëring van grense tussen hulself en hul ouers, selfpresentasie gekonstureer op ‘n sosiale vlak in verhouding tot ander asook die ontwikkeling van romantiese verbindings, selfbeeldontwikkeling en instandhouding wat gevoelens van isolasie en eensaamheid tot gevolg kan hê. Eensaamheid kan gedefinieer word as die emosionele en kognitiewe reaksie op minder bevredigende verhoudings as wat verlang word. Dit sluit die afwesigheid of selfwaargenome afwesigheid van bevredigende sosiale verhoudings in asook die onaangename ondervinding wat voorkom wanneer ‘n persoon se netwerke van sosiale verhoudings ontoereikend in ‘n sekere mate is. Die motivering vir hierdie studie was om insig te verkry in die verband tussen die gebruik van SMS kommunikasie en eensaamheid in die Suid-Afrikaanse konteks. ‘n Internetsoektog op 13 Februarie 2006 het aangedui dat nog geen navorsing oor die verhouding tussen SMS’e en alleenheid van adollesente in Suid-Afrika gedoen is nie.

‘n Beskikbaarheidsteekproef is gebruik. Een honderd en sewentien graad 11- en 12- leerders van twee skole in die Noordwesprovinsie het aan die navorsingsprojek deelgeneem. ‘n Verkennende dwarsdeursnit opnameontwerp met kenmerke van kwalitatiewe data-analise is gebruik in die ondersoek. Drie metodes is gebruik om data in te samel, naamlik die UCLA-eensaamheidskaal (3de uitgawe),

Lewenstevredenheidskaal en 'n selfsaamgestelde vraelys. Nadat die UCLA-skaal nagesien is, het die navorser bepaal watter van die deelnemers die hoogste vlak en die laagste vlak van eensaamheid behaal het. Twee groepe is gekies wat bestaan het uit 15 leerders in elke groep, wat afsonderlik die hoogste en laagste tellings op die eensaamheidskaap behaal het. Hierdie twee groepe eht die boonste en onderste 14% van die proefgroep verteenwoordig. Die data wat verkry is deur die selfsaamgestelde vraelys en die Lewenstevredeneheidskaal is kwalitatief vergelyk. 'n Analise van die data het 'n moontlike verband aangedui tussen die ervaring van eensaamheid en die volgende: geslag; aantal sibbe; betrokkenheid in romantiese verhoudings; die hoeveelheid geld wat spandeer word op rekening (finansiële besteding); hoeveelheid SMS boodskappe gestuur en ontvang word; behoefte om in kontak te bly met vriende oor die naweek; gevoelens rakende geen respons op SMS boodskappe; gevoelens rakende nie ontvang van 'n SMS boodskap van 'n vriend oor 'n lang tydperk; aanvang van vriendskappe via die selfoon en SMS kommunikasie eerder as aangesig-tot-aangesig kommunikasie. Aanbevelings vir verdere navorsingsprojekte is gemaak.

LETTER OF CONSENT

I, the co-author, hereby give consent that Gerda McLachlan may submit the following manuscript for purposes of a dissertation. It may be submitted to the *South African Journal of Psychology* for publication.

Prof. C.A. Venter

INTENDED JOURNAL AND GUIDELINES FOR AUTHORS

South African Journal of Psychology

The manuscript as well as the reference list has been styled according to the above journal's specifications.

(Guidelines for authors on next page.)

SOUTH AFRICAN JOURNAL OF PSYCHOLOGY

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MANUSCRIPT

MANUSCRIPT TITLE, AUTHORS AND ADDRESSES

TITLE

SHORT MESSAGE SERVICE (SMS) AND LONELINESS IN A GROUP OF
ADOLESCENTS

AUTHORS

Ms. Gerda McLachlan
41 Leeurik Ave
Rustenburg
0299

Prof C.A. Venter*
School for Psychosocial Behavioural Sciences: Psychology
North-West University (Potchefstroom Campus)
Private Bag X6001
Potchefstroom
2520
E-Mail: Chris.Venter@nwu.ac.za

*To whom correspondence should be addressed

ABSTRACT

The aim of this research was to explore the relationship between the use of the SMS by adolescents and their perceived feelings of loneliness. The motivation for this research was to get insight into the relationship between the use of SMS communication and loneliness in the South African context. One hundred and seventeen Grade 11 and Grade 12 learners from two schools in the North- West Province participated in the research project. An explanatory cross-sectional survey design with features of qualitative data analysis was used in this investigation and content analysis, a flexible qualitative research technique of text data, was applied. Analysis of the data indicated that there might be a relationship between the experience of loneliness and the following: gender; number of siblings; involvement in romantic relationships; amount of money spent on bill (financial constraints); quantity of SMS messages sent or received; need to stay in contact with friends over the weekend; reason for sending SMS messages; feelings regarding sending or receiving SMS messages; feelings regarding no response to SMS communication; feelings with regards to not receiving SMS messages from a friend for a long time; initiating of friendships via cellphone and the SMS rather than face-to-face communication. These results indicate that the high loneliness group use their cellphones to compensate for feelings of loneliness by staying in contact with others. There are also indications that because of certain personality dispositions participants of the high loneliness group tend to internalise the responses to their SMS messages. Suggestions for future research projects are made.

The Short Message Service (SMS) is one of the most remarkable success stories in the world of data communications (Rao, in Fraunholz & Unnithan, 2003). This technology allows data, which can contain up to 500 characters, to be sent and received via mobile phones and the receiver can identify the sender by his/her telephone number that is included in the message itself (Cortinini, Mininni & Manuti, 2004; Fraunholz & Unnithan, 2003; Xu, Teo & Wang, 2003). As a convenient and low-cost mobile communication technology, SMS is experiencing rapid growth (Fraunholz & Unnithan, 2003; Xu et al., 2003). In June 2004 there were 18.7 million users in South Africa and 80% of these were active users. It was estimated that there would be 19 million users in South Africa in 2006. Vodacom, South Africa's largest cellular service provider, has transmitted 2 billion SMS messages during 2005 alone (CellularOnline, 2004).

Every new generation desires a technology that it can adopt as its own to communicate (Fraunholz & Unnithan, 2003). One can make the assumption that the SMS is the new communication medium for young people and that they are a generation most comfortable with and enthusiastic about this technology and its applications (Madell & Muncer, 2004). Research has shown that adolescents are the most active users of text-based communication (Cortelazzo in Cortini et al., 2004; Igarashi, Takai & Yoshida, 2005; Leung, 2006; Madell & Muncer, 2004; Oksman & Turtiainen, 2004; Thurlow in Reid & Reid, 2004).

Adolescents basically have three major reasons for choosing SMS's over other media: it is quicker, cheaper than making calls and easier or more convenient than other communication methods (Eldridge & Grinter, 2001; Leung, 2006; Xu et al., 2003). The contents of young people's mobile communication are very similar in different parts of Europe: with the help of mobile communication, young people build their own social networks and define boundaries in their relationship with parents. To adolescents, the SMS is a quiet and simple way to maintain their social network without parental knowledge (Oksman & Turtiainen, 2004). An SMS message can be sent and replied to silently, and can thus be used in public places or late at night from bed (Eldridge & Grinter, 2001; Igarashi et al., 2005). It is also used to define who belongs to important social communities and how self-presentation is constructed on a social stage in relation to others (Oksman & Turtiainen, 2004). Another reason that adolescents use SMS

communication is to arrange times to chat and to adjust arrangements already made and coordinate with friends and family. Teenagers also communicate their feelings to others, or simply to send a goodnight note to loved ones (Eldridge & Ginter, 2001; Leung, 2006). Rogers (in Leung, 2006), when describing the characteristics of adopters of new media, pointed out that higher-status individuals may be especially likely to adopt the new media because they are seen as status symbols. Sending or receiving SMS messages in public places was done as a way of making a status statement that the user is stylish and fashionable.

A study by Thurlow (in Reid & Reid, 2004) regarding the habits of undergraduate SMS users, indicated that only about one-third of messages accomplished functional or practical goals – the remainder fulfilled a combination of friendship maintenance, romantic, and social functions associated with highly intimate and relational concerns. An SMS message therefore seem to provide an opportunity for intimate personal contact whilst at the same time offering the detachment necessary to manage self-presentation and involvement.

Text-based communication is one form of communication among many others, and as such serves to reshape our opportunities for social communication and the presentation of the self (Oksman & Turtiainen, 2004). In view of the relationship between social contact and loneliness the researcher makes the hypothesis that the use of the SMS may have an effect on adolescents' feelings of loneliness.

Loneliness can be defined as an emotional and cognitive reaction to having fewer and less satisfying relationships than one desire. This include the absence or self-perceived absence of satisfying social relationships and the unpleasant experience that occurs when a person's network of social relations is deficient in some important way (Baron & Byrne, 2000; Goswick & Jones, 1981; Hojat & Crandell, 1989; Jones, 1981; Jones & Hebb, 2003; Uruk & Demir, 2003). Loneliness is also inversely related to measures of self-esteem as well as anxiety, depression, hostility, hopelessness, dissatisfaction and unhappiness. Some of the personality dispositions directly related to loneliness includes shyness, introversion and self-consciousness (Baron & Byrne, 2000; Jones & Hebb, 2003; Ruben & Mills, in Richaud de Minzi & Sacchi, 2004; Rokach, 2003). Feelings of

loneliness and isolation can occur at various stages of development, but these feelings are usually most intense in adolescence (Jones & Hebb, 2003; Meyer Gaev, 1976).

It is important to note that the central developmental task of adolescence is that of relinquishing parental attachment and forming new attachments to same- or opposite-sex peers or to a peer group. During adolescence, peers are the most influential group. In some cases, they co-opt the family and become the person's primary group (Hojat & Crandall, 1989; Uruk & Demir, 2003).

Research confirms the expectation that loneliness in adolescence is greater in the absence of certain types of relationships and at reduced levels of social contact with family and friends (Jones & Hebb, 2003; Uruk & Demir, 2003). Loneliness is inversely related to the number of casual and intimate friends, and the amount of support received from one's friends and family (Jones & Hebb, 2003; Meyer Gaev, 1976; Uruk & Demir, 2003). It is significantly related to the frequency of social contact with others, time spent with others, dating frequency, and number of conversations (Jones & Hebb, 2003).

The most frequently tested hypothesis is the idea that loneliness is perpetuated and perhaps initiated by the rejection from others. Such rejection is believed to occur because individuals, vulnerable to loneliness, have inadequate social skills or is in some way marginalized or stigmatised (Jones & Hebb, 2003).

Loneliness and isolation as a result of peer group rejection at the adolescent stage can be overwhelming, unless there are some special compensating factors in a young person's life (Hojat & Crandall, 1989). According to Reid and Reid (2004) sending an SMS seems to facilitate the expression of some people's real feelings. It appears that there is something about communicating via SMS that allows some people to translate their loneliness and/or social anxiety into productive relationships whilst for other the cellphone does not afford the same effects.

The motivation for this research is to get insight into the relationship between the use of SMS communication and loneliness in the South African context. An internet search on the 13th February 2006 indicated that no research has yet been done on the relationship between the use of the SMS and loneliness of adolescents in South Africa. The researcher hopes that the data elicited may lead to further research into this topic. She

would like to incorporate the findings of this study to a PhD programme that would facilitate the use of SMS communication in the treatment of loneliness.

RESEARCH

Aim

The aim of the research was to explore the relationship between the use of SMS communication by adolescents and their perceived feelings of loneliness.

Design

An explanatory cross-sectional survey design with features of qualitative data analysis was used in this investigation. This approach typically occurs when a researcher examines a new interest or when the subject of study itself is relatively new (Babbie, 2002).

Participants

An availability sample was used (Babbie, 2002). The participants were selected from a group of Grade 11 and 12 learners who owned their own cellphone. They were recruited from two different high schools in the North West Province: a dual medium school in Potchefstroom and an Afrikaans school in Rustenburg. The researcher decided on these two schools because of accessibility and convenience. Permission to conduct this research was obtained from the principals of the two schools.

The research was announced at the schools and all interested learners, and their parents, signed a letter of consent. The learners were asked to complete the UCLA Loneliness Scale (Version 3) (Russell, 1996), Satisfaction with Life Scale (Diener, Emmons, Larsen, Griffin, 1985) as well as a self-compiled questionnaire. The UCLA Loneliness Scale and the self-compiled questionnaire were applied as their

information/data were used to tap into the relationship between loneliness and SMS communication whilst the Satisfaction with Life was used to describe the nature of the participants more comprehensively.

One hundred and seventeen subjects (21 learners from the school in Potchefstroom and 106 learners from the school in Rustenburg) completed the UCLA loneliness scale. Twenty-three questionnaires were rejected as incomplete. The total sample comprised of 104 participants - 48 (46%) male participants and 56 (54%) female participants. The learners were between the ages of 16 and 19.

The reason for the difference in the number of learners that participated from the two different schools can be partly explained by the large number of learners in the Rustenburg school (386 learners in Grade 11 and 12) and the lesser number of students in the Potchefstroom school (approximately 165 learners). Another reason may be the apparent confusion that certain learners of the Potchefstroom school and their parents had with regard to the possible side-effects of the research. As the prescribed consent forms of the North-West University are used in research in the Social, Physical and Biological Sciences, one or two possible side-effects that were totally inappropriate to the current research were incorrectly interpreted as such by the learners and their parents. The researcher made sure that the same misunderstanding did not occur at the Rustenburg school.

After scoring the UCLA scale the researcher determined which of the participants had the highest level of loneliness (i.e. the participants with a score closest to 80) and the lowest level of loneliness (i.e. the participants with a score closest to 20). Two groups were chosen, each consisting of 15 learners. The selection criteria were the highest and lowest scores obtained on the loneliness scale, respectively. These two groups represented the top and bottom 14% of the sample.

The high loneliness group consisted of 15 participants - 11 participants aged 17 and 4 participants aged 18. The group comprised of 11 female and 4 male participants. The scores obtained on the loneliness scale of this group ranged between 51 and 62.

The low loneliness group comprised of 15 participants - 2 participants aged 16 and 13 participants aged 17. Seven female and 8 male participants were included in this group.

Their scores on the loneliness scale were between 24 and 32. The homelanguage of all participants was Afrikaans and none of them was hostel residents.

As predicted, Satisfaction with Life scores was related to loneliness ratings in these two groups. The average score obtained on the SWLS by the high loneliness group were 16,7, while the average score obtained by the low loneliness group were 27,7. The high loneliness group therefore reported a lesser degree of general life satisfaction than the low loneliness group, thus indicating a relationship between loneliness and the experience of life satisfaction in the two groups.

A study by Carden and Rettew (2006) regarding the relationship between life satisfaction, loneliness and time spent in an Internet chatroom, indicated that Satisfaction with Life scores were inversely correlated with loneliness. Schumaker, Shea, Monfries and Groth-Marnat (1992) examined the relationship between loneliness and life satisfaction in Japanese and Australian residents. A high inverse correlation was found between loneliness and life satisfaction in Australian subjects, with a much smaller inverse relationship observed among Japanese, suggesting that loneliness in Japanese subjects did not emotionally translate into life dissatisfaction as it did in the Australian subjects. The experience of loneliness in Japanese subjects may remain largely independent of general life satisfaction

The results of this research thus correspond with the Carden and Rettew (2006) study, as well as the Australian participants in the Schumaker et al.(1992) study.

Measures

UCLA Loneliness Scale (Russell et al., 1996)

The UCLA Loneliness Scale, the most frequently used measure of loneliness, measures loneliness conceptualised as an unidimensional emotional response to a discrepancy, between desired and achieved level of social contact (Carden & Rettew, 2006; Jones & Hebb, 2003; Russell, Dutton, Robinson, Shaver & Wrightman, 1991). The scale contains 20 items and respondents indicate on a 4-point Likert scale, ranging from *never*

(1) to *often* (4), the extent to which statements are true to them. The scores on the questionnaires range from twenty (low level of loneliness) to eighty (high level of loneliness).

According to Pretorius (1993) this scale is appropriate to be used in the South African context. His findings also indicate adequate internal-consistency reliability. The factorial structure of the scale also seems to support the unidimensionality of loneliness as originally suggested by the authors.

As there were Afrikaans speaking participants in both groups, it necessitated the translation of the questionnaire into Afrikaans. This was done by the forward-translation design (Foxcroft & Roodt, 2005). A registered translator translated the scale and the translated version were given to a number of lecturers and students to check the face validity of the translation.

Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen & Griffen, 1985)

This scale focuses on the assessment of global life satisfaction as cognitive judgmental process and does not tap related constructs such as positive affect and loneliness (Diener et al., 1985; Neto, 1993). According to Jones et al. (in Jones & Hebb, 2003) lonely individuals have greater difficulty finding meaning, purpose and satisfaction in life. The reason for including the SWLS was to assess satisfaction with the participant's life as a whole. According to Neto (1993) the Satisfaction with Life scores showed to be predictably associated with psychological measures, namely loneliness, social anxiety, shyness, self-concept and physical attractiveness. Satisfaction with Life scores were expected to be inversely related to loneliness ratings in these two groups.

The Satisfaction with Life Scale (Diener et al., 1985) is a 5-item self-report questionnaire and respondents indicate their decisions on a 7-point Likert scale, ranging from *strongly disagree* = 1 to *strongly agree* = 7. The scores on the questionnaire range from 5 (low satisfaction) to 35 (high satisfaction). High scores are thus indicative of a person with high satisfaction with his or her life. The Satisfaction with Life Scale has shown to have good internal consistency and reliability. According to Wissing et al. (in

Pretorius, 2004) the scale was found to be valid and reliable for use in the African context. The scale was also translated into Afrikaans by a registered translator by using the forward-translation design (Foxcroft & Roodt, 2005). As was the case with the UCLA Loneliness Scale, a number of lecturers and students evaluated the face validity of the translation.

Self-compiled questionnaire

This questionnaire (see Appendix A and B) consisted of biographical information, practical questions regarding the cellphone and 25 open ended questions regarding the use of the cellphone, SMS/talk preferences, the feelings involved in sending and receiving SMS messages, as well as the use of the SMS in relationship development and maintenance. This questionnaire was compiled after a thorough review of the most recent literature available on cellphone use and loneliness at the time of the study. The researcher thought it necessary to tap into information that might contribute to feelings of loneliness. Participants had to respond to these questions in writing.

Method of gathering information

As previously indicated the participants completed the UCLA Loneliness Scale, Satisfaction with Life Scale and the self-compiled questionnaire. Both principals of the two schools involved, brought the researcher in contact with a teacher at the school appointed to take responsibility for the signing of informed consent letters as well as completion of the questionnaires. Participants completed these questionnaires at their school during school time and the teacher supervised them. As both these teachers lectured Grade 11 and Grade 12 learners, they preferred the learners to complete the questionnaires during the allocated time of their lectures. The learners completed the questionnaires during October 2006 and for the Grade 12 learners this was only weeks before commencing their final school examinations. The aim of the research was

communicated to the teachers and questions with regards to the research had to be communicated to the researcher.

Analysis and interpretation of data

To explore the relationship between the SMS usage and loneliness, the SMS questionnaires of the two groups, representing high and low loneliness, were qualitatively compared. Information about these participants according to the Satisfaction with Life Scale was included to expand the data of this study.

Content analysis, a flexible qualitative research technique of text data, was applied (Hsieh & Shannon, 2005). This involves coding which is the transformation of raw data into categories based on a conceptual scheme. Coding may attend to both manifest and latent content. The determination of latent content requires judgment on the part of the researcher (Babbie, 2002). Hsieh and Shannon (2005) refer to this type of content analysis as conventional content analysis which is appropriate when existing theory or research literature on the phenomenon is limited. However, qualitative research methods involve a continuing interplay between data collection and theory (Babbie, 2002).

The researcher read through the data to get an overview of the participants' use of the SMS. Coding was applied to each question individually and broad themes were identified. This gave the researcher an indication of patterns appearing in the data. These themes were then refined to ensure the data was correctly reflected.

Ethical aspects

Participants were informed that participation in the study was voluntary and that they had the option to not participate. Letters of consent, that were developed by the ethics committee of the North West University and compulsory for research purposes, were signed by the participants and their parents before commencing the research. To ensure that ethical aspects were adhered to, information regarding the research was given to the

participants and confidentiality preserved. Approval of this study was obtained from the ethics committee of the North West University (Potchefstroom Campus).

RESULTS AND DISCUSSION

The data obtained from the questionnaires will be discussed in the order of the questions in the questionnaire. The questions with regard to the SMS messages sent and received will be discussed simultaneously (see Question 3 to 11). An overview of the literature will be provided.

BIOGRAPHICAL INFORMATION

Gender of participants

The high loneliness group comprised of 11 female and 4 male participants, while the low loneliness group comprised of 7 female and 8 male participants. The participants who experienced high loneliness in this study were therefore more likely to be female. This results indicate that there might be a relationship between the gender of the participants and the experience of loneliness.

The issue of whether males or females are more vulnerable to loneliness has not yet been resolved. According to Russell et al. (in Neto & Barros, 2000), research has not indicated any gender difference in loneliness. However, Weiss (in Neto & Barros, 2000), presented survey evidence indicating that women were more apt to be lonely than men. Although gender difference have not been consistently found in studies of loneliness, Borys and Perlman (in Jones & Hebb, 2003) argued that a possible explanation for these inconsistencies might be the difference in participants to report negative experiences and differential consequences associated with the label loneliness rather than differences in loneliness per se. As there are many predictors in loneliness, such as personality traits, it would require specific research to be certain about the relative importance of the gender variable (Uruk & Demir, 2003).

The results of this research corresponded with the results of the Weiss study.

Familial circumstances

Parental divorce

Of the 30 participants 7 participants' parents were divorced – 4 participants from the high loneliness group and 3 participants from the low loneliness group. It seems as if there is no relationship between parental divorce and participants' experience of loneliness.

Some researchers have examined loneliness as a consequence of disruptions of the attachment process during infancy and childhood (e.g. parental divorce) and found that parent-child relationship quality correlates with childhood and adolescent loneliness (Marcoen & Brumagne, in Jones & Hebb, 2003). A study by Hojat (in Uruk & Demir, 2003) found that adolescents who reported that their parents did not devote enough time to them, or never understood them, or did not go to their parents for help, were more likely to experience loneliness.

With regard to the current research, it is not certain whether there was a correspondence with the Marcoen and Brumagne study or the Hojat study, as this research did not investigate parent-child relationship.

Siblings

In the high loneliness group 5 participants did not stay with any sibling compared to 3 participants staying with no sibling in the low loneliness group. One in each group did not have any siblings. Although the number of participants involved was small, the findings might indicate a relationship between the number of siblings and participants' feelings of loneliness. It is important to note that the researcher did not conduct any specific research on the possible influence of the number of siblings as this was not the aim of the study. Therefore, interpretation of these results should be done cautiously.

Ponzetti and James (in Uruk & Demir, 2003), found that sibling bonds were a significant predictor of loneliness. Similar results suggested that the number of siblings and birth order have an effect on family relations and child-rearing styles (Bell & Avery,

in Uruk & Demir, 2003). However, Medora and Woodward (in Uruk & Demir, 2003) found no significant relationship between loneliness and number of siblings. These contradictory findings may indicate that there may be other factors within the family that affect the relationship between the number of siblings and loneliness (Uruk & Demir, 2003).

It would appear that the current study corresponds with the findings Bell and Avery (in Uruk & Demir, 2003), Medora and Woodward (in Uruk & Demir, 2003) and Ponzetti and James (in Uruk & Demir, 2003).

Romantic relationships

Three participants from the high loneliness group and 9 participants from the low loneliness group were involved in romantic relationships. The assumption can therefore be made that there might be a relationship between the involvement in a romantic relationship and the participants experience of loneliness.

The impact of relational status on loneliness is more complex than the presence or absence of a partner. Even so, it is clearly a consistent predictor of loneliness (Jones & Hebb, 2003). The nature and quality of the parent-child relationship during childhood and adolescence may influence the child's ability to establish intimate relationships with others. Thus, these relationships, rather than the parent-child relationship, may become more directly associated with loneliness (Schultz & Moore, in Hojat & Crandell, 1989).

The findings of the current study correspond with the findings of Jones and Hebb (2003) as the involvement in romantic relationships were more with the low loneliness group than the high loneliness group. Again, it is difficult to establish whether the current study corresponds with the study of Schultz and Moore, as the current research did not tap into the parent-child relationship.

CELLPHONE OWNERSHIP

Duration of having a cellphone

In the high loneliness group the average duration of owning a cellphone was 4,5 years and in the low loneliness group the average time was 4,8 years. It seems evident that on average learners received their cellphones between the age of 10 and 13. There is not a marked difference in the duration of owning a cellphone in the current study which might indicate that there is no relationship between duration of having a cellphone and feeling of loneliness.

In the Reid and Reid (2004) study there were no significant differences in the amount of time the high and low loneliness groups have owned a cellphone, suggesting that loneliness was not mediated by the length of ownership of a cellphone. A study by Madell and Muncer (2004), that involved 1340 secondary school learners in Teasside, England, indicated that the majority of their participants owned a cellphone at around the age of 12 year.

It is clear that the findings of the current study regarding the duration of owning a cellphone, correspond with the finding of Reid and Reid (2004). With regards to the average age of obtaining a cellphone, the current study corresponds with the research by Madell and Muncer (2004).

Type of cellphone contract

In the sample group there were 19 participants who had cellphones with monthly contracts (10 in the high loneliness group and 9 in the low loneliness group) while 11 participants had pay-as-you-go plans (5 in the high loneliness group and 6 in the low loneliness group). Thus there are no relationship between the type of cellphone contract and experience of loneliness in the current study.

In the Reid and Reid (2004) study those of the high loneliness group were less likely to have a monthly contract, instead preferring a pay-as-you-go plan. Therefore, the findings of this study do not correspond with the findings of the Reid and Reid (2004) study.

Financial constraints

The average amount spent on the bills of the high loneliness group was R140,25 per month while the average amount of the low loneliness group was R172,58. This results indicate a relationship between the use of the cellphone and the experience of loneliness.

Reid and Reid (2004) reported in their study, that the high loneliness groups' cellphone accounts were reportedly significantly less than the low loneliness group. The results of the current study therefore correspond with the findings of the Reid and Reid study . A possible reason for this difference might be that the participants in the low loneliness group have more friends and therefore use their cellphone more.

USE OF THE CELLPHONE

Common use of the cellphone

Participants in both the high and low loneliness groups reported that sending SMS messages is the most frequently used function on their cellphones. Other uses identified include, in order of preference: making calls, taking pictures, watching videos, playing games, listening to music and chatting with friends via MXit, calculator, watch, alarm clock, torch and checking the weather. MXit is a chat application for your cellphone that allows you to communicate with other MXit users on their cellphones or even on a Personal Computer (IT Week, 2006). This function on the cellphone was reported to be used more widely by the low loneliness group in comparison to the high loneliness group. This might indicate a relationship between Mxit use and feelings of loneliness in cellphone users. The participants thus indicated that they regard the cellphone not only as a mode of communication, but also as an instrument of entertainment.

Research showed that adolescents are the most active users of text-based communication, especially the SMS (Cortelazzo, in Cortini et al., 2004; Igarashi et al., 2005; Leung, 2006; Madell & Muncer, 2004; Oksman & Turtiainen, 2004; Thurlow, in Reid & Reid, 2004). The multimedia generation differs from the previous generation in that more extensive use is made of cellphone communication and new media. The function of cellphone communication differs when young people and adults are compared

e.g. aspects such as cellphone games form an essential part of the cellphone culture of teenagers (Oksman & Turtiainen, 2004).

The participants' way of using the cellphone new media, in the current study, therefore corresponded with previous studies.

The SMS as most used function on the cellphone

Both the high and low loneliness group indicated that they preferred using SMS communication instead of making calls. The main reason for this preference was the fact that it is cheaper to send an SMS message than making a call. When using MXit the charges were even less. Other reasons reported for using the SMS instead of making calls were that it was less effort and quicker. In both the high and low loneliness groups, participants reported that using the SMS was faster than getting involved in a conversation with someone, especially if they only wanted to quickly find out something.

These results corresponded with the findings of Eldridge and Grinter (2001) who found that participants prefer SMS communication because they can avoid long, sometimes awkward telephone conversations, and the findings of Eldridge and Grinter (2001), Leung (2006) and Oksman and Turtiainen (2004) that indicated that participants preferred using the SMS because it offered them inexpensive options.

Quantity of SMS messages sent/received

The average number of SMS messages sent daily by the high loneliness group were 19,9 and 13,1 received. The average number of SMS messages sent by the low loneliness group was 32,5 per day and 34,6 received daily.

The high loneliness group thus reported fewer sent and received SMS messages daily in comparison to the low loneliness group, indicating a relationship between the quantity of SMS messages sent and received and the experience of loneliness. The high loneliness group reported that they sent more SMS messages than they received while the low loneliness group reported that the number of SMS messages sent and received was roughly the same.

The reason for the number of SMS messages sent and received daily, reported in question 3 and 8 in the self-compiled questionnaire, are explained by what both groups reported on question 14. The high loneliness group reported that the reasons for sending more SMS messages than they received were that they cared about others, missed others and enjoyed sending SMS messages. The low loneliness group reported that the number of SMS messages sent and received was the same because they sent an SMS message for each one received and visa versa.

No research regarding the quantity of SMS messages sent and received by high and low loneliness groups had been done before.

Week or weekend usage of the SMS

The high loneliness group reported that they sent and received more SMS messages over a weekend. The reasons for sending more SMS messages were because it was cheaper over weekends, they had more time, were bored and that they were with their friends during the week and had to keep in contact during the weekend. The reported reasons for receiving more SMS messages were because others had more time, others were seeking conversation and that there were things to find out and organise. The low loneliness group reported that they sent and received the same number of SMS messages regardless of the day in the week. This group reported that they had little need of staying in contact with their friends over weekend as they felt that they were constantly in contact. These findings indicate that there might be a relationship between the need to stay in contact with friends over the weekend and the experience of loneliness.

No research regarding the usage of SMS messages during the week compared to the weekend have been conducted yet. However, based on the respondents' answers it seems as if the need to stay in contact with friends was lower with the low loneliness group. It may be safe to assume that participants from the high loneliness group felt additional pressure to maintain friendships over the weekend when they are not in near constant contact.

To whom and from whom do you send/receive the most SMS messages?

Both groups reported that they sent and received most of their SMS messages from their friends followed by boyfriends/girlfriends. The reason for this may be that peers are the most influential group during adolescence (Rice, in Uruk & Demir, 2003).

Igarashi et al. (2005) stated that most people choose their known friends as partners with whom to exchange SMS messages. In contrary with the study by Igarashi et al. (2005), a study by Weilenmann and Larsson (in Nässla, 2001) regarding the use of cellphones by adolescents, indicated that they use the phone to get acquainted with other adolescents. The fact that peers become the primary group of the adolescents and co-opt the family, might explain the reason why most participants indicate their friends to be the people with whom SMS messages are exchanged the most (Hojat & Crandall, 1989; Uruk & Demir, 2003).

The findings of the current study correspond with the research findings of Igarashi et al. (2005).

Content of SMS messages

Participants in both the high and low loneliness group reported that the content of their SMS messages mostly evolved around friendship maintenance, maintenance of romantic relationships, as well as coordination of events. Participants in both the high and low loneliness groups additionally indicated the content of their SMS messages to be private or personnel.

Thurlow (Reid & Reid, 2004) indicated that only about one-third of SMS messages accomplished functional or practical goals – the remainder fulfilled a combination of friendship maintenance, romantic, and social functions associated with highly intimate and relational concerns. Cortini et al. (2004) also found that a reason for adolescents preference of SMS messages can be explained by the fact that they allow a more private and independent route of communication.

The reported content of the SMS messages according to the current study corresponded with the findings of the Thurlow study with regard to the goals of the SMS

messages, whilst the reported privacy of the SMS message sent and received, corresponded with the research results of Cortini et al.(2004).

Functional/practical arrangements and coordination of events

The same number of participants (6) in both the high and low loneliness groups reported to have send and received SMS messages with regards to arrangements for going to the gym, schoolwork, places to meet each other as well as reminding others of important events and to find out about matters of importance.

A study by Eldridge and Gunter (2001) reported that adolescents use SMS messages coordinate social events with both family and friends. This frequently occurs, for example, when they are in town and want to meet up with someone at a particular place. Some of the adolescents used the SMS to stay in contact with and coordinate activities with absent family members, although interchanges with friends and family were much more common.

The findings regarding the use of SMS messages in making arrangements and coordination of events is in line with the findings of the study by Eldridge and Gunter (2001).

Maintenance of friendship

There was no difference between the number of SMS messages sent for the maintenance of friendships in the two groups. These SMS messages involved the following: asking others about how they were doing, keeping others posted about happenings in their own lives, general conversations, gossip and encouraging SMS messages.

The most important use of cellphone communication by adolescents is the maintenance of friendships as well as the forming of new relationships (Oksman & Turtiainen, 2004; Reid & Reid, 2004). According to Leung (2006) adolescents presumably use SMS communication to exchange gossip and rumours, talk about their personal lives, do something when they are bored, find ways to connect and hang out, and chat about anything or nothing in particular.

The current findings link with the findings of the study by Leung (2006).

Maintenance of romantic relationships

Two participants in the high loneliness group and 6 participants in the low loneliness group reported that they sent and received most of their SMS messages to/from their romantic partner. They tell each other via SMS messages that they are thinking of each other and miss and love each other. They also make arrangements to see each other. The marked difference in the number of participants in the two groups is probably due to the difference indicated earlier between the two groups with regard to involvement in romantic relationships.

SMS communication unites friends and affords an opportunity to explore the potential of new relationships. Romantic relationships between adolescents frequently begin through an SMS messages. The human presentation of the self has been filtered out, and the communication device enables more control over the presentation of self and message content (Oksman & Turtiainen, 2004).

Private and personnel matters

In both the high and low loneliness groups, participants' responses to the question on what their SMS messages were about, that is was private and personal matters.

The fact that the cellphone are owned by the adolescent is significant, particularly in the family context, as adolescents often experience both the communication and its content as personal, outside the realm of parental control. Therefore, the cellphone is used to define boundaries and create space in relationship with friends and family (Oksman & Turtiainen, 2004).

The findings of the current study correspond with the findings Oksman and Turtiainen (2004) that indicate the significance of SMS messages as a private and personal way of communication.

Reported feelings associated with SMS's

Feelings regarding sending or receiving SMS's

In the high loneliness group the following feelings were reported after sending or receiving an SMS message: happiness, relief, excitement, importance, satisfaction and expectation, depression, anxiety and stress. In the low loneliness group most of the participants reported that they experienced no significant feelings after sending or receiving an SMS message. For example, several of these participants stated "I just feel normal". Thus, their responses differ in the sense that those of the high loneliness group are more inclined to internalise their responses than the low loneliness group. The responses with regard to these feelings, indicate that there might be a relationship between reported feelings accompanying the sending and receiving SMS messages and feelings of loneliness.

This internalisation may be the result of possible negative perceptions regarding social relations, amount of support received from friends and family, personality dispositions, frequency of social contact and so forth. These negative perceptions may result in feelings of rejection. This concurs with previous studies investigating contributing factors that may contribute to loneliness in adolescents such as when a person perceives social relations as deficient in some way, level of self-esteem, some personality dispositions, perceived amount of support received from friends and family, the frequency of social contact with others as well as number of conversations (Baron & Byrne, 2000; Jones & Hebb, 2003; Rokach, 2003; Uruk & Demir, 2003).

Feelings regarding no response to SMS's

The high loneliness group reported feelings of unimportance, sadness, loneliness, neglect and that others might be mad at them when receiving no response to a sent SMS message. This concurs with the above-mentioned finding in this study indicating that they tend to internalise their responses. In contrast, the low loneliness group reported that they felt angry, irritated, disappointed and unhappy when they did not receive a reply to an SMS message sent by them. These feelings seem to be directed to the situation and not

towards the participant. This might indicate that there is a relationship between feelings regarding no response to SMS messages sent and feelings of loneliness.

Igarashi et al.(2005) noted that SMS users tend to give an instant response to close friends. Leung (2006) also found that SMS users may feel pressure to respond immediately to questions from others once it becomes known that they are able to access messages. If an immediate response is not received, it will lead to feelings of rejection.

Importance of sending/receiving SMS's

Social support

The high loneliness group felt that it is important for them to send SMS messages because "some times you need a friend and then it is faster and easier to communicate your feeling via SMS". It is also a way to show others that they care about them. As for the low loneliness group they reported that sending SMS messages is important to them too, but the reason being to stay in contact with other. This finding might shed light on why the high loneliness group needed to stay in touch with friends over the weekend by sending more SMS messages over the weekend. It also seems as if constant contact is more important for the low loneliness group. The reason for this tendency might be that the high loneliness group try to compensate for their possible feelings of rejection, as they try to stay in constant contact with other via the SMS. These feelings might be the cause of dissatisfaction with relationships, low self-esteem, personality dispositions, frequency of social contact with others, time spent with others and number of conversations. For the low loneliness group this is not necessary and the SMS only provides a way to stay in contact with others. This might indicate that there is a relationship between the reasons for sending SMS messages and feelings of loneliness.

Both the high and low loneliness groups reported that receiving SMS messages was important to them. Others can express that they cared about them and this made them feel loved and important. Receiving an SMS message was also a way of knowing that someone is thinking about them.

Cobb (in Hojat & Crandell, 1989) suggested that social support refers to help, guidance, comfort and information one received from one's social network including family and friends.

Despite its obvious relevance to the phenomenon of loneliness, few studies have been reported which compare loneliness and measures of social support. Loneliness was found to be inversely related to network size, interconnectedness of the network and the frequency with which specific supportive behaviours occurred (Levin & Stokes, in Hojat & Crandell, 1989). On the other hand loneliness has been found to be negatively related to both quantity of social support and the degree of satisfaction with supportive others (Sarason, Sarason & Shearin, in Hojat & Crandell, 1989).

The researcher did not investigate the extent and the amount of satisfaction with supportive other, and therefore it is not obvious whether the result of the current study correspond with literature. However, the feeling that someone is always there, that people are perpetually connected may be a big attraction to sending SMS messages as it facilitates interconnectedness and the frequency that support can take place (Reid & Reid, 2004).

Security

The majority of the participants in both the high and low loneliness group indicated that an important aspect of the cellphone was that calls could be made from nearly any place in case of an emergency. A participant in the high loneliness group mentioned that "if I am in distress it is easier to get help via the cellphone". A participant from the low loneliness group reported that he used an SMS message to let his father know where he was.

SMS communication has two special characteristics: "anytime" and "anywhere" availability. A switched-on cellphone device is able to receive or send a message at any time, regardless of whether a voice or data call is in progress. Because SMS messages are tied to a personal cellphone device, they inherit the benefits of "anywhere" availability (Xu et al., 2003). Nässla (2001), and Oksman and Turtiainen (2004) suggested that the SMS communication provided the opportunity for direct

communication that would give the family members direct access to each other and this perpetuated a feeling of safety feeling and the ability to monitor the well-being of each other.

In this respect, i.e. reported feelings regarding security and SMS messages, the results of the current study correspond with the research results of Nässla (2001), as well as Xu et al. (2003).

Initiating and developing relationships with others

The high loneliness group reported that SMS messages did not only intensify their existing relationships with friends, but also helped them develop new relationships. These participants felt that SMS messages enabled them to be more open regarding their feelings, as they were less shy. To these participants, sending an SMS message was more likely to help them develop new relationships and to influence, in a positive way, their relationships with friends. In the low loneliness group this was not the case – they preferred face-to-face communication for the initiation of new friendship, but used SMS messages in the maintenance of friendships. In view of the above-mentioned findings it might be assumed that there is a relationship between the initiating of friendships via cellphone and feelings of loneliness.

Some adolescents are capable of establishing new relations very easily, whereas others may experience difficulty that results in feelings of loneliness (Unik & Demir, 2003). To many lonely people, a central problem is how to develop new relationship – how to find a confidant, make new friends, fall in love, and so forth. The successful initiation of relationships may be hampered by poor social skills, social anxiety and self-defeating perceptions of themselves and their interaction. Among the relevant social skills may be self-presentation, social assertiveness and communications skills (De Gouveia, 1984).

With regard to the low loneliness participants that use SMS messages for the maintenance of friendships rather than initiation thereof, a study by Igarashi et al. (2005) indicated that participants rated friends with whom they communicated face-to-face and via SMS more intimate than those with whom they communicated solely face-to-face. The participants in their study also reported that they make new relationships with face-

to-face communication at an early stage, and then used SMS communication to increase their contact when they were not able to see the other person.

In view of the results pertaining to the high loneliness group in the present study, the question can be asked whether SMS communication compensates for poor social skills, social anxiety and sensitivity towards the attitudes of others. With regard to the low loneliness group, the findings of the present study correspond with the study by Igarashi et al.(2005).

Feelings with regard to not receiving an SMS message from a friend for a long time

The high loneliness group reported that they felt left out when they do not receive an SMS messages from a friend for a long time. The reasons for this feeling were that they felt forgotten, that others did not care about them anymore and that they might lose contact with that person. The low loneliness group reported that they did not experience the feeling of being left out if they had not received an SMS message from a friend for a long time. One of the participants in the low loneliness group reported that if he had not received a message from a friend for a long time it might be that the friend did not have money on his cellphone. This might indicate that there is a relationship between feelings regarding not receiving SMS message from a friend for a long time and experiencing feelings of loneliness.

A factor that has been extensively investigated with regard to loneliness is the impact of engaging in conversation with others. The most frequently tested hypothesis is the idea that loneliness is perpetuated and perhaps initiated by rejection from others. Such rejection is believed to occur because individuals vulnerable to loneliness have inadequate social skill or is in some way marginalized or stigmatised (Jones & H ebb, 2003).

As was the case with regard to no reponse to a message, the high loneliness group internalised the meaning of not receiving a message from a friend for a long time.

SMS communication vs. Face-to-face conversations

The high loneliness group reported that SMS communication was an easier way to keep in contact with others. They also prefer this medium because they feel that it was a “more personal way of expressing your feelings” and “a way of dealing with things that you can’t tell someone to his face”. One participant reported that she found this medium easier because she cried easily. The low loneliness group preferred face-to-face communication and say that it is a more open and honest way of communicating. This indicates a possible relationship between SMS communication rather than face-to-face conversations and feelings of loneliness.

According to Leung (2006), SMS communication might be particularly appealing to people who are more apprehensive about face-to-face communications and who find real life communication with family and friends less rewarding, because they may feel more confident when using the SMS for interpersonal encounters. The SMS communication seem to be providing the right distance for peer communication, especially in situations where they do not want to confront (Fraunholz & Unnithan, 2003). As a consequence, shy individuals report experiencing lower levels of shyness and less inhibition interacting with communication partners when using the SMS compared to face to face (Roberts, et al., in Byrne, 2004).

The findings of the current study correspond with the studies by Fraunholz and Unnithan (2003), Leung (2006) and Roberts et al. (2004).

Reaching out to others

The high loneliness group reported that they found it easier to reach out to others via SMS messages. The reported reasons for this were: it was not necessary to get involved in a long conversation, they could think before they started typing the SMS message which prevented the awkwardness in a conversation when you have nothing to say, they found it easier because they were shy and SMS messages were easy to send and convenient. The low loneliness group reported that they preferred face-to-face conversations or making a call when reaching out to others. These findings confirm the findings that there might be a relationship between SMS communication vs face-to-face conversations, as mentioned in the previous paragraph.

These results seem to support previous results regarding SMS communication and face-to-face communication. In the study by Reid and Reid (2004) they found that the high loneliness group committed more time and effort to the process of message composition, writing longer messages and editing them more carefully, which correspond with what the high loneliness group of this study reported.

The importance of the cellphone in their lives

In response to the question whether participants felt alone without their cellphone, the participants indicated the following: 11 participants of the high loneliness group and 9 participants in the low loneliness group reported that they feel alone without their cellphones.

It would appear that both the high and low loneliness group experienced feelings of loneliness or aloneness when they did not have their cellphone with them. This is an indication of the extend of the influence of the cellphone on the lives of the participants. One of the participants of the high loneliness group reported the following: "My cellphone is a personal item that is totally my own. If it would get stolen it would be the same as someone robbing our house. Without my cellphone I feel naked, helpless and dependent on others."

Seven participants in the high loneliness group and 10 participants in the low loneliness group reported that their cellphone were an important part of who they were. The researcher did not ask the participants to motivate their answer. This might indicate that there is a relationship between the participants' feelings that the cellphone is an important part of who they are and feelings of loneliness.

Adolescents frequently view the cellphone as symbolically representing of the community to which they belong, be it a group of friends or people united by a common hobby. It is also common for young people to attribute human qualities to the phone and to think of it as having an "electronic life" through which it unites circles of friends (Oksman & Turtiainen, 2004). Leung (2006) also found that cellphones are used by adolescents to look stylish and fashionable and therefore might be a status symbol.

Cellphone as a tool during the experience of loneliness

Both the high and low loneliness groups reported that they used the following functions on their cellphone when they feel lonely: SMS messages, making calls, games, to read old SMS messages, listening to music/radio and look at photos taken previously. However, the high loneliness group also added that they reached out to others, communicated with someone that can “help” to comfort them and to get attention from others via the cellphone.

Previous research indicates that the cellphone is used to fill the empty moments of everyday life; sending SMS messages and playing games helps adolescents to pass their breaks at school and make waiting at the bus stop a little less tedious (Oksman & Turtiainen, 2004). According to Reid and Reid (2004) the use of the cellphone, especially sending an SMS, seems to facilitate the expression of some people’s real feelings.

This research finding thus correlates with the findings of Oksman and Turtiainen (2004). With regard to the “outreach” of the high loneliness group during times of feeling lonely, it seems as if they feel comfortable to use the cellphone to express their feelings of loneliness.

Other remarks

No participants made any other remarks regarding the use of their cellphone.

CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

With regard to the gathering of the data of this research, the researcher experienced that the commitment of the principals and teachers at the participatory schools, especially the high school in Rustenburg, was a major contributing factor to the success of this study resulting in the data gathering process being a lot less complicated than was expected.

Furthermore, the translation of the scales was done expediently and appropriately subsequently adding to the time efficient manner in which the participants conducted this

study. It also minimised confusion regarding the interpretation of the questions. Regarding the content of the self-compiled questionnaire, the researcher believed that considerable information was gathered in this way, but is of the opinion that it would have been even more effective to include a self-report section requesting the participants to explain why they responded in the way they did.

When analysing the participants' answers the impression was created that they enjoyed completing the questionnaires, possibly suggesting that their answers were honest and a true reflection of their thoughts, feelings and behaviour when using SMS communication.

The following relationships, with regard to the experience of loneliness, were found in the current study: gender; number of siblings; involvement in a romantic relationship; amount of money spent on bill (financial constraints); quantity of SMS messages sent or received; need to stay in contact with friends over the weekend; reason for sending SMS messages; feelings regarding sending or receiving SMS messages; feelings regarding no response to SMS messages; feelings with regard to not receiving SMS messages for a long time; initiating of friendships via cellphone, and SMS communication rather than face-to-face communication.

With regard to the time of the week each group preferred to make use of SMS communication, it became apparent that the high loneliness group sent and received more SMS messages during the weekend while the low loneliness group reported that the time of week did not play a role in the number of SMS messages sent and received. A possible reason for this difference could be that isolation could be experienced by the high loneliness group. These findings are in line with the findings of Jones and Hebb (2003) and Meyer Gaev (1976) that stated that this feeling was usually most intense in adolescence. However, Hojat and Crandall (1989) stated that loneliness and isolation at the adolescent stage could be overwhelming, unless there were some special compensating factors. In this case, communication with friends over weekend via the SMS, might be a compensating factor for the high loneliness group.

Relationships were found between the feelings regarding sending and receiving SMS messages, no response to SMS messages and not receiving SMS messages from a friend for a long time. All these findings confirmed that the high loneliness group might be

more inclined than the low loneliness group to internalise feelings regarding the above-mentioned situations.

It might be hypothesised that, for the high loneliness group, SMS communication is a way to develop new relationships and to maintain existing relationships, while the low loneliness group preferred face-to-face communication for the initiation of new relationships and use SMS communication for the maintenance thereof. The high loneliness group reported that they found it easier to express their feelings and communicate things that they felt apprehensive of talking about face-to-face. When reaching out to others, the high loneliness group reported that they preferred SMS communication because then they could think before they type the message, thus preventing the awkwardness of conversations when feeling you have nothing to say. These findings could be explained by the certain personality dispositions, such as shyness, introversion and self-consciousness, that are directly related to loneliness (Baron & Byrne, 2000; Jones & Hebb, 2003; Ruben & Mills, in Richaud de Minzi & Sacchi, 2004; Rokach, 2003).

The low loneliness group preferred face-to-face communication because it was considered a more open and honest way of communicating. They also preferred face-to-face conversations when reaching out to others. These findings might also explain why the participants of the high loneliness group used SMS communication more for a tool to maintain friendships, while the low loneliness group used SMS communication rather to stay in constant contact with others. The hypothesis can be made that the high loneliness group found it easier to express their real feelings via SMS messages. Overall, the findings of the current study seem to correspond with the finding of the Reid and Reid study in the way that communication via the SMS allows some people to translate their loneliness into productive relationships, whilst for others the cellphone does not afford the same opportunities.

As no previous research, regarding the use of SMS communication and loneliness, has yet been initiated in the South African context, a wide field of potential additional research exists. The experience of different cultures, age groups and social groups with regard to SMS communication and loneliness could be explored. Different personality traits in the two groups could also be explored because these might give more insight into

the findings of the current study. According to the researcher, the design and evaluation of programmes when cellphone use are implemented to elicit more positive feelings towards life, is feasible.

It is important to take into consideration that the sample in the current study predominantly consisted of Afrikaans speaking South African learners between the ages of 16 and 18 years. The findings should therefore not be supposed to be true for persons of other age, culture and social groups. Consideration should also be given to the fact that the Grade 12 learners were in the process of commencing their final examinations.

With regards to limitations in the current study, it should be taken into consideration that the researcher did not investigate the scope of the social support network. A recommendation for further studies would be to explore the amount of names on the contact list of the participants' cellphone. This might give an indication of the network's scope and range.

In conclusion, the researcher believes that the manner in which this research was conducted, contributed to give insight into the relationship between the use of SMS communication and perceived feelings of loneliness of the adolescent participants in this study. A possible explanation for the findings could be described by the following: "technology for its own sake is never as powerful a tool as technology that makes sense in the everyday life of a user" (Crabtree, Nathan & Roberts, in Reid & Reid, 2004).

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Appendix A

QUESTIONNAIRE: CELLPHONE USAGE

PLEASE ANSWER THE FOLLOWING QUESTIONS. THERE ARE NO RIGHT OR WRONG ANSWERS:

Biographical information:

Initials and surname: _____

Age: _____

Grade: _____

Home language: _____

Gender: _____ Male/Female (Underline your answer)

Are you a hostel resident? Yes/No (Underline your answer)

Are your parents divorced? Yes/No (Underline your answer)

If yes, with which parent are you living? _____

How many brothers or sisters do you have? _____ brothers
_____ sisters

How many brothers or sisters do you live with? _____

Do you have a boyfriend/girlfriend? _____

Practical questions regarding your cellphone:

Type of cellphone: _____

For how long have you had your own cellphone? _____

Contract/Prepaid _____

Monthly amount spent on cellphone account? _____

Questions regarding the use of your cellphone:

1. I use my cellphone for _____ (Please rank in order of importance from most to least important)

- | | |
|----------|-----------|
| 1. _____ | 8. _____ |
| 2. _____ | 9. _____ |
| 3. _____ | 10. _____ |
| 4. _____ | 11. _____ |
| 5. _____ | 12. _____ |
| 6. _____ | 13. _____ |
| 7. _____ | 14. _____ |

2. What do you mostly use your cellphone for – sending SMS's or making calls?

What are the reasons for this?

3. Approximately how many SMS's do you send daily? _____

4. Do you send more SMS's during the week/weekend? Reasons why?

5. To whom do you send the most SMS's – parents/friends/other (specify in case of others)

6. What are these SMS's about?

7. How do you feel if you send an SMS?

8. How many SMS's do you receive daily?

9. Do you receive more or less SMS's during the weekend? Why do you think this is the case?

10. From whom do you receive the most SMS's – parents/friends/others (specify in case of others)

11. What are these SMS's about?

12. How do you feel if you receive an SMS?

13. How do you feel when you do not get a response to an SMS?

14. Do you mostly send or receive SMS's? Why do you think this is the case?

15. Is sending SMS's important to you? Motivate your answer.

16. Is receiving SMS's important to you? Motivate your answer.

17. What role do SMS's play in your making friends?

18. What role do SMS's play in your present friendships?

19. Do you feel left out if you don't receive an SMS from a friend for a long time? If so, why?

20. Are there things you would rather tell a friend via SMS than face to face? If so, which things and why?

21. Do you find it easier to reach out to others via an SMS? If so, why?

22. I feel alone if I don't have my cellphone with me. True/False (Underline)

23. My cellphone is an important part of who I am. True/False (Underline)

24. When I feel lonely I use my cellphone for -

25. Any other remarks regarding your cellphone that you think are important?

Appendix B

VRAELYS: SELFOONGEBRUIK

VUL ASSEBLIEF DIE VOLGENDE VRAE EERLIK IN. DAAR IS GEEN REGTE OF VERKEERDE ANTWOORDE NIE:

Biografiese inligting:

Ouderdom: _____
Graad: _____
Huistaal: _____
Geslag: Manlik/Vroulik (Onderstreep jou antwoord)
Is jy in die koshuis? Ja/Nee (Onderstreep jou antwoord)
Is jou ouers geskei? Ja/Nee (Onderstreep jou antwoord)
Indien wel, by watter ouer bly jy? _____
Hoeveel broers en suster het jy? _____ broers
_____ susters

Hoeveel broers en susters woon saam met jou? _____

Het jy 'n vaste meisie/kêrel m.a.w. sleep jy? _____

Praktiese vrae oor jou selfoon:

Tipe selfoon: _____
Hoe lank het jy al jou eie selfoon? _____
Kontrak/ Voorafbetaal (Prepaid) _____
Hoe hoog is die maandelikse rekening van jou selfoon? _____

Vrae oor die gebruik van jou selfoon:

1. Ek gebruik my selfoon vir _____ (plaas asseblief in volgorde van belangrikheid van belangrikste tot minder belangrikste):

- | | |
|-----------|-----------|
| 8. _____ | 8. _____ |
| 9. _____ | 9. _____ |
| 10. _____ | 10. _____ |
| 11. _____ | 11. _____ |
| 12. _____ | 12. _____ |
| 13. _____ | 13. _____ |
| 14. _____ | 14. _____ |

2. Waarvoor gebruik jy jou selfoon die meeste – is dit vir die stuur van SMS'e of die maak van oproepe? Wat is die rede hiervoor?

3. Ongeveer hoeveel SMS'e stuur jy per dag?

4. Stuur jy meer SMS'e gedurende die week/naweek? Redes daarvoor?

5. Na wie stuur jy die meeste SMS'e? ouers/vriende/ander (spesifiseer in geval van ander)

6. Waaroor handel die SMS'e?

7. Hoe voel jy as jy 'n SMS stuur?

8. Ongeveer hoeveel SMS'e ontvang jy per dag?

9. Ontvang jy meer of minder SMS'e gedurende die naweek? Waarom dink jy dit is die geval?

10. Van wie ontvang jy die meeste SMS'e? ouers/vriende/ander (spesifiseer in geval van ander)

11. Waaroor handel die SMS'e?

12. Hoe voel jy as jy 'n SMS ontvang?

13. Hoe voel jy as jy nie 'n antwoord op 'n SMS kry nie?

14. Stuur jy of ontvang jy meestal SMS'e? Hoekom dink jy is dit die geval?

15. Is dit vir jou belangrik om SMS'e te stuur? Motiveer jou antwoord.

16. Is dit vir jou belangrik om SMS'e te ontvang? Motiveer jou antwoord.

17. Watter rol speel SMS'e vir jou in die maak van vriende?

18. Watter rol speel SMS'e in jou huidige vriendskappe?

19. Voel jy uitgesluit van 'n vriend/vriendin indien jy lank nie 'n SMS van hulle ontvang het nie? Indien wel, waarom is dit so?

20. Is daar dinge wat jy eerder via 'n SMS vir 'n vriend/vriendin sal sê as om dit van aangesig-tot-aangesig te doen? Indien wel, watter dinge en waarom?

21. Vind jy dit makliker om na ander uit te reik via 'n SMS? Indien wel, waarom?

22. Ek voel alleen as ek nie my selfoon by my het nie. Waar/Vals (Onderstreep)

23. My selfoon is 'n belangrike deel van wie ek is. Waar/Vals (Onderstreep)

24. Wanneer ek alleen voel, gebruik ek my selfoon vir -

25. Enige ander opmerkings rakende die gebruik van jou selfoon wat jy dink belangrik is:
