

INTERNET USE AND ROMANTIC RELATIONSHIP SATISFACTION

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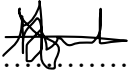
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I, Nicole Grundlingh, hereby declare that the treatise for my degree Master of Arts in Clinical Psychology is my own work, except for quotations, which have been duly acknowledged. It has not previously been submitted for assessment or completion of any postgraduate qualification to another University or for another qualification.

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Abstract

In the twenty-first century the internet has become a pervasive part of individuals' lives and their relationships, changing the way individuals connect, develop and maintain their romantic relationships. The way in which couples use the internet can have a significant impact on their relationship satisfaction, which is often a predictor of the length and success of their relationship. Although the internet is valued for many features, the nature of the internet creates the risk for some individuals to become addicted to the medium which is associated with psychological and relational difficulties. The present study aimed to explore the impact of problematic internet use on individuals' satisfaction with their offline intimate relationships. A quantitative, non-experimental, cross-sectional, research design was utilised, where participants from Nelson Mandela University completed an online survey ($N=388$). A non-probability, purposive sampling method was employed with an inclusion criteria which required participants to have daily internet access and to be in a committed romantic relationship. The study analysed four primary variables, namely, online preoccupation, adverse effects of online behaviour, social interactions and general relationship satisfaction. The results of the study were discussed through the lens of the Couple and Family Technology (CFT) framework to explain the processes that underlie the relationship between these variables and indicated that problematic internet use and relationship satisfaction is negatively related. The present study contributes to the body of literature and offers indications for future, in-depth research studies within the field of cyberpsychology.

Keywords: Couple and Family Technology framework, problematic internet use, relationship satisfaction, romantic relationships

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Chapter 1

Preamble

I have 422 friends, yet I am lonely.
I speak to all of them every day, yet none of them really know me.
The problem I have sits in the spaces between,
looking into their eyes, or at a name on a screen.
I took a step back, and opened my eyes,
I looked around,
and then realised that this media we call social is anything but
when we open our computers, and it's our doors we shut.
All this technology we have, it's just an illusion,
of community, companionship, a sense of inclusion
yet when you step away from this device of delusion,
you awaken to see, a world of confusion.
A world of self-interest, self-image, self-promotion,
where we share all our best bits, but leave out the emotion.
We are at our most happy with an experience we share,
but is it the same if no one is there.
We edit and exaggerate, we crave adulation,
we pretend we don't notice the social isolation.
So when you're in public, and you start to feel alone,
put your hands behind your head, and step away from your phone.
We don't need to stare at our menu, or at our contact list,
just talk to one another, and learn to co-exist.
When we're too busy looking down, we don't see the chances we miss.
We have a finite existence, a set number of days.
Why waste all our time getting caught in the net,
as when the end comes, nothing's worse than regret.
So look up from your phone, shut down that display,
Just one real connection is all it can take,
to show you the difference that being there can make.

- Gary Turk (2014)

Introduction

Context of the Research

The rapid growth of internet use has been observed around the world as reflected by the 9% increase of global active internet users in 2019. According to the Global Digital 2019 reports, there are 4.39 billion internet users, reflecting an increase of 366 million users since January 2018 (Kemp, 2019). In South Africa, it was found that 54% of the population, just over 31 million individuals, are active internet users (Kemp, 2019). In the past year, more than 5 million South Africans joined social networking sites of which Facebook was the biggest platform, with a penetration rate of 53%. This is followed by LinkedIn (18%), Instagram (9%), Twitter (4%), and Snapchat (3%) (Kemp, 2019).

The exponential growth of internet users can be attributed to the convenience offered by the medium to fulfil human needs including communication, information acquisition, and entertainment (Kang & Munoz, 2014; Sahin, Balta & Ercan, 2010). The internet's ability to transform education, business, the economy, and culture can be observed by the changes in interpersonal interactions, relations to time, expectations of speed and convenience, work culture and even the use of language and the vocabulary used in daily conversation. Everything from shopping, banking, family interaction and dating, business meetings and entertainment all take place in cyberspace, whereas before the mid-1990s all these activities took place more commonly in the physical world. The advancements in technology have enabled individuals to do things that were previously unimaginable without the confinements of time or geographical location.

Although the positive aspects of the internet cannot be denied, how and how often individuals have come to use the medium has raised concerns amongst researchers and health care practitioners across the globe (Caplan 2003; Chakraborty, Basu, & Vijaya Kumar, 2010; Schade, Sandberg, Bean, & Busby, 2013; Shaw & Black, 2008; Young, 1999, 2004).

Technology has become so infused into daily living that for many individuals their smartphone is the first thing they touch when they wake up, and the last thing they look at before going to sleep (Caplan & High, 2006; Kuss, Shorter, van Rooij, Griffiths, & Schoenmakers, 2013). The ease, accessibility, and affordability of the internet generate a highly reinforcing medium that grants immediate access to gratifying activities, thereby creating the risk for individuals to become addicted to its use (Hertlein, 2012; Hertlein & Blumer, 2014; Tokunaga, 2015; Young, 1999). The maladaptive use of the internet also referred to as problematic internet use, can lead to symptoms associated with more traditional addictions such as online preoccupation, tolerance, cravings, and withdrawal (Thatcher & Goolam, 2005a). Symptoms can also include a preference for online social interaction and relapse that involves excessive use of chat rooms, social networking or online gaming (Caplan & High, 2006; Deatherage, Servaty-Seib, & Aksoz, 2014; Park, Hong, Park, Ha, & Yoo, 2012).

A recent survey revealed that approximately 96% of households in the United Kingdom (UK) owns a smartphone, and the average user touches their phone over 2000 times a day (Henshaw, 2018). The survey indicated that 53% of these smartphone users reported anxiety when separated from their devices (Henshaw, 2019). Another survey conducted in the UK with 500 participants between the ages of 18 and 34 revealed that 10% of the sample would sacrifice their pinky finger, and 23% of participants would sacrifice one of their five senses rather than give up their smartphone (Martin, 2018).

In China, 57.7% of the population are active internet users with 98% of those users accessing the internet from their smartphones (McCarthy, 2018). A recent study revealed that approximately 10% of internet users in China struggle with internet addiction which is higher than the worldwide average of 6% (Shao et al., 2018). According to McCarthy (2018), China considers internet addiction as a significant public health threat and therefore supports

education, research, and treatment for the condition. In addition to the numerous digital detox and rehabilitation centres, a city in northern China has introduced pedestrian lanes to prevent smartphone-related accidents for users who struggle with internet addiction (May, 2018).

In South Africa, a mobile marketing survey revealed that South Africans are also struggling with problematic internet use (Malinga, 2016). The survey was conducted on a sample of 2000 participants from all age groups, races and professional backgrounds and was considered to be a representative sample of the online population in South Africa (Malinga, 2016). The survey revealed that 67% of respondents reported the urge to use the internet daily, while 64% reported that they are unable to go a day without using it. Furthermore, 50% of respondents reported that the internet has interfered with their daily lives, and 39% reported that they connect to the internet when they are stressed, anxious or depressed in order to make themselves feel better (Malinga, 2016).

With the internet's ability to transform virtually every area of individuals' lives it is not surprising that it has the potential to change the dynamics of intimate relationships. Couples are connected in simpler, more accessible and immediate ways than ever before (Campbell & Murray, 2015). However, when individuals use the internet for individual fulfilment instead of connecting with their partners it creates new obstacles and challenges for the couple to overcome. Within romantic relationships, problematic internet use has been associated with increased conflict, jealousy, online infidelity, social isolation, and loneliness (Kerkhof, Finkenauer, & Muusses, 2011; Kraut et al., 1998; Puri & Sharma, 2016; Young, 2009). For many couples, it has become 'normal' for a conversation, meal or romantic moment to be interrupted by mobile alerts and notifications (McDaniel & Coyne, 2016). According to Hertlein, Nakamura, Arguello and Langin (2017), 42% of individuals aged 18–29 reported their partner was distracted by their smartphone when they were spending quality time together. In addition, a recent study conducted by Dwyera, Kushlevb, and Dunna (2017)

with an American sample of 1137 students revealed that 10% of the participants admitted to checking their smartphone during sexual intercourse.

Another way in which the internet changing the context for couples' sexual experiences is the increased access to pornography (Maas, Vasilenko & Willoughby, 2018). Partners of frequent online pornography users feel betrayed, disrespected, and less sexually desirable, which decreases their commitment and intimacy within their romantic relationship (Campbell & Murray, 2015; Murray & Campbell, 2015). Furthermore, social networking and online dating sites introduce additional challenges to offline romantic relationships as it exposes individuals to other potential partners and enhances their awareness that they have multiple options available at their fingertips (Campbell & Murray, 2015; Settanni & Marengo, 2015; Sprecher, 2009). As the internet becomes more prevalent in everyday life and relationships, the challenges associated with its use increases, and couples are faced with the task to overcome and navigate these challenges to ensure the survival of their relationship. The central aim of this study was to explore the impact of problematic internet use on individuals' satisfaction with their offline intimate relationships. To achieve the research aim, the relationship between a) relationship satisfaction, b) problematic internet use and its three subconstructs, namely c) online preoccupation, b) social interaction, and d) adverse effects of online behaviour, were explored.

Problem Statement and Rationale

The capacity to develop and maintain healthy interpersonal relationships is fundamental for human development, health and well-being (Paat, 2013; Pope, 2013). For many individuals, romantic relationships are the most meaningful aspects of their lives, providing them with a deep sense of fulfilment (Pope, 2013). With the internet becoming a pervasive part of individuals' lives, the ways individuals connect, develop and maintain romantic relationships has changed significantly (Campbell & Murray, 2015, Jin & Peña, 2010,

Murray & Campbell, 2015). The way in which individuals use the internet can have a significant impact on their relationship satisfaction, which has important individual and couple outcomes, including physical and mental health, work productivity, divorce rates, and overall life satisfaction (Hertlein, 2012; Hertlein & Blumer, 2014; Schade et al., 2013; Vajda, 2015). Therefore, it has become increasingly important for scholars to explore and describe the impact of technology on romantic relationships (Facio & Resett, 2013; Hertlein, 2012).

Although romantic relationships have been extensively studied from many perspectives, yet research regarding the various implications of internet use on couples' romantic relationships remains limited (Kuss et al., 2013; Tokunaga, 2012). The majority of research studies have focused on online infidelity, with researchers having paid minimal attention to the possible precipitating factors and how individuals experience the impact of technology within their intimate relationships (Hertlein & Webster, 2008; Kerkhof et al., 2011).

Within the South African context, there is surprisingly little research that has been conducted on internet use, problematic internet use or the effects of technology on intimate relationships, despite the ever increasing number of internet users (Kuss & Lopez- Fernandez, 2016; Thatcher & Goolam, 2005a; Tokunaga, 2012). To the researcher's knowledge, there have not been any research studies published that incorporate all aspects of problematic internet use and its impact on the quality of romantic relationships, within a South African context. Therefore, the present study set out to explore the impact of problematic internet use on individuals' satisfaction with their offline intimate relationships. The relationship between problematic internet use and its three subconstructs, namely online preoccupation, social interaction, the adverse effects of online behaviour and relationship satisfaction will be explored. This study aims to explore a relatively unstudied area, thereby contributing to the literature and providing a foundation for future research hypotheses.

Outline of Chapters

The structure of the remainder of the treatise is as follows:

Chapter Two provides an overview of the Couple and Family Technology (CFT) framework, with a focus on romantic relationships. Each component of the model derived from the family ecology, the structural-functional, and the interaction-constructionist perspective will be discussed. The ecological factors associated with the internet that inspires change in the relational system are identified and discussed. Thereafter, an overview of the resulting changes in relational structures such as relational rules, roles, and boundaries as well as the changes in relationship processes such as relationship initiation, maintenance, and dissolution will be discussed. The chapter concludes with a summary of the multi-theoretical model and its applicability to the current research study.

Chapter Three provides a broad overview of the literature relating to romantic relationships and internet use. The chapter highlights different theories and variables relating to relationship satisfaction and how relationships have evolved in the digital age. This is followed by an overview of problematic internet use, the various subtypes and the manifestation thereof with a specific focus on online preoccupation, online social interactions and the adverse effects related to internet use. Throughout the chapter, the existing literature on the impact of internet use upon the quality of romantic relationships is highlighted.

Chapter Four describes the research methodology utilised in the current study. The rationale, research aim and research objectives of the current study are provided. Thereafter, the research design, research procedure, research measures, and the participants and sampling procedure utilised in this study is described. This is followed by a description of the data analysis procedure. The chapter is concluded with a description of ethical principles followed by the researcher while conducting the current study.

Chapter Five presents the results of the study as obtained from the data analysis. Firstly,

the preliminary data analysis is presented which includes the reliability of the questionnaire used and a description of the research participants. Thereafter, the results of the main analysis are presented and discussed in terms of the CFT framework to describe the underlying processes of the relationship between the hypothesised variables. Throughout this chapter, reference is made to the relevant literature that explores the impact of internet use on the quality of romantic relationships.

Chapter Six concludes the present study. The study's strengths and limitations are discussed followed by the recommendations for future research in the field. Thereafter, a conclusion based on the literature, theoretical framework, and research findings is provided.

The next chapter will present the theoretical framework and the relevant literature that the researcher consulted to facilitate a comprehensive understanding of the topic under study.

Chapter 2

Theoretical Framework

Technology is seductive when what it offers meets our human vulnerabilities. And as it turns out, we are very vulnerable indeed. We are lonely but fearful of intimacy. Digital connections and the sociable robot may offer the illusion of companionship without the demands of friendship. Our networked life allows us to hide from each other, even as we are tethered to each other. (Turkle, 2011, p. 1).

Introduction

In modern society intimate relationships are being fostered and challenged by developing communication technologies (Sprecher, 2009; Stewart, Dainton, & Goodboy, 2014). Many couples are incorporating the internet into their daily interactions with each other, changing the traditional dynamics within the couple system (Campbell & Murray, 2015, Jin & Peña, 2010, Murray & Campbell, 2015). The influence of the internet upon interpersonal relationships is a relatively new area as its usage has flourished in recent years (Caplan & High, 2006; Thatcher & Goolam, 2005b). Despite the prevalence of emerging technology and its impact on interpersonal relationships, the theoretical explanations for online behaviour often have limited application to the context of romantic relationships (Hertlein, 2012; Hertlein & Blumer, 2014).

The aim of this chapter is to provide an overview of a multi-theoretical model, the Couple and Family Technology (CFT) Framework, through which couple and family interactions around technology can be viewed. The framework was introduced by Hertlein (2012) and is an inclusive approach to understand the impact of technology use on the couple and family system (Hertlein & Blumer, 2014). Firstly, a general overview of the model will be provided. Thereafter, each component of the model, as well as the key concepts of each

component, will be discussed. The chapter concludes with a summary of the multi-theoretical model and its applicability to the current research study.

The Couple and Family Technology (CFT) Framework

The Couple and Family Technology (CFT) Framework is a multi-theoretical model that describes the process of how technologies are influencing couple and family functioning. The aim of the framework is to help therapists maintain a systemic focus when conceptualising and treating couples who struggle with issues related to internet use such as internet addiction, online infidelity, and online gaming (Hertlein, 2012; Hertlein & Blumer, 2014). The framework is based on the integration of three broad perspectives in family science, namely, the family ecology perspective, the structural-functional perspective, and the interaction-constructionist perspective.

The family ecology perspective identifies specific elements within the environment that inspires change in the relational system. In the current model, the elements that lead to change in family function associated with technology use are the properties of the internet. Hertlein (2012) has identified seven elements which are referred to as the seven A's (accessibility, acceptability, affordability, anonymity, approximation, ambiguity and accommodation) which inspires changes in the relational system's structure and processes (see Figure 2.1). Changes in relational structures refer to shifts in relational rules, roles, and boundaries, which according to the structural-functional perspective determines the overall functioning of the system. Changes to the relationship process refer to the shifts in relationship initiation, relationship maintenance that involves the development of intimacy and commitment, and relationship dissolution. These changes can be conceptualised through the lens of the interaction-constructionist perspective. This perspective focuses on how communication, gestures and rituals can develop relationships between family members, which forms the family identity. The influences of the ecological elements that underscores

changes in the structure and process of relationships are multidirectional (see Figure 2.1). In other words, the shifts in relationship structures can lead to changes in relationship processes and changes to processes can subsequently lead to changes in structure.

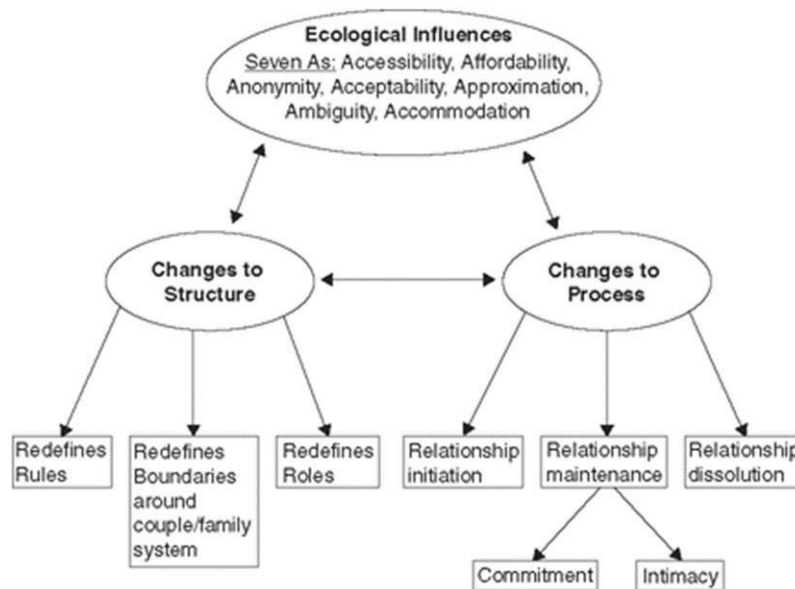


Figure 2.1. The CFT framework. Reprinted from *The Couple and Family Technology Framework: Intimate Relationships in a Digital Age*, by K.M Hertlein and L.C.Blumer, 2014, New York, NY: Routledge.

A strength of Hertlein's model is its focus on diversity (Hertlein, 2012). The model does not identify what the appropriate relationship structure or processes are as it takes into account contextual factors of relationship roles, rules, boundaries, intimacy, commitment and other relationship dynamics. Although the framework is broad enough to include ethnic and cultural differences, it remains concise enough to describe how technology influences couple and family relationships (Hertlein & Blumer, 2014).

As the name suggests the theory incorporates the influences of technology use on the family and couple system. The family system includes the parent-child and sibling subsystem which are beyond the scope of the current study. Therefore, this chapter will focus on the

CFT framework and how it applies specifically to romantic relationships. The three main components of the CFT framework will be discussed in more detail below.

The Family Ecology Perspective

The family ecology approach is a key scientific approach that provides a framework to understand the reciprocal influences between family systems and their environment (Bronfenbrenner, 1994). This perspective supports the view that humans cannot exist in isolation but are embedded in, and are part of, their environment. Everything appears to be a web of interconnectedness in individuals and their environments are in an active process of mutual influence and change (Bronfenbrenner, 1994; Goldberg & Goldberg, 2008).

Although this perspective is one of the earliest theories in family science it has been adapted to articulate with many new and evolving elements that have emerged due to the changes in the natural and human-created environments (Johnson, 2010). For example, the theory has been refined to incorporate a techno-subsystem which includes the new and evolving environmental influences that have emerged due to the digital age. The techno-subsystem includes all interactions with communication, information and recreational technologies which is predominantly facilitated by the internet (Hertlein, 2012; Hertlein & Blumer, 2014; Johnson, 2010). The CFT Framework identifies seven key ecological elements which underline the changes in relationship structures and processes when couples incorporate technology into their relationships. The seven A's include accessibility, affordability, acceptability, anonymity, approximation, accommodations, and ambiguity which will briefly be discussed in the next session.

Accessibility. The internet is becoming more accessible through the continuous development of technological devices such as smartphones, tablets, laptops and wireless connections (Campbell & Murray, 2015; Fox, 2013). Consequently, internet-mediated communication is more prevalent, and individuals are able to communicate with each other at

any time from any location through online networks such as emails, instant messaging and social networking sites (Hertlein, 2012; Hertlein & Blumer, 2014; Hertlein & Stevenson, 2010). For some couples, media use can be a shared hobby where they can connect in virtual worlds through instant messaging, sharing online images and videos, as well as play online games together (Campbell & Murray, 2015; Fox, 2013). Research indicates that when the internet is used conjointly it can assist with the development of intimacy and trust within the system as it provides additional opportunities for disclosing information and bonding activities (Campbell & Murray, 2015). However, the constant connection may introduce new challenges within the couple system which will require its members to effectively negotiate the presence and usage of technology to prevent problematic usage (Campbell & Murray, 2015; Hertlein & Blumer, 2014, Przepiorka & Blachnio, 2016). For example, the ease and accessibility of the internet create the possibility for couples to connect too much, thereby unintentionally decreasing the autonomy necessary for a healthy romantic relationship. Couples may develop unrealistic expectations for their partners to constantly be available and responsive at all times, which can lead to conflict and disappointment (Campbell & Murray, 2015; Hertlein, 2012; Schade et al., 2013).

Furthermore, the cyber world creates various opportunities to engage in private online activities aimed at individual fulfilment instead of connecting or spending time together as a couple (Huddleston, 2015). The increased accessibility to online activities can become time consuming and can negatively influence intimacy in relationships if one or both partners consistently choose to use technology for individual fulfilment instead of spending time with their partner (Campbell & Murray, 2015; Hertlein & Blumer, 2014). It is common for individuals within a couple system to have separate mobile phones, email addresses and social media accounts. The use of a mobile phone is typically individualised and can be considered a solitary activity as opposed to a group activity. Therefore, using a mobile device

in the presence of others can diminish the quantity of quality time for shared activities (Fox, 2013; Huddleston, 2015). The intrusion of 'our time' with 'me time' can potentially be problematic for the system if these interruptions are frequent and persistent (Fox, 2013; Hertlein & Blumer, 2014).

In addition, problems relating to the element of accessibility does not only refer to increased accessibility but also to the lack thereof. When one partner does not have access to certain aspects of their partner's life it can become problematic. Security settings have become more advanced and applications have been developed to protect the user's privacy by using passwords and saving messages and photos on hidden locations (Schwartz & Timbolschi-Preoteasa, 2015). As a result, increased accessibility to online activities leads to more opportunities for secrecy which can potentially create distance between partners leading to feelings of betrayal and mistrust, and in some cases, facilitates infidelity (Mao & Raguram, 2009; Pauley & Emmers-Sommer, 2007; Treas & Giesen, 2000). For individuals that are inclined to cheat on their partners, the internet resembles a place where they can develop secret relationships through creating alternative or fake profiles, sending private messages and hiding their relationship status online (Cravens & Whiting, 2014; Hertlein & Blumer, 2014; Piercy, 2012). For example, Facebook is a social networking site which was not designed to promote online infidelity, yet an increasing number of divorces cite secret behaviours on Facebook as the major contributing factor to the termination of marriages (Cravens & Whiting, 2014).

Affordability. The internet has become an affordable means of interaction and entertainment due to the rapid technological advances to provide more consumer-friendly devices (Hertlein, 2012; Hertlein & Blumer, 2014). The global community recognised the importance of digital equality as information and communication technology is considered an important tool to fight poverty, underdevelopment, and marginalisation. Therefore, the digital

divide has been on the forefront of governmental policy discussions on a local, provincial and national level with the aim of increasing the affordability of the internet (Affordable internet report, 2017). The Global 2017 Affordability report has set a target for affordable, universal internet access by 2020 as part of the new Sustainable Development Goals (Affordable internet report, 2017).

Currently many programmes, applications and online services can be used or downloaded for free or at a relatively low cost. For example, opening an e-mail account generally only requires a password and a username. Due to the affordability, internet mediated communication has become the preferred method of communication for many to connect with their partners, friends, and family throughout the day, thereby potentially enhancing their commitment to one another (Campbell & Murray, 2015, Hertlein & Blumer, 2014; Pauley & Emmers-Sommer, 2007). Individuals are enabled to initiate and maintain relationships through various online platforms such as video calls, instant messaging apps, for example, 'Whatsapp', and social networking sites like Facebook, which can all be considered more cost effective than face-to-face interactions such as dinner dates or other outings in the physical world (Hertlein & Stevenson, 2010). These methods have made it financially feasible to maintain long-distance relationships. The element of affordability has provided many individuals with the opportunity to maintain their long distant relationships, which they would not otherwise have been able to due to separation by distance or circumstance (Campbell & Murraray, 2015).

Acceptability. The use of technology for a variety of purposes such as work, communication, and entertainment has become acceptable in modern society (Campbell & Murray, 2015; Stewart et al., 2014). The constant increase of individuals and businesses that are active on social media sites, websites, blogs and other online platforms illustrate how the use of technology has become more acceptable in all aspects of daily life (Hertlein & Blumer,

2014). For instance, Facebook recently announced that there are over two billion users across the globe (Welsch, 2017) which highlights the acceptability and popularity of social networking sites. More specifically, there has been a massive rise in Facebook users in South Africa showing an increase of 8% from 12 million to 13 million in the 2017 (Welsch, 2017). According to Hertlein and Blumer (2014), the concept of acceptability extends beyond the practice of merely using internet-based services for communication and entertainment. It is becoming increasingly more acceptable to initiate and maintain relationships through online interactions (Finkel, Eastwick, Karney, Reis, & Sprecher, 2012; Schade et al., 2013). The acceptability of online interactions to maintain pre-existing relationships has increased the acceptability of being in a long-distance relationship or moving away from friends and family members (Hertlein & Blumer, 2014).

Using the internet to find eligible romantic partners through online dating sites has also become more acceptable (Finkel et al., 2012; Hertlein & Blumer, 2014; Homnack, 2015; Madden & Lenhart, 2006; Rau, Gao, & Ding, 2008). The internet provides access to a wider network of potential partners beyond the individual's personal network in a safe and convenient way which contributes towards its acceptability (Finkel et al., 2012).

Another element of acceptability extends to certain websites that aim to promote and facilitate an acceptable environment for individuals to engage in hurtful or damaging behaviour (Hertlein & Blumer, 2014) For example, the Ashley Madison social networking service is marketed to individuals who are in relationships and is specifically designed to facilitate relational straying. With the slogan, 'Life is Short. Have an Affair' the site aims to create a context of excitement and acceptability regarding infidelity. This aspect of online acceptability can have significant implications for boundaries of acceptable behaviour within relationships (Hertlein & Blumer, 2014).

Anonymity. Unlike face-to-face interactions, internet-mediated communication enables individuals to hide their identity by creating online user accounts using alternative identities (Green, 2013; Ma, Hancock, & Naaman, 2016). The internet creates the opportunity for individuals to create profiles or personalities online where they can fabricate, exaggerate and maximise positive aspects of themselves (Huddleston, 2015; Shaw & Black, 2008). They are also able to conceal certain aspects of their lives such as relationship status or physical characteristics or even their immediate responses within interactions (Cornwell & Lundgren, 2001; Hertlein & Blumer, 2014; Shaw & Black, 2008). Communication via a keyboard enables individuals to edit their responses as they interact with others online. Nonverbal reactions are not conveyed automatically as in face-to-face discussions and the user is provided with the necessary time and space to think, edit, delete or rephrase their responses to ensure that they are favourable. Individuals can hide their spontaneous reactions, emotions, and opinions, in other words, their authentic selves (Cornwell & Lundgren, 2001; Kim, LaRose, & Peng, 2009; Schade et al., 2013). Therefore, anonymity provides the individual with the necessary protection which enables individuals to gain acceptance prior to becoming completely vulnerable in a relationship (Cornwell & Lundgren, 2001; Hertlein, 2012). Hiding behind the mask of anonymity provides individuals with a sense of control to decide when to reveal their authentic selves once they feel safe in the relationship (Cornwell & Lundgren, 2001; Kim et al., 2009; Schade et al., 2013). Furthermore, anonymity creates an equal platform for individuals to interact with others from a wide variety of backgrounds. Individual differences with regard to social status, power, gender can be minimized or even diminished due to the anonymity of the user. This can potentially change the structure of relationships as individuals have greater levels of exposure to others than they would have had in the real world (Hertlein & Blumer, 2014; Joinson, 2001; Schade et al., 2013).

The concept of anonymity extends beyond the masking of personal attributes and includes anonymous online exchanges, interactions and behaviours (Hertlein, 2012; Lapidot-Lefler & Barak, 2012). Anonymity can be considered as one of the main factors that contribute towards the online disinhibition effect (Suler, 2004). The online disinhibition effect refers to instances where individuals engage in online behaviours that they would not generally do in face-to-face interactions (Lapidot-Lefler & Barak, 2012; Suler, 2004). Individuals act in uncharacteristic ways because their online actions are separated from their real world making them feel less vulnerable or accountable for their actions and they do not have to acknowledge their behaviours as part of their real selves (Anderson, 2005; Lapidot-Lefler & Barak, 2012; Suler, 2004). For example, anonymous online sexual interactions create an experience of treating the chat room as if it was a movie, consequently, detaching the individuals from their behaviour in the process. The online disinhibition effect includes two broad categories of behaviour, namely, pro-social behaviours which are referred to as benign disinhibition while anti-social behaviours are referred to as toxic disinhibition (Joinson, 2001; Lapidot-Lefler & Barak, 2012; Suler, 2004).

Benign disinhibition describes behaviour in which individuals engage in more self-disclosures online or acts of kindness than they would in face-to-face interactions. Individuals might engage in these behaviours to explore different aspects of themselves and methods of interactions or to work through problems (Suler, 2004). Toxic disinhibition refers to behaviours that include rude language, criticism and threats, and visiting porn sites or other online places of crime or violence, which the individual might not visit in real life (Suler, 2004). Research indicates that the process of detachment can result in a ripple effect, where individuals' behaviours progressively move toward increasingly risky and problematic behaviours (Hertlein & Blumer, 2014; Shaw & Black, 2008; Suler, 2004).

Approximation. The development of technology has led to the improvement of graphics, video projections and applications to become more lifelike to the extent where the online activities can replicate real offline situations (Hertlein, 2012; Hertlein & Blumer, 2014). This has the potential to affect the emotional and physical intimacy between couples and family members (Klein, 2013; Miller-Ott, Kelly, & Duran, 2012; Pauley & Emmers-Sommer, 2007). Real-time conversations are made possible through various web-based technologies enabling individuals to visually interact with others in real-time.

The ability of the internet to approximate real-world situations can provide individuals with the opportunity to engage in behaviours that they are unable or afraid to do in their offline lives (Hertlein & Blumer, 2014). Research on the approximation phenomenon has mainly focused on cybersex and individuals seeking alternative partners online (Baym, Zhang, Kunkel, Ledbetter, & Lin, 2007; Cooper, Delmonico, & Burg, 2000; Park et al., 2016). Research indicates that individuals are able to use online interactions to satisfy their emotional and sexual needs by engaging in realistic experiences without the unwanted consequences (Hertlein & Blumer, 2014; Suler, 2004). For example, cybersex provides users the opportunity to engage in sexual practices while removing certain consequences such as unwanted pregnancy or sexually transmitted infections.

Approximation intensifies online experiences and can facilitate intimacy as well as a sense of betrayal. For example, research indicates the betrayal experienced in online infidelity can mimic offline betrayal because online interactions replicate real-world situations (Mao & Raguram, 2009; Pauley & Emmers-Sommer, 2007; Treas & Giesen, 2000). Although approximation is known to make the internet more appealing and increases its usage it can potentially also pose challenges to couple and family systems as it provides easy and real life like opportunities for individuals to interact with others online.

Accommodation. The concept of accommodation applied to the cyber world refers to the internet's ability to provide a space for individuals to satisfy their wants and needs when they are unable to do so offline (Hertlein & Blumer, 2014). In relation to the ecological elements mentioned above, the internet provides a place where individuals can have a different online persona and construct their communication and behaviours to act in accordance with their real or ideal selves (Green, 2013; Osborn, 2012). The reality presented online often does not align with the objective reality of life offline (Schwartz & Timbolschi-Preoteasa, 2015). This can be attributed to the discrepancy between real selves and ideal selves which people often experience (Green, 2013). Individuals that have the desire to maximise their positive attributes, careers or relationships online often do so in accordance with their ideal selves (Green, 2013; Hertlein & Blumer, 2014; Osborn, 2012). Others might engage online behaviours to express certain aspects of their real selves which they are unable to do offline because they perceive their lives as rule-driven, confined or constrained (Hertlein, 2012; Hertlein & Blumer, 2014). For example, individuals can engage in sexual activities online as a result of feeling constrained in such activities in their offline lives (Hertlein & Blumer, 2014; Park et al., 2016). The extent to which the element of accommodation potentially enhances or detracts from romantic relationship development is largely dependent on the extent to which each individual experiences a discrepancy between their real and ideal self (Hertlein & Blumer, 2014). Couples where individuals have a low discrepancy between their real and ideal selves tend to have more congruent online interactions. On the contrary, couples where one or both individuals have a significant discrepancy between their real and ideal self tend to engage in more incongruent online interactions which might pose certain challenges for the relationship. These couples might find computer-mediated communication confusing as their way of relating online might be different to their way of relating offline. These couples might experience decreased

relationship satisfaction and cause conflict because of difficulties in understanding the other's perspective which might damage the perception of trust in the relationship (Anderson, 2005; Hertlein & Blumer, 2014; Miller- Ott et al., 2012; Schade et al., 2013; Reis & Collins, 2016). The level of accommodation that the internet provides for couples to express themselves can result in a preference for online communication as individuals feel more comfortable in expressing certain aspects of their personality online. This can potentially impact upon the couple system as it creates a divide between partners fostering feelings of betrayal and mistrust thus challenging levels emotional intimacy (Campbell & Murray, 2015; Hertlein & Blumer, 2014; Schade, et al., 2013).

Ambiguity. The definition of problematic online behaviour varies between individuals and can therefore introduce challenges in the couple system (Hertlein & Blumer, 2014). The concept of ambiguity refers to the uncertainty associated with computer-mediated interactions and can refer either to relational ambiguity or technological ambiguity (Hertlein & Blumer, 2014). Relational ambiguity refers to the uncertainty around the appropriate use of internet mediated interactions within the couple system (Fox, 2013; Hertlein & Blumer, 2014). Couples might disagree whether specific behaviours related to internet use is helpful, problematic or neutral to the relationship. In many cases the individual engaging in the problematic behaviour views it as neutral or positive and the partner observing and evaluating the behaviour perceives it as hurtful (Hertlein, 2012). For example, online pornography can be viewed as acceptable by one partner but perceived as problematic by the other. Partners of frequent online pornography users can feel betrayed, disrespected, and less sexually desirable, which decreases their commitment and intimacy within their romantic relationship (Campbell & Murray, 2015; Murray & Campbell, 2015). Furthermore, internet-mediated communication eliminates non-verbal cues such as tone of voice, facial expressions and body language, which can potentially lead to ambiguous interactions and misunderstanding.

(Campbell & Murray 2015; Hertlein & Blumer, 2014). In order to compensate for this limitation many internet-mediated communication applications offer an array of emoticons and abbreviations. An emoticon is a pictorial representation of a facial expression to express an individual's feelings or mood (Derks, Bos & von Grumbkov, 2008). Many users might however be unsure what the symbols, emoticons, or abbreviations stand for which could lead to additional misinterpretations or misunderstandings, further decreasing the effectiveness of online communication (Derks et al., 2008).

The greater the degree to which appropriate online behaviours and interactions are ambiguous, the greater the risk of potential harm, conflict or disruptions to the couple's relationship. Couples are faced with the challenges to make mutually agreed upon decisions and rules to negotiate the current use of internet use within their relationship (Hertlein & Blumer, 2014).

The other aspect associated with uncertainty in online interactions refers to technological ambiguity (Hertlein & Blumer, 2014). This refers to the difference between each individuals' knowledge about new media and how to use technology. For example, there may be software or phone applications used by one person to discreetly conceal one's activities. If their partner is less familiar with such applications, they will not be able to appropriately appraise a situation as problematic.

As previously mentioned, the ecological elements have the potential to shift relationship structures by redefining relationship roles, rules and boundaries. The following section will elaborate on these structural changes within the structural-functionalist perspective to explore such shifts in relationship structures.

The Structural-Functionalist Perspective

The changes to relationship structure can be conceptualised through the lens of the structural-functionalist perspective (Goldberg & Goldberg, 2008). Structural-functionalism

provides a framework that views society as a complex system with interdependent structures to promote solidarity and stability (Goldberg & Goldberg, 2008). According to this approach, society is striving towards a state of equilibrium and therefore structures are continuously changing to adjust to any developments within the system. Herbert Spencer, a major contributor to this perspective, compared society to the human body and the structures within can be compared to the different organs working together to ensure proper functioning of the body as a whole (Goldberg & Goldberg, 2008).

When applied to the couple system the structural-functionalist framework describes how relationships are organized within their environment to meet their needs (Goldberg & Goldberg, 2008; Hertlein & Blumer, 2014). The structure of a relationship is generally determined by interpersonal rules, roles and boundaries between individuals (Paat, 2013; Reis & Collins, 2016), which influences its overall functioning. The overall functioning of the system subsequently feeds back into either maintaining or changing the structure to ensure solidarity and stability (Hertlein & Blumer, 2014). The ecological elements associated with technology use requires couples to redefine their roles, rules, and boundaries to ensure proper functioning.

Redefinition of interpersonal rules. In romantic relationships individuals generally negotiate expectations that specify permissible, required, or prohibited behaviors. These expectations can also be referred to as relationship rules which are prescriptions for issues such as honesty, fidelity, communication, and time allocation (Hertlein, 2012; Roggensack & Sillars, 2013). Relationship rules are important as it creates predictability and prevents or reduces possible conflicts (Hertlein, 2012; Hertlein & Blumer, 2014). The negotiation process is ongoing with a degree of ambiguity especially for couples who incorporate technology in their daily lives (Hertlein, 2012; Roggensack & Sillars, 2013).

Technology and the ecological elements associated with internet use introduces new challenges within the couple system which requires couples to redefine their relationship rules to prevent problematic use. Specific categories of rules that need to be redefined include rules regarding communication, emotional expression, and infidelity (Hertlein & Blumer, 2014; Millham & Atkin, 2016; Roggensack & Sillars, 2013).

Rules regarding communication will generally include the frequency and content of online as well as face-to-face interactions. Due to the ecological elements of accessibility and acceptability to maintain relationships through online interactions, partners need to balance their needs for autonomy, privacy and their need for connection when interacting with their partners as well as with others online. If there is a difference in the partner's needs and this is not negotiated, it could lead to tension and interference with couple functioning (Millham & Atkin, 2016; Hertlein, 2012; Knee, Hadden, Porter, & Rodriguez, 2013; Wang, Yuen & Li, 2014). For example, rules regarding the usage of mobile devices need to be negotiated. Couples need to decide when, where and how often is it acceptable to respond to text messages, browse social media sites or respond to emails while spending time with or apart from partners. According to Miller-Ott et al. (2012) couples that have explicit rules regarding mobile use tend to have higher levels of relationship satisfaction.

Rules regarding self-disclosure and emotional expression also need to be redefined. Self-disclosure refers to the process of sharing personal information with others (Ma et al., 2016; Roggensack & Sillars, 2013). Self-disclosure reinforces components such as trust, intimacy, and commitment which are crucial for the development of relationships (Ma et al., 2016). Although self-disclosure can be a rewarding experience, it also involves risks, especially in online interactions where the audience is unknown. For example, social networking sites allow users to interact by sharing photos, status updates, posts, and messages to a large audience. These disclosures are often reinforced by ecological elements such as acceptability,

accessibility, and approximation and can lead to increased vulnerability and loss of privacy (Hertlein & Blumer, 2014).

In some cases, individuals might be offended if their partners share information online, which they considered confidential. Through this process of online self-disclosure, individuals can receive social validation and relationship development with many other internet users, which could potentially lead to tension, jealousy and decreased relationship satisfaction in their current relationship (Hertlein, 2012; Roggensack & Sillars, 2013).

In relation to the rules regarding self-disclosure and emotional expression, these need to be redefined. Couples need to determine which emotions are appropriate to share via online interactions with each other as well as with others. The ecological elements of ambiguity and approximation creates the risk for individuals to respond impulsively to emotional triggering stimuli that can decrease meaningful interactions between partners (Schade et al., 2013). Therefore, couples that have specific rules that prevent them from initiating an argument via internet-mediated interaction might experience less relational tension, increased communication satisfaction, and increased general relationship satisfaction (Hertlein & Blumer, 2014; Roggensack & Sillars, 2013). In addition to negotiating rules regarding self-disclosure and emotional expression, rules regarding infidelity also need to be renegotiated. The internet has changed the dynamic of infidelity, including the process of how individuals cheat on their partners as well as the actions that constitute the act of infidelity (Anderson, 2005; Campbell & Murray, 2015; Stewart et al., 2014)

Traditionally infidelity was limited to behaviours in the physical world and was traditionally understood as the act of being unfaithful to a partner (Paat, 2013). Researchers generally agree that infidelity consists of an emotional and/or sexual component (Paat, 2013; Treas & Giesen, 2000). The internet has provided individuals with the means to overcome physical limitations and to engage in infidelity, both emotionally and sexually, through online

interactions (Mileham, 2007). The virtual world provides a platform that is accessible, affordable and anonymous, making it easier for individuals to be unfaithful to their partner (Mileham, 2007; Treas & Giesen, 2000). Although online infidelity excludes physical contact, research indicates that online affairs can be just as devastating as the real-world variety, triggering feelings of insecurity, anger and jealousy, and decreased relationship satisfaction (Mileham, 2007; Treas & Giesen, 2000). Online infidelity can include behaviours ranging from developing an emotional connection and sharing private details to engaging in cybersex, online dating or flirting with other online users (Cravens & Whiting, 2014; Mao & Raguram, 2009; Murray & Campbell, 2015; Pauley & Emmers-Sommer, 2007). Research indicates that individuals' perceptions of behaviours that constitute online infidelity differ, thus reflecting the need for couples to renegotiate the rules to prevent possible devastating consequences (Hertlein & Blumer, 2014; Hertlein & Sendak, 2007). Relationship satisfaction increases when rules are explicit and mutually agreed upon (Campbell & Murray, 2015; Hertlein & Blumer, 2014).

Redefinition of roles. The omnipresence of the internet influences individuals' ability to effectively balance their life roles. Life roles or how one expects people to behave in any given situation can include that of a romantic partner, parent, friend, employee, employer or leadership role in the community (Savickas et al., 2009).

Technology has created a fast-paced society focused on instant gratification, multitasking and completing activities within minutes (Pomerantz, 2013). Parallel to these societal changes, the workforce has undergone major changes over the last decade. On the other hand, new technologies have made it possible to perform job tasks from any location at any time which can potentially diminish personal space and time. Individuals can be targeted to work on weekends or compelled to respond to work demands after hours which can invade quality time with partners or family members (Hertlein & Blumer, 2014; Savickas et al., 2009). On

the other hand, the constant connection to friends, family and romantic partners offered by online platforms can potentially increase interruptions at work leading to decreased productivity (Savickas et al., 2009). In addition, the participation in online activities can be time consuming which could lead to individuals neglecting their role with regards to household duties. This can potentially lead to conflict and decreased relationship satisfaction (Hertlein & Blumer, 2014). Couples are therefore required to redefine their professional and personal roles in order to guard themselves against role imbalances and to prevent professional and personal conflicts (Hertlein & Blumer, 2014; Savickas et al., 2009).

While the internet can have a detrimental effect on individual roles, it can also enable individuals to achieve a more equitable role balance by providing alternative ways of enacting roles (Hertlein & Blumer, 2014). For example, individuals do not have to travel as much for work related tasks as they can use online platforms to complete job tasks thereby allowing them to spend more quality time with their partners, friends and family.

Redefinition of boundaries. Interpersonal boundaries are necessary as it helps individuals to protect themselves both physically and emotionally, as well as defining a sense of self, making it vital for well-being and relationship development (Millham & Atkin, 2016; Wisniewski, Lipford, & Wilson, 2011). The traditional methods of reinforcing boundaries such as creating personal space through distance or indicating territory through using fences is limited to the context of the physical environment and does not necessarily apply to cyberspace (Wisniewski et al., 2011). The internet provides multiple online platforms for communication and information sharing which can blur interpersonal boundaries (Wisniewski et al., 2011). Many online social networks are designed to encourage disclosure with an audience which can disrupt existing privacy boundaries (Hertlein & Blumer, 2014; Millham & Atkin, 2016). The internet can introduce people who are known or unknown into the couple system which can result in positive or negative experiences. The popularity of

social networking sites is largely attributed to its ability to facilitate relationship development which illustrates a human being's innate desire to communicate with others (Millham & Atkin, 2016). According to Mark Zuckerberg, the founder of Facebook, social norms of information sharing have evolved with the emphasis shifting from privacy to openness with more people (Johnson, 2010). Individuals interact and share information with online 'friends' although they might not represent real friendships. The phenomenon known as 'hyper friending' refers to the social norm of interacting with a large online audience where only about 25% of such individuals represent true friendships (Hand, Thomas, Buboltz, Deemer, & Buyanjargal, 2013; Wisniewski et al., 2011). Online interactions with virtual friends can create tension between partners when they feel that the boundaries of their relationship have been violated. For example, online interactions with previous or potential alternative romantic partners might lead to tension in the couple system. One partner might become jealous and overprotective when they believe a boundary has been crossed, while the other might feel irritable or smothered by their partners behaviour toward them (Hertlein & Blumer, 2014; Hand et al., 2013). In addition, oversharing information online has also become a social norm on many social networking sites and can be potentially detrimental to relationships (Wisniewski et al., 2011). Individuals that share private information online might violate their relationship boundaries which could lead to tension in the relationship (Wisniewski et al., 2011).

Interpersonal boundaries, which regulate how much we share of ourselves with others, are essential for personal well-being and developing interpersonal relationships. Couples are now faced with the challenge of redefining their interpersonal boundaries which involves information privacy and interactional privacy. According to Wisniewski et al. (2011) information privacy is related to the disclosure of private information whereas interactional

privacy refers to the management of the level of access given to others through social interactions.

Although sharing information online can be considered as the new social norm it changes the overall process of boundary regulation which can cause challenges for the couple system (Hertlein, 2012; Hertlein & Blumer, 2014). Couples are faced with the challenge to become aware of their boundaries, and to negotiate and mutually agree upon what personal information is acceptable to share outside the couple system in order to minimise problems that emerge and to maintain overall relationship satisfaction.

Interaction-Constructionist Perspective

Technologies have rapidly become pervasive parts of people's lives and relationships. Within romantic relationships, partners may use technologies for many functions, including communicating, sharing affection, and engaging in bonding activities (Campbell & Murray, 2015; Murray & Campbell, 2015). Many relationship processes such as relationship formation, initiation, maintenance, intimacy, commitment, and communication are no longer limited to face-to-face interactions (Campbell & Murray, 2015). The ecological elements associated with the internet as well as the subsequent changes to relationship structures influences the above-mentioned relationship processes. The internet provides new channels for communication thereby creating new ways to engage in relationship processes such as developing intimacy and commitment, which in turn can increase relationship satisfaction (Anderson, 2005; Campbell & Murray, 2015). Incorporating the internet into relationships can influence the timing, commitment, and communication between partners as well as other individuals such as family and friends. These changes can be conceptualised through the lens of the interaction-constructionist perspective in family science.

This perspective examines how individuals develop an understanding of the world and themselves through their interactions with others. In this view family members develop

relationships with and interact with one another through communication, behaviour, traditions, and rituals in order to develop a family identity (Goldberg & Goldberg, 2008; Hertlein, 2012). According to this theory, the effects of technology on human behaviour are not direct but rather are negotiated through an individuals' construction and use of it. For example, the internet itself is a neutral device but the meaning individuals ascribe to online interactions are constructed by the users. The following section will provide a brief overview on some of the specific changes in relationship processes due to the incorporation of technology.

Relationship Formation and Initiation. Internet-mediated communication is redefining how individuals engage in relationships of all types. Considering the pervasiveness and popularity of social networking and online dating sites it is apparent that romantic relationships are being initiated and developed online (Campbell & Murray, 2015; Homnack, 2015). Research indicates that online platforms have become the second most common way to meet people after meeting others through mutual friends. As it becomes increasingly common for individuals to develop relationships online, traditional dating habits have started to diminish (Pauley & Emmers-Sommer, 2007). This might partially be attributed to individuals' perceptions that online platforms are safer than offline settings. In addition, online platforms offer a greater sense of control by allowing users to create online profiles where they can project and even exaggerate their favourable attributes (Murray & Campbell, 2015; Shaw & Black, 2008). Online relationship initiation occurs without all the information normally available in the physical world. Features that would potentially inhibit relationship initiation such as certain hair colours, body shapes, physical appearance, social status, and gender might not be observed in online platforms when relationships are initiated (Campbell & Murray, 2015; Shaw & Black, 2008). Therefore, there is a higher likelihood for individuals to idealise potential partners online as there is no contradictory evidence. In addition,

individuals are afforded the opportunity to edit their responses before sending them which contributes to an enhanced sense of control people experience in an online relationship. These combined factors all contribute towards the greater sense of control experienced in online interactions which are not present in face to face interactions (Campbell & Murray, 2015; Hertlein, 2012; Hertlein & Blumer, 2014; Shaw & Black, 2008). However, the illusion of control can be disrupted by daily living experiences or other issues which can replace the fantasy with reality which might prevent the relationship from progressing to an offline face to face relationship, which for many is the purpose of online relationships (Hertlein, 2012).

Some researchers argue that online relationship initiation is not conducive to forming authentic relationships due to the lack of non-verbal cues and minimal social context. Others argue that the disembodiment of physical appearance is conducive to genuine, free, and open communication (Anderson, 2005; Murray & Campbell, 2015; Pauly & Emmers-Sommer, 2007). Relationship initiation has changed drastically with the advent of the internet. How individuals initiate relationships online will affect relationship construction and either assist or inhibit the development of a well-functioning close relationship.

Relationship maintenance. Relationship maintenance encompasses a broad range of behaviours that help partners keep their relationships in a desired state (Anderegg, Dale, & Fox, 2014). Although the definition of relationship maintenance varies across divergent disciplines, when it comes to romantic relationships researchers generally agree that it includes behaviours that aim to develop intimacy and commitment, which leads to relationship satisfaction (Anderegg et al., 2014). Incorporating technology into romantic relationships can either assist or inhibit individuals to effectively maintain their relationships as it provides more opportunities for engaging in behaviours that lead to increased intimacy and creates opportunity for demonstrating commitment to one's partner (Hertlein, 2012; Hertlein & Stevenson, 2010). One of the overarching changes technology is introducing to

the process of relationship maintenance is the development of intimacy (Anderson, 2005). Internet-mediated communication has the potential to accelerate the process of developing intimacy. This can partially be attributed to a sense of control online interactions provide (Hertlein, 2012; Pauley & Emmers-Sommer, 2007; Shaw & Black, 2008). As previously mentioned, online communication provides users with a sense of safety and control which leads to more self-disclosure and thereby increased levels of intimacy and commitment in a shorter time than would be expected when interactions are limited to face to face encounters (Anderson, 2005; Cornwell & Lundgren, 2001). In addition, ecological factors such as accessibility, acceptability and affordability create more opportunities for communication and bonding with others which may allow for greater levels of intimacy (Anderson, 2005; Cornwell & Lundgren, 2001; Hertlein, 2012).

As mentioned previously internet-mediated communication tools have adapted to include emoticons to compensate for the lack of non-verbal cues. The use of emoticons can be linked to increased satisfaction with online communication, which is considered a prerequisite for developing intimacy online (Derks et al., 2008). The same ecological elements of accessibility, acceptability and affordability associated with online communication can adversely impact on intimacy development in the relationship (Hertlein & Blumer, 2014). As previously mentioned, time spent on technology can interrupt quality time especially if it is used for individual fulfilment as opposed to interacting with one's partner. Individuals might feel neglected and resentful towards their partner which may negatively impact upon the process of developing intimacy in a relationship (Anderson, 2005, Miller- Ott et al., 2012). These contradictions highlight that it is not necessarily the inclusion of technology creating problems in relationships, but rather, how the technology is responded to that makes the difference.

Another change technology is introducing to the process of relationship maintenance is the way individuals display their commitment to their partners. According to Anderson (2005), commitment can be defined as the sense of relational cohesion, exclusivity and anticipated continuance of the relationship. Many social networking sites provide couples with the opportunity to publicly display their relationship status as showing 'in a relationship' or 'married' to an identified person (Miller-Ott et al., 2012; Przepiorka & Blachnio, 2016). Instead of having people hear about a relationship change through word of mouth, many individuals can now use online platforms to declare their commitment to a relationship to a large audience, including their friends and family. Other forms of public displays such as the sharing of pictures of individuals with their partner or posting messages on their partner's profile can lead to increased feelings of commitment towards their partner (Bowe, 2010). According to the Public Commitment Theory, when partners express their feelings to one another publicly it results in individuals feeling more secure and committed (Toma & Choi, 2015). Couples that report higher levels of intimacy and commitment also report higher levels of relationship satisfaction which is often a predictor of the length and success of their relationship (Anderson & Emmers-Sommer, 2006; Toma & Choi, 2015).

Relationship termination. Research has shown that relationship dissolution whether it is through death, divorce or emotional separation, is identified as one of the most painful life experiences often resulting in depression, anger, grief, and negative cognitions and behaviours (Neves, 2015). The dramatic increase in technology use can impact each of these various endings in a variety of ways. As previously mentioned, online interactions have become a mainstream way for couples to communicate. When couples struggle to effectively navigate the implementation of internet use in their relationship it can predict relationship dissolution (Miller-Ott et al., 2012; Przepiorka & Blachnio, 2016). Research indicates an increase in the divorce rate associated with infidelity due to internet-related issues. Some

social networking sites have been identified as a key role-player in the dissolution of relationships as such sites actively promote and create opportunities for infidelity. Other social networking sites such as Facebook might not have been designed to facilitate relational straying but yet for those so inclined, it can (Fox, 2013; Mazer & Ledbetter, 2012; Przepiorka & Blachnio, 2016). The internet and social networking sites are known to expose individuals to an abundance of potential new romantic partners which can influence relationship dynamics and, in some cases, lead to the termination of existing relationships (Osborn, 2012; Paat, 2013; Wang et al., 2014).

Another component of relationship termination influenced by the use of technology is relationship dissolution strategies (Baxter, 2009; Cravens & Whiting, 2014; Fox, 2013). Individuals no longer have to explain to their partner in a face to face interaction the reason for ending the relationship. Ending a relationship via technology may be as simple as sending a text message or email, logging off the computer, or not replying to any online communication, which can be considered by some as an easier approach (Baxter, 2009; Cravens & Whiting, 2014; Hertlein & Blumer, 2014).

In addition to terminating relationships online, the disclosing of one's relationship status can also be made public on online platforms. Individuals are able to change their online relational status to divorced, separated, or single, thereby introducing a decision point of when the relationship has ended. This can be done either separately or conjointly (Hertlein & Blumer, 2014). Furthermore, online platforms provide opportunities for individuals to disseminate information when their partner, friend or family member passed away (Hertlein & Blumer, 2014). It is not uncommon to discover the death of an extended family member, friend, or acquaintance on Facebook. The deceased's profile can be transitioned into a memorial page which can serve as a source of comfort and connectivity among friends and

family (Hertlein & Blumer, 2014). This provides a platform to share messages and photos of the deceased, which can be preserved and visited by friends and family at any given time.

Conclusion

The internet has become a pervasive part of individuals' lives and their interpersonal relationships. Couples that incorporate technology into their relationships expose themselves to a new set of vulnerabilities on an ecological level and are faced with the challenge to navigate these vulnerabilities effectively to ensure the survival of their relationship. Such ecological elements have the potential to change romantic relationship structures by redefining relationship roles, rules and boundaries. Parallel to these changes are changes to the relationship processes including relationship initiation and formation, relationship maintenance, intimacy, commitment and relationship dissolution. Shifts in the structure of relationships can dictate changes in the processes of relationships and vice versa.

Couples can either choose to accept and reconceptualise their relationship in accordance with the new changes or reject it. Problems emerge when partners have different ideas about the roles, rules, and function of technology in their lives. The CFT Framework is conceptualised to clearly describe how technology plays a role in couple and family relationships. The framework can be used to describe how specific issues such as problematic internet use, online infidelity or porn usage can lead to changes in the relationship structure and relationship processes which links directly to the aim of the current study. The next chapter provides an overview of the concepts and research findings relevant to the topic of the current study.

Chapter 3

Literature Review

Introduction

As technology evolves and becomes more pervasive in everyday life it's impact upon interpersonal relationships and it's participation in community life is an emerging area of study (Chakraborty et al., 2010; Kraut et al., 1998; Puri & Sharma, 2016; Young, 2009). A recent survey revealed that the average South African smartphone user checks their device at least 47 times a day, and 84% of users check their device in the company of their friends and family (Crowe et al., 2019). News headlines such as 'Your smartphone may be powering down your relationship' (Kerner, 2013) and 'Digitally connected, socially disconnected' (Kushlev et al., 2017) highlights the potential relational difficulties that have emerged as a result of compulsive technology use.

The appeal of digital devices has been linked to the internet because it enables individuals to conduct day-to-day activities, from mundane tasks to social interactions and personal recreation (Young, 2004). The frequent use of the internet has sparked debate amongst researchers whether the internet is improving or harming romantic relationships (Chakraborty et al., 2010; Puri & Sharma, 2016; Young, 2004). Some research findings suggest that the internet is a new and more effective medium for enabling and enhancing communication, intimacy and relationship certainty (Campbell & Murray, 2015; Jin & Peña, 2010; Murray & Campbell, 2015). Other research findings highlight the addictive properties of the internet and indicate that internet use can lead to increased conflict, jealousy, infidelity, social isolation, and loneliness (Kerkhof et al., 2011; Kraut et al., 1998; Puri & Sharma, 2016; Young, 2009). In order to provide a context and backdrop for the phenomenon of problematic internet use and the potential psychological and social sequelae, this chapter will provide an overview of the relevant and current research findings.

Firstly, an overview of theoretical perspectives and empirical research findings on romantic relationship satisfaction will be provided. This will be followed by an overview of the evolution of romantic relationships in the digital age. Thereafter, research findings and debates regarding problematic internet use and three aspects thereof, namely, online preoccupation, social interactions and adverse effects, will be discussed. Throughout the chapter, the existing literature on the impact of internet use upon the quality of romantic relationships is highlighted.

Romantic Relationship Satisfaction

Romantic relationships provide human beings with the opportunity to meet their innate need for connection, love, intimacy and belonging (Fehr, Harasymchuk, & Sprecher, 2014). For many individuals their romantic relationships comprise of the most meaningful aspect of life, providing a deep source of fulfilment and overall life satisfaction (Facio & Resett, 2013; Neto & Pinto, 2015). However, romantic relationships can also be a source of stress, discomfort and pain which may negatively affect health and well-being (Treas & Giesen, 2000). Therefore, understanding how individuals create and maintain healthy intimate relationships and assessing the quality of such relationships has become increasingly important.

Relationship satisfaction reflects the perceived quality of the romantic relationship and can be defined as an interpersonal evaluation of the positivity of feelings for one's partner and the attraction to the relationship (Rusbult & Buuk, 1993). It can also be defined as a subjective evaluation of the degree to which an individual's, expectations, desires and needs are met, in addition to the pleasure and happiness experienced by both partners within the relationship (Hendrick, 1988).

Amongst many variables, relationship satisfaction is regarded as one of the most important and most researched variables in the field of couples research (Mattson, Rogge,

Johnson, Davidson, & Fincham, 2013; Ogolsky, Monk, TeKisha, Theisen, & Maniotes, 2017). The literature spans a broad range of topics including gender differences in satisfaction, the impact of relationship satisfaction on other life domains such as parenting and work productivity, the impact of contextual and environmental influences on relationship satisfaction, and the many potential predictors of relationship satisfaction such as communication, self-disclosure, conflict management and intimacy, sexual satisfaction and attachment styles (Bradbury, Fincham, & Beach, 2000; De Andrade, Wachelke, & Howat-Rodrigues, 2015; Rahaman, 2015). Despite this vast amount of research, making comparisons across studies is often difficult as researchers employ a variety of theoretical conceptualisations, methodologies and measurement techniques (Ogolsky et al., 2017).

A brief overview of theoretical conceptualisations and empirical research findings relevant to the current study is provided below.

Theories of relationship satisfaction. Theories that have been employed to understand and predict relationship satisfaction include evolutionary perspectives (Gómez & García, 2014), attachment theories (Gardner, 2007; Simpson & Rholes, 2017) and interdependence theories (Nakonezny & Denton, 2008; Paat, 2013). More specifically, the Social Exchange Theory was found to be particularly relevant not only to predict relationship satisfaction, but also to understand how the use of the social networks affect relationship satisfaction in offline relationships (Osborn, 2012; Shin & Hall, 2012; Shtatfeld & Barak, 2009; Surma, 2015). Considering the relevance of these research findings to the present study, the Social Exchange Theory will be discussed in more detail with a specific focus on how researchers have applied it to online social networks.

The Social Exchange Theory proposes that relationship satisfaction and maintenance depend on a negotiated exchange process in which individuals aim to maximise their self-interests (Osborn, 2012; Paat, 2013). Individuals evaluate their current relationship by

comparing the perceived rewards derived from the relationship to the perceived costs of being in the relationship. If the reward of the relationship, for example, emotional and intellectual gratification, outweighs the costs, which might include money, time and emotional energy, the relationship will likely be terminated (Nakonezny & Denton, 2008; Osborn, 2012; Paat, 2013; Wang et al., 2014). Furthermore, the theory suggests that relationship satisfaction is also influenced by the quality of alternatives to the current relationship (Nakonezny & Denton, 2008; Paat, 2013; Wang et al., 2014). The quality of alternatives refers to other potential partners or relationships or even the absence of the current relationship. The attractiveness of alternative partners and relationships influences relationship satisfaction by altering an individual's expectations of their current relationship (Osborn, 2012; Paat, 2013; Wang et al., 2014).

In a global society where the internet connects individuals with an abundance of potential alternative partners, the Social Exchange Theory provides a framework to understand an individual's level of relationship satisfaction and choice to maintain their current relationship or to explore alternative options that they are made aware of online (Nakonezny & Denton, 2008). Relationships as portrayed on the internet and the increased exposure to new potential partners represents an additional influence on relationship expectations (Hertlein, 2012; Osborn, 2012). Previous research indicates that relationships portrayed on social media often cultivate an idealised view of relationships (Campbell & Murray, 2015; Klein, 2013; Osborn, 2012). Therefore, individuals that use the internet excessively are more exposed to and are more likely to have heightened relationship expectations, which can lead to lower satisfaction with their current relationships. These influences can potentially alter their relationship expectations and increase the likelihood of individuals to selecting alternative partners that will enable them to maximise their self-interests (Sprecher, 2009).

Variables that predict relationship satisfaction. Relationship satisfaction can be assessed through one- dimensional models, evaluating the overall quality of the relationship, or through multi-dimensional perspectives, investigating the specific variables that could predict relationship quality (De Andrade et al., 2015; Epstein, Warfel, Johnson, Smith & McKinney, 2013).

Research findings from empirical studies have revealed that the degree to which partners fulfil each other's relational needs significantly influences overall relationship satisfaction. For example, individuals that experience their need for companionship, affection and emotional support fulfilled, reported higher levels of relationship satisfaction (Deci & Ryan, 2006; Gullledge, Gullledge, & Stahmann, 2003; Knee et al., 2013). Cramer (2004) confirmed the importance of emotional support in predicting relationship satisfaction. The study revealed that emotional support can predict relationship satisfaction irrespective of conflict experienced within the relationship.

Other research findings suggested that open communication and conflict resolution seem to be the strongest and most relevant predictors of relationship satisfaction (Maguire & Kinney, 2010; Overall, Fletcher, Simpson, & Sibley, 2009). More specifically, Guerrero, Anderson and Afifi (2011) indicated that the way partners manage conflict is a better predictor of relationship satisfaction than the experience of the conflict itself. Miller and Tedder (2011) highlighted that the more positively individuals experience emotional support, communication and conflict resolution, the higher their levels of relationship satisfaction would be. This finding confirmed earlier research conducted by Gottman (1994) which revealed that satisfied couples are more likely to discuss issues of disagreement, whereas dissatisfied couples are likely to minimise or avoid conflict.

Sprecher and Hendrick (2004) have highlighted the link between self-disclosure and relationship satisfaction. Their study indicated that relationships with higher levels of self-

disclosure, characterised by partners sharing their intimate feelings, attitudes and experience, were found to be more satisfactory. Furthermore, Floyd (2008) highlighted the importance of affectionate communication in predicting relationship satisfaction. Affectionate communication refers to behaviours that portray feelings of fondness and positive regard to another. Couples who frequently use verbal statements such as 'I love you' or 'I care about you' or engage in nonverbal gestures such as kissing, hand-holding, or hugging were found to be more satisfied in their relationships (Floyd, 2008; Gullede et al., 2003). These findings seem consistent with a study conducted by Sprecher (2002) which indicated that physical affection and greater sexual relationship satisfaction was associated with greater overall relationship satisfaction.

Rosen and Bachmann (2008) found an association between sexual activity and relationship satisfaction. Such research findings indicated that couples with more active and satisfying sexual activity reported higher ratings of emotional well-being and relationship satisfaction (Gullede et al., 2003; Rosen & Bachmann, 2008; Sprecher, 2002). Furthermore, research findings indicated that women who engaged in more sexual self-disclosure reported higher levels of relationship satisfaction, confirming the importance of self-disclosure in healthy romantic relationships (Rosen & Bachmann, 2008; Sprecher, 2002).

De Andrade et al. (2015) investigated whether variables predicting relationship satisfaction differ according to gender in a study with a sample of 190 male and 145 female participants. This study incorporated intimacy, passion and commitment as the essential components of romantic relationship satisfaction. The research findings indicated that for the female participants, all three dimensions were significant predictors of relationship satisfaction with commitment obtaining the highest mean score. In contrast, for the male participants the commitment variable was found to be insignificant (De Andrade et al., 2015). Commitment in this study referred to the extent to which individuals in romantic

relationships experience relational cohesion, exclusivity and anticipated continuance of the relationship (De Andrade et al., 2015). Numerous research studies have found a positive correlation between commitment and relationship satisfaction (Anderson & Emmers-Sommer, 2006; Rusbult & Buunk, 1993; Sprecher, 1999). Furthermore, De Andrade et al. (2015) suggested that for the male participants, variables associated with physical and sexual attraction and romantic interaction, such as support and trust, were predictors of overall relationship satisfaction.

Vannier and O'Sullivan (2017) indicated that relationship satisfaction is not merely determined by the absolute levels of the above-mentioned variables, but also by the degree to which partners meet relationship expectations. Relationship expectations refer to the ideas of how relationships should or will proceed and are generally nurtured since childhood (Demir, 2008). Relationship expectations are influenced by various factors including personal experiences, observations, culture or media exposure (Guerrero et al., 2011). Vannier and O'Sullivan (2017) investigated the correlation between expectations and the relationship health of 296 young adults. Participants who experienced a significant difference between their ideal expectations of how their relationship should be and their actual experience of the relationship reported lower levels of relationship satisfaction, investment and commitment.

Although the quality of romantic relationships has been studied from numerous perspectives, ever developing technology continues to introduce couples to new relational challenges which are currently still understudied (Sprecher, 2009; Stewart et al., 2014). The following section provides an overview of how romantic relationships have evolved in the digital age.

Romantic Relationships in the 21st Century

The infusion of the internet into the day to day lives of people have brought about a revolutionary change in the ways that individuals connect, develop and sustain intimate

relationships (Hertlein & Blumer, 2014). In the new regime, being connected no longer depends on physical proximity but rather on the availability of communication technology (Fleck & Johnson-Migalski, 2015; Sprecher, 2009; Stewart et al., 2014). While mobile communication technologies and online platforms increase connectivity this does not necessarily translate into an increase in meaningful social connections (Turkle, 2011).

The exponential growth in the popularity of online dating sites and the number of romantic relationships that originated on online dating sites seem to support the notion that the internet offers alluring benefits for finding and getting to know potential partners (Finkel et al., 2012; Hertlein & Blumer, 2014; Homnack, 2015; Madden & Lenhart, 2006; Rau, Gao, & Ding, 2008). Online dating sites are a convenient way for individuals to strategically locate other individuals who are seeking a romantic relationship (Ramirez, Sumner, Flueriet, & Cole, 2014). In comparison with many other ways of meeting potential partners, online dating sites enable individuals to find a partner with a mere swipe or tap without even leaving the house (Ramirez et al., 2014). Individuals now have more access to information about a wider pool of potential partners that would be available in face to face encounters (Finkel et al., 2012; Hertlein & Blumer, 2014; Homnack, 2015).

Dating apps, such as OkCupid, Tinder and Bumble, allow users to narrow down the dating pool through personal preferences, whether it be physical or personality traits (Burleson, 2019). These platforms provide the option for users to answer a variety of questions regarding their personal lifestyle, beliefs, values and interests, which ultimately provides a 'match percentage' amongst fellow users. Many dating apps also include a proximity feature, allowing users to narrow down how near or far their options may be (Burleson, 2019). Some users may accumulate too many potential partners which could create the mindset of the 'grass is always greener on the other side' due to the multiple options available at their fingertips. This could lead to endless searches through swiping to

the next potential partner which hinders the development of meaningful romantic relationships (Dodgson, 2018).

Furthermore, it has become common for a conversation, meal, or romantic moment to be disrupted by text messages, emails or other online applications. The everyday intrusions and interruptions due to technology devices which McDaniel and Coyne (2016) refer to as 'technoference' seems to have significant ramifications for romantic relationships (Turkle, 2011). A recent study conducted with 143 female participants revealed the potential impact of technoference on romantic relationships and family lives (McDaniel & Coyne, 2016). The participants reported that their phones, computers and other technology devices were significantly disruptive in their relationships and that higher levels of technoference were associated with greater relationship conflict and lower relationship satisfaction. Some of the participants reported that the perceived underlying messages of technoference include 'What I'm doing on my phone is more important than you right now', 'I'm more interested in my phone than in you,' or, in some cases, 'You're not worthy of my attention' (McDaniel & Coyne, 2016).

Other research findings indicate that the digital lifestyle may offer opportunities to enrich and deepen existing relationships as the opportunities for intimacy and romance are now markedly amplified (Campbell & Murray, 2015; Miller-Ott et al, 2012; Schade et al., 2013). Many couples have reported using the internet to connect to each other, share affection and to learn more about one another (Campbell & Murray, 2015; Murray & Campbell, 2015). For example, couples that conjointly engage in online activities for entertainment, such as social networking or online gaming, create more opportunities for intimate moments which can enhance their closeness and connection (Campbell & Murray, 2015; Murray & Campbell, 2015). Research findings suggest that mobile communication with one's romantic partner has been positively linked with increased commitment and less relationship uncertainty (Jin &

Peña, 2010). Online interactions between partners also seem to make it easier for partners to engage in sexual disclosures which assists couples in improving their sexual satisfaction and ultimately their relationship satisfaction (Cornwell & Lundgren, 2001).

The way couples use the internet can have a significant impact on their relationship satisfaction, which is often a predictor of the length and success of their relationship (Schade et al., 2013). Although the internet is valued for many features, excessive internet use can lead to disruptive interference with daily life. The following section provides an overview of problematic internet use and the possible implications upon the quality of romantic relationships.

Overview of Problematic Internet Use

“Mobile technology has become like a phantom limb it is so much a part of us” (Turkle, 2011, p. 17).

With a high and ever-increasing proportion of South Africans reporting to be connected and active online almost every waking hour of the day (Kemp, 2019) research on the addictive nature of the internet has become imperative. The literature refers to various terms such as ‘internet addiction’, ‘compulsive internet use’ and ‘problematic internet use’ (Kuss & Lopez-Fernandez, 2016) to describe the phenomena that were first proposed by Goldberg in 1996. Since then an increasing number of studies have investigated the epidemiology, diagnostic criteria, neurobiological, psychosocial and neuropsychological aspects of internet addiction with the aim of providing a sufficient knowledge base to conceptualise, diagnose, characterise and treat internet addiction as a pathological disorder (Aboujaoude, 2010; Kuss & Lopez-Fernandez, 2016). Alongside this, there have been scholarly debates about whether internet addiction really exists. Some may argue that because internet use does not involve the ingestion of a substance, then it should not be considered a genuine addictive behaviour (Shapira, Goldsmith, Keck, Khosla, & McElroy, 2000; Treuer, Fábíán, & Fűredi, 2001).

The latest edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (APA, 2013) re-classified 'Gambling Disorder' as an addiction disorder rather than a disorder of impulse control as it was in the past. The implications of this reclassification are potentially far reaching as it redefines addiction to include behaviours that do not involve the consumption of intoxicants to be accepted as a genuine addiction by the psychiatric and medical community (Aboujaoude, 2010; Kuss & Lopez-Fernandez, 2016). Therefore, there is no theoretical reason as to why other problematic and habitual behaviours such as shopping, exercise, sex and internet use, cannot be classed as an addiction (Griffiths & Szabo, 2014).

Even among researchers who believe internet addiction exists there have been debates in the field about whether researchers should study generalised internet addiction or specific addictions on the internet such as internet gambling, internet gaming and online pornography (Griffiths, 2000; Griffiths & Szabo, 2014). Some researchers argue that the internet is merely the medium used as a vehicle for other addictions (Aboujaoude, 2010; Kuss & Lopez-Fernandez, 2016), while others argue that these online behavioural addictions should be included as subtypes of problematic internet use (Young, 2004; Tokunaga, 2015).

Far from clarifying these debates, problematic internet use remains controversial and has been variously construed as a genuine diagnosis, a new symptom manifestation of underlying disorders, or as a psychosocial problem in adjusting to a new medium. Although there is no universally accepted definition, a general consensus amongst researchers is that the phenomenon is characterised by excessive use of the internet associated with time-consuming online activities that cause distress and lead to impairment in important life domains (Griffiths, 2000; Morahan-Martin & Schumacher, 2000; Young, 1999, 2004, 2009). The American Psychiatric Association (2013) refers to problematic internet use as the excessive engagement in online behaviours, including gaming, but not restricted to it, accompanied by the presence of traditional addiction symptoms such as salience, preoccupation, tolerance,

cravings, withdrawal, and relapse, which involves excessive use of chat rooms, social networking or online gaming (as cited in Shaw & Black, 2008). Caplan and High (2006) argue that problematic internet use involves much more than simply an excessive amount of time spent online, as it leads to disruptive behaviours such as aggression, hostility and sacrificing real-life activities and relationships for the sake of online activities (Caplan & High, 2006; Koronczai, et al., 2013).

Adalier and Muezzin (2011) aimed to reveal the relationship between internet addiction and psychological symptoms among 126 university students. The results of this study indicated a significant correlation between internet addiction and psychological symptoms such as interpersonal sensitivity, depression, anxiety, hostility and paranoid ideation.

As mentioned above, many researchers regard the consequences of problematic internet to have the potential to cause severe disruptions in an individual's life (Adalier & Muezzin, 2011; Christakis, 2010; Young, 2004). Opposing researchers have criticised the legitimacy of these research findings claiming that functional impairment associated with internet use is potentially indicative of primary psychosocial problems (Caplan & High, 2006; Tokunaga, 2015; Tokunaga & Reins, 2010). These researchers argue that the internet is merely a communications tool and that the maladaptive use of the internet represents a symptom of underlying psychopathology that would be manifested in some other way, were the internet not available (Shaw & Black, 2008; Tokunaga, 2015).

The frequent presence of problematic internet use in the context of other psychiatric disorders has raised questions regarding the etiology. The following section highlights different perspectives on the causes of problematic internet use.

Etiology of Problematic Internet Use

As with any other condition, the etiology of problematic internet use is often multifactorial and current research predominantly focuses on the neurobiological,

psychological and cultural influences in an attempt to determine causality (Aboujaoude, 2010). The cause and effect relationship between problematic internet use and psychological well-being is currently being debated.

Some researchers argue that psychosocial dysfunctions cause addictive, habitual, or problematic internet use (Kuss & Lopez-Fernandez, 2016; Morahan-Martin & Schumacher, 2000; Te Wildt et al., 2010). A study conducted by Davis (2001) indicated that individuals struggling with poor social skills such as social anxiety, loneliness and depression typically preferred online interaction because they perceive it to be less risky and easier than face-to-face interactions due to its greater anonymity. Similar research findings indicated that internet addiction can be linked to the anonymous outlet that the internet provides to compensate for deficiencies in individuals' lives (Schade et al., 2013; Shaw & Black, 2008; Xiuqin et al., 2010). Deficiencies can range from disabilities, poor family functioning, lack of sociability, to dissatisfaction with one's appearance. The internet also signifies an opportunity to escape from emotional difficulties such as depression, anxiety and stress due to financial difficulties or unemployment. Individuals have the opportunity to create alternative profiles or personalities online where they can fabricate, exaggerate and maximise positive aspects of themselves (Kuss & Griffiths 2011; Lee & Stapinski, 2012; Shaw & Black, 2008). Creating a virtual ideal self provides an immediate psychological escape which reinforces compulsive internet use (Evans, 2003). Individuals can develop a preference for distance, control and anonymity provided by online communication which leads to excessive and compulsive internet use (Schade et al., 2013; Xiuqin et al, 2010). Furthermore, Young (2000) found that the anonymous nature of the internet might be the primary factor that underlies pathological internet use specifically related to the areas of deviant, deceptive and criminal acts as well as online infidelity.

Another perspective views psychosocial dysfunction as the effect of compulsive internet use rather than its cause (Cash, Rae, Steel, & Winkler, 2012). Compulsive and excessive internet use often entails preference for online interaction which implies that online social interactions will be more valued, and less time will be devoted to face-to-face interactions (Cash et al., 2012; Young, 2004). The isolating effects and withdrawal from offline social engagements have potential long-term consequences which could lead to depression and loneliness (Puri & Sharma, 2016)

Other researchers have argued that that the relationship between internet use and psychological well-being might be bidirectional (van den Eijnden, Meerkerk, Vermulst, Spijkerman, & Engels, 2008). This suggests that individuals who are not psychosocially healthy have difficulty not only maintaining healthy social interaction in their real lives but also regulating their internet use which leads to additional problems in their lives. The increased problems might drive them to rely more on their favourite online activity as a means to diminish or escape from their augmented troubles, which could isolate them and increase psychosocial dysfunction (van den Eijnden et al., 2008).

According to Huddleston (2015) the addictive nature of the internet can partially be attributed to neurochemical reactions in the brain. As with drug addiction, problematic internet use is related to dopamine, the neurotransmitter that relays signals to the pleasure system of the brain (Huddleston, 2015; Zhu, Zhang, & Tian, 2015). Research indicates that online activities such as gaming, gambling and receiving and responding to notifications on social media result in the release of dopamine which leads to the pleasurable sensation individuals experience from online activity (Huddleston, 2015; Zhu et al., 2015). The pursuit of pleasure causes individuals to continuously increase the stimulation, which can overload the pathways to the reward system of the brain, also known as dopamine flooding. Continuous dopamine flooding causes the brain to develop a barrier that grows over time and

prevents the optimal amounts of dopamine reaching the reward system. The brain then requires a further increase of stimulation and only significant pleasures can generate enough dopamine to deliver such levels of pleasure. The decreased ability to experience pleasure in everyday activities is referred to as anhedonia. The 'reward-deficiency hypothesis' suggests that those who achieve less satisfaction from everyday activities turn to substances to seek enhanced stimulation from reward pathways. Internet use provides immediate reward with minimal delay, mimicking the stimulation provided by substances such as drugs and alcohol. This potentially leads to internet dependence and excessive internet usage in order to push the exciting stimulation higher and higher (Huddleston, 2015).

An alternative approach to understanding the etiology of problematic internet use is to study the underlying motivations of users. Some researchers suggest that problematic internet use stems from unmet needs (Cash et al., 2012; Song, LaRose, Eastin, & Lin, 2004; Wong, Yeun, & Li, 2004). The self-determination theory, when applied to internet use, suggests that problematic internet use stems from unmet needs and that the internet offers a way to resolve problems that individuals encounter within their lives (Deci & Ryan, 2006; Knee et al., 2013; Wong et al., 2014). The theory proposes that individuals have three major types of innate psychological needs, namely, competence, relatedness and autonomy (Knee et al., 2013; Wong et al., 2014). Competency reflects the need to feel effective at what one does and satisfying a sense of mastery; relatedness refers to the need to experience love, care, attachment and a sense of belonging with others; and autonomy refers to the need for making choices and behaving in a way that is coherent with one's integrated sense of self (Knee et al., 2013; Wong et al., 2014).

All three types of needs are shown to be significant in explaining internet usage (Knee et al., 2013; Wong et al., 2014). Social networking sites such as Facebook and Twitter can provide individuals with a sense of relatedness and autonomy by connecting individuals with

each other and providing them with the opportunity to express themselves (Wong et al., 2014). The ease and accessibility of information on the internet can assist individuals to gain the comprehensive knowledge needed to assist them in satisfying their need for competence (Hertlein, 2012; Young, 2004). Online gaming has the potential to satisfy all three needs through the interaction with other players (relatedness), to complete challenges and move on to the next level (competence) and through making decisions and choices (autonomy) (Wong et al., 2014; Young, 2004). The internet provides individuals with easier and more affordable access to activities that meet their innate needs, thereby fostering dependence as some individuals may rely solely on the internet to meet their needs (Knee et al., 2013).

Despite the gradually increasing number of studies on the etiology and natural history of problematic internet use it is not yet well understood and further research studies are required (Kuss & Lopez-Fernandez, 2016).

Subtypes of Problematic Internet Use

Within the internet addiction phenomenon, five subtypes have been classified by Young (1999), depending on which component of the internet individuals are addicted to (Chakraborty et al., 2010). The subtypes illustrate the various manifestations of internet addiction and include cyber-sexual addiction, cyber-relationship addiction, net compulsions, online gaming addiction and information addiction.

Cyber-sexual addiction. Cybersex is any form of online communication that is sexually oriented such as the viewing of online pornography, sexting or the exchange of personal naked pictures. Cyber-sexual addiction refers to excessive and compulsive cybersex which leads to serious negative consequences for the individual's physical, mental, social and/or financial well-being (Whitbourne, 2014). According to statistics provided by a global online pornography provider, Pornhub Insights (2018), South Africans spend 10 minutes and 14 seconds per visit to such sites which is higher than the world average of 9 minutes and 16

seconds.

Although research in this field is still emerging, current findings indicate that men are more likely than women to engage in cybersex and that they tend to seek out their sexual fantasies online (Whitbourne, 2014). Women tend to seek out relationships online and prefer anonymous communication in which they can hide their appearance. Research findings indicated that women are more likely to join a chatroom than to view pornography (Whitbourne, 2014).

Cyber-relationship addiction. Cyber-relationship addiction refers to an addiction to social networking, chat rooms, texting, and messaging to the point where online relationships become more important than face-to-face relationships (Young, 2009). A cyber relationship can be defined as a romantic or sexual relationship initiated and maintained through online conversations (Anderson & Emmers-Sommer, 2006). Online dating and social networking sites have become more socially acceptable and many individuals regard online platforms as an accessible and safe way to meet potential friends or partners (Stephure, Boon, MacKinnon, & Deveau, 2009; Whitty & Buchanan, 2005). For individuals who are in a committed relationship, cyber-relationship addiction often leads to infidelities such as acts of cybersex or even possibly physical meetings between partners (Cravens & Whiting, 2014; Young, 2004). Many individuals who engage in recreational cyber relationships and have real-life partners, do not feel that they are being unfaithful (Stephure et al., 2009; Whitty & Buchanan, 2005).

Net compulsions. Net compulsions refer to obsessive online gambling, shopping or online trading. The focus is often on winning or financial gains which often leads to significant financial losses, the disruption of important responsibilities and relationship difficulties (Young, 2009). The internet provides easier and better gambling, shopping and trading conditions than offline conditions due to its convenience and greater accessibility as

individuals can use their smartphones, tablets and laptops anytime at any location (Hertlein, 2012; Wood & Williams, 2007; Young, 2009). This contributes to the illusory sense of control experienced by online gamblers (Wood & Williams, 2007; Young, 2009). Kairouz, Paradis and Nadeau (2011) found that online gamblers make riskier bets and have a greater tendency to engage in excessive gambling behaviour in terms of frequency of play and time and money spent than offline gamblers.

Information Addiction. Information addiction refers to compulsive web surfing, database searches and constantly checking emails, online news, or social networking sites. Individuals will tend to spend a disproportionate amount of time searching for, collecting and organising information. Information addiction often leads to the neglect of important tasks and can lead to unproductive behaviours that influences individuals work performance and social life (Young, 2009).

Online gaming addiction. Online gaming addiction refers to excessive online gaming which results in a lack of sleep, proper nutrition and social isolation, in order to spend more time online (Young, 2009). Kuss and Griffiths (2012) highlight that in severe cases some individuals will play for ten to twenty hours straight in a single gaming session which often results in the neglect of work and family responsibilities. In many online games, the player must create a character by choosing the race, species, history and heritage and an even more detailed representation for their characters such as height, eye colour, weight and profession. The players are often also expected to name their characters (Griffiths & Hussain, 2009). Many games also require the players to play for long periods at a time in order for the character to become stronger, smarter, and more powerful over time. As players spend more time online living as their created character in another word, they can begin to identify with their character blurring the distinction between reality and fantasy (Griffiths & Hussain, 2009).

Online gaming offers the element of competition as many games are based on skill and require a quick reaction time and high levels of sustained concentration and attention (Wong et al., 2014). The online platform provides players with the opportunity to experiment with parts of their personality such as taking leadership roles, being more vocal and even in some cases, adopting new identities (Griffiths & Hussain, 2009; Hussain, Griffiths, & Baguley, 2012). Gaming addiction is one of the fastest growing forms of internet addiction, especially among children and adolescents (Kuss & Griffiths, 2012). Furthermore, players who become preoccupied with online gaming tend to lose interest in real life activities and relationships (Griffiths & Hussain, 2009). A study conducted by Gilbert, Murphy and Avalos (2011) indicated that some individuals reported that they had better quality communication and were more satisfied with online virtual gaming partners than they were with their real-life romantic partner. The study indicated that there is the potential for the quality of romantic relationships to decrease as a result of online gaming activity. However, these findings might only apply to situations where one partner uses gaming for individual fulfilment. Research has indicated that in relationships where both partners are involved in frequent online gaming relationship satisfaction increased (Campbell & Murray 2015; Schade et al., 2013). Helsper and Whitty (2010) confirmed that relationship satisfaction is only negatively implicated when one partner engages in online gaming alone, or when couples disagree about engaging in online gaming.

Although research on addictive internet use has increased exponentially, the phenomenon remains controversial and research on different aspects of its manifestation remains unclear (Kuss & Lopez-Fernandez, 2016). A consensus regarding the diagnostic criteria and measures is needed to improve reliability across studies and to develop effective and efficient treatment approaches (Cash et al., 2012; Kuss & Griffiths, 2012; Kuss & Lopez-Fernandez, 2016.) The following section provides an overview of the existing literature focused on the diagnostic criteria for problematic internet use.

Diagnostic Criteria for Problematic Internet Use

The internet offers many benefits for its routine usage that improves individuals' quality of life and the functioning of society, which is not usually a feature associated with addiction. Therefore, the detection and diagnosis of problematic internet use is difficult and it is important to have criteria that differentiates between normal and pathological internet use (Cash et al., 2012; Christakis, 2010; Kuss & Lopez-Fernandez, 2016).

Young (2004) emphasised the importance of distinguishing between internet addiction and internet abuse. Internet abuse refers to a milder form of problematic internet use that also leads to some degree of impairment in the individual's life domains, but the individual has more control and is able to abide by the limits (Young, 2004). Kim et al. (2009) argue that internet use should be viewed on a continuum where healthy internet use is on the one side of the spectrum and transitions to problematic internet use when internet consumption falls out of the user's control.

Despite the growing consensus amongst researchers that the constellation of symptoms associated with problematic internet use can be considered as an addiction, there is still no official diagnostic system (Cash et al., 2012; Chakraborty et al., 2010; Kuss & Lopez-Fernandez, 2016; Shaw & Black, 2008). In an attempt to bridge the gap in the literature many scales have been developed to measure problematic internet use around the world (Laconi, Rodgers, & Chabrol, 2014). The majority of these scales are adapted from the DSM-IV criteria for gambling disorder and/or substance use disorders (Laconi et al., 2014).

Young (1996) was the first scholar to associate compulsive internet use with behavioural impulse control disorders as defined in the DSM-IV. According to Young (2004) pathological gambling is viewed as articulating mostly with the compulsive nature of internet use, defining it as an impulse-control disorder that does not involve a substance. She developed an internet addiction assessment based on 8 'yes/no' questions derived from the

criteria for pathological gambling (See Table 3.1). Young (1996) was of the opinion that any respondent who answered ‘yes’ to 5 or more of the items could be considered to be an internet addict.

Table 3.1

Young’s Diagnostic Questionnaire for Internet addiction

1	Persistent thoughts about previous online activity or anticipating next online session.
2	Needs to spend increasing amounts of time on the internet in order to achieve the same level of satisfaction.
3	Has made repeated unsuccessful efforts to control, cut back, or stop internet use.
4	Experiences restlessness, mood swings, depression or irritability when attempting to cut down or stop internet use
5	Excessive internet use associated with a loss of a sense of time or neglect of responsibilities, staying online longer than originally intended.
6	Has jeopardised or risked the loss of a significant relationship, job, educational or career opportunities because of the internet.
7	Has lied to family members, therapist, or others to conceal the extent of involvement with the internet
8	Uses the internet as a way of escaping from problems or of relieving a dysphoric mood, including feelings of helplessness, guilt, anxiety, depression

Many researchers have identified, validated and proposed similar criteria, which often overlaps with Young’s work (Christakis 2010; Laconi et al., 2014; Shaw & Black, 2008).

Thatcher’s Problematic Internet Use Questionnaire (TPIUQ), also derived from the criteria for pathological gambling, is the only questionnaire developed in South Africa (Laconi et al., 2014) and is therefore employed in the current study. The questionnaire aims to measure problematic internet use and consists of these subscales, namely, Online preoccupation, Adverse effects and Social interactions (Thatcher & Goolam, 2005b).

Each subscale will be discussed below.

Online preoccupation. Online preoccupation refers to when internet use becomes the dominant activity in an individual's daily life (Young, 2004). Individuals who are preoccupied with the internet spend substantial amounts of time engaging in online activities, recovering from it or thinking about it even when they are offline (Thatcher & Goolam, 2005b). According to a study conducted by Young (2004) 81.5% of participants that struggled with internet addiction felt preoccupied with the internet, 29.6% of participants frequently thought of the internet even when not online and 33.3% of participants reported to often look forward to their next online session. The study also indicated that 25.9% of the participants were dishonest with others and would lie to conceal the extent of their internet use including the amount of time spent online or the specific activities they engaged in online.

Kerkhof et al. (2011) investigated the impact of compulsive internet use upon the marital well-being of 190 newlywed couples. The findings indicated that compulsive internet use, rather than the frequency of internet use, is negatively related to all aspects of relationship quality. Other research findings indicated that online preoccupation often leads to a reduction in the amount of quality time spent with partners, thereby reducing relationship satisfaction for both individuals (Kraut et al., 1998; Vorderer, Klimmt, & Ritterfeld, 2004). Some of the participants who were preoccupied with the internet reported to have fewer positive feelings for their partner and were therefore less willing to invest in the partner and in their relationship (Vorderer et al., 2004).

Roberts and David (2016) indicated that online preoccupation is often associated with partner 'phubbing' that is, diverting one's attention to a digital device while in the company of one's partner. Research on partner 'phubbing' revealed that online preoccupation negatively affects face-to-face interactions as phubbers struggle to maintain eye contact and

often misunderstood what was being discussed (Chotpitayasunondh & Douglas, 2016). Furthermore, a study conducted with 145 adults indicated that 'phubbing' leads to increased jealousy and lack of relationship cohesion which ultimately leads to relationship dissatisfaction (Krasnova, Abramova, Notter & Baumann, 2016). The study also indicated that phubbing, by lowering relationship satisfaction, enhanced depression and decreased overall life satisfaction (Krasnova et al., 2016).

Adverse Effects of Online Behaviour. A characteristic of problematic internet use is the continued use of the internet despite persistent physical or psychological problems associated with its use (Thatcher & Goolam, 2005b). Adverse consequences resulting from online behaviour could range from academic under-achievement and procrastination (Thatcher, Wretschko, & Fridjhon, 2007), conflict with others about internet overuse (Snyder, Li, O'Brien, & Howard, 2015), to negative physical outcomes such as sleep deprivation and emotional problems such as depression and anxiety (Kim, Jang, Lee, Lee, & Kim, 2018; Young, 2004).

The use of the internet while driving a motor vehicle is a serious and growing threat that could lead to serious adverse effects. According to the International Transport Forum's Road Safety Annual Report, South Africa has one of the highest road accident rates in the world with around 25% of those accidents caused by the use of smartphones while driving. The survey also revealed that individuals no longer use their smartphones exclusively for texting while driving but also for browsing social media and checking their emails (World Health Organisation, 2011).

According to the study conducted by Young (2004), 33.35% of participants that struggled with internet addiction reported that they had jeopardised a significant relationship, job, educational or career opportunity because of their internet use. Furthermore, 62.9% of

participants frequently experienced being sleep deprived as a result of internet use and 44.4% frequently neglected their daily obligations due to their preference for online activities.

Social interactions. Thatcher and Goolam (2005a) indicated that South African internet dependent individuals associated 83% of their time online with social interaction activities. Many online applications are characterised by a high degree of social interaction and social support. Online social interaction refers to the communication between at least two people in an online platform and includes behaviours such as instant messaging and emails, social networking, emotional disclosures, cybersex and online dating (Thatcher & Goolam, 2005). Although online social interaction has been proven to enhance the quality of relationships (Bargh & McKenna, 2004), an associated feature of problematic internet use often includes a preference for online social interaction as opposed to face-to-face interactions (Caplan & High, 2006; Deatherage et al., 2014; Park et al., 2012).

Young (2004) indicated that 53% of the participants in her study who struggled with internet addiction also reported serious romantic relationship problems predominantly due to online infidelity and online sexual activity. Morahan-Martin and Schumacher (2000) also indicated that online social interaction can pose a threat to existing romantic relationships. The study suggested that excessive social interactions online have been linked with a decreased quality in primary relationships, loneliness, depression and social isolation. Furthermore, Findlay (2004) indicated that the excessive use of the internet was associated with personal problems including a negative impact upon marriages and other close relationships, especially if the internet was used to maintain other online relationships. Internet dependent individuals reported more concealment and less disclosure with their offline partners as opposed to their online social interaction activities (Kerkhof et al., 2011; Nongpong & Charoensukmongkol, 2016). Partners of those who engage in excessive online interactions with strangers have reported increased jealousy and suspicion, a loss of trust,

loneliness and relationship dissatisfaction. Participants reported a temptation to engage in online surveillance which could lead to increased conflict within the relationship (Helsper & Whitty, 2010; Nongpong & Charoensukmongkol, 2016).

Conclusion

In modern society the internet has become an integral part of individuals' lifestyles and many couples are incorporating the internet into their daily interactions with each other. Romantic relationships have significant implications which extend beyond the relationship, including emotional well-being and physical health. Therefore, understanding the impact of technology upon the quality of romantic relationships is important. This chapter provided an overview of research findings relating to relationship satisfaction, how relationships have evolved in the digital age, problematic internet use, and the implications of excessive and compulsive internet use upon romantic relationships. Problematic internet use remains controversial and research findings indicate that the internet has the potential to enhance or erode the quality of romantic relationships depending on how the medium is used. The majority of research studies conducted relevant to the current study have tended to focus on different aspects of internet use and the impact of technology on relationship variables such as communication, intimacy and commitment. Research studies incorporating all aspects of problematic internet use and its impact on relationship satisfaction are limited. Within the South African context research on the effects of technology on intimate relationships is still in its infancy and researchers are just beginning to scratch the surface.

The aim of the current study was to investigate the effect of problematic internet use on the quality of romantic relationships by analysing the intersections of four primary variables, namely relationship satisfaction, online preoccupation, adverse effects of online behaviour and social interactions, within a South African context. The study attempts to contribute to the conceptualisation of problematic internet use and thereby provide insight into the

psychological and social sequelae of the phenomenon. The following chapter will provide an overview of the research methodology employed in the study to achieve the research aims.

Chapter 4

Research Methodology

Introduction

This chapter describes the research methodology followed in the current study. Firstly, the rationale, research aim and research objectives of the current study is provided.

Thereafter, an overview of the research design, research procedure, research measures, and the participants and sampling procedure utilised in this study is provided. This is followed by a description of the data analysis procedure. The chapter is concluded with a description of ethical principles followed by the researcher while conducting the current study.

Problem Statement

As previously mentioned, the influence of the internet on interpersonal relationships is a relatively new research domain as its usage has flourished in recent years (Bynum, 2010; Punyanunt-Carter & Wrench, 2017). Within a South Africa context, the number of internet users and the amount of time spent online increases annually (Kemp, 2019). A recent report revealed that 54% of South Africans are active internet users and the average internet user spends about 8 hours online per day (Kemp, 2019).

As individuals incorporate the internet into their daily lives the ways individuals connect, develop and maintain romantic relationships has changed significantly (Campbell & Murray, 2015, Jin & Peña, 2010, Murray & Campbell, 2015). Research indicates that an increasing number of couples terminate their relationships due to internet related behaviours (Aydın, Sarı, & Şahin, 2018; Fleck & Johnson-Migalski, 2015; Stewart et al., 2014). For example, Cravens and Whiting (2014) indicated that an increasing number of divorces cite secret behaviours on Facebook as the major contributing factor to the termination of marriages. The way individuals use the internet can have a significant impact on their relationship satisfaction, which is often a predictor of the length and success of their

relationship (Hertlein, 2012; Hertlein & Blumer, 2014; Schade et al., 2013). For many individuals, their romantic relationships comprise the most meaningful aspect of their lives and therefore, it has become increasingly important for scholars to explore and describe the impact of internet use on romantic relationships (Facio & Resett, 2013; Hertlein, 2012).

Despite the rapid growth of internet use, there is surprisingly little research that has been conducted on internet use, problematic internet use, and the effects of technology on intimate relationships within a South African context (Kuss & Lopez- Fernandez, 2016; Thatcher & Goolam, 2005a; Tokunaga, 2012). To the researcher's knowledge there has not been any research studies published that incorporate all aspects of problematic internet use and its impact on the quality of romantic relationships within a South African context. This study aims to explore a relatively unstudied area, thereby contributing to the literature and providing a foundation for future research hypotheses.

Research Aim and Objectives

The primary aim of this study was to explore the effects of problematic internet use on individuals' satisfaction with their offline intimate relationships. To achieve the research aim, the relationship between a) relationship satisfaction, b) problematic internet use and its three subconstructs, namely, c) online preoccupation, b) social interaction and d) adverse effects of online behaviour, were explored. Therefore, the objectives of the study included:

1. To determine the prevalence of low and high levels of problematic internet use and the levels of relationship satisfaction.
2. To explore the relationship between the levels of problematic internet use and the levels of relationship satisfaction.
3. To explore the relationship between the levels of relationship satisfaction and the levels of online preoccupation, social interaction, and adverse effects of online behaviour.

The primary hypothesis that was tested in the present study which relates to the aim and objectives can be stated as follows: The level of problematic internet use will be negatively related to the level of relationship satisfaction. The digital age has introduced new and evolving environmental influences which underline the changes in romantic relationships when couples incorporate technology into their day to day lives (Hertlein, 2012; Hertlein & Blumer, 2014; Johnson, 2010). The increased accessibility, acceptability, accommodation, and affordability of the internet enhances the likelihood for some individuals to develop problematic internet use which could result in negative relational consequences (Hertlein, 2012; Hertlein & Blumer, 2014; Young, 2009), such as increased conflict, jealousy, online infidelity, social isolation, and loneliness (Kerkhof et al., 2011; Kraut et al., 1998; Puri & Sharma, 2016; Young, 2009). The behaviours associated with problematic internet use leads to changes in relationship structures and processes which can have negative implications for romantic relationship satisfaction (Hertlein, 2012; Hertlein & Blumer, 2014; Young, 2009).

As previously mentioned, problematic internet use is characterised by online preoccupation, the preference for online social interactions, and the persistent use of the internet despite the adverse effects related to its use (Young, 2004, 2009). Therefore, the general hypothesis of this study is broken down into the following three specific hypotheses. A brief justification for each hypothesis is also provided.

H₁: The level of online preoccupation will be negatively related to the level of relationship satisfaction.

Online preoccupation refers to when internet use becomes the dominant activity in an individual's daily life (Young, 2004). The substantial amounts of time individuals spend in engaging in online activity could lead to disruptions in the quality time individuals spend with their partners (Campbell & Murray, 2015; Hertlein & Blumer, 2014; Schade, et al., 2013). The intrusion of 'our time' with 'me time' in order to engage in online activities can

create a divide between partners which leads to the lack of relationship cohesion and intimacy, and increased conflict and jealousy (Fox, 2013; Krasnova et al., 2016; Vorderer et al., 2004), which could ultimately lead to relationship dissatisfaction (Chotpitayasunondh & Douglas, 2016).

H₂: The level of online social interaction will be negatively related to the level relationship satisfaction

The internet provides multiple online platforms for communication and information sharing. Many online applications and social networks are designed to encourage self-disclosure which can blur interpersonal boundaries (Hertlein, 2012; Hertlein & Blumer, 2014). Couples that share private information online with virtual friends might violate their relationship boundaries which could lead to tension in their relationships (Hertlein & Blumer, 2014; Millham & Atkin, 2016; Wisniewski et al., 2011). Online communication provides users with a sense of safety and control which leads to more self-disclosure and thereby increases the level of intimacy and commitment between virtual friends (Anderson, 2005; Cornwell & Lundgren, 2001). According to Morahan-Martin and Schumacher (2000), the preference for online social interactions can pose a threat to existing romantic relationships as it can be linked with loneliness, depression, social isolation and decreased relationship quality.

H₃: The level of adverse effects due to online behaviour will be negatively related to the level of relationship satisfaction.

As previously mentioned, the adverse consequences resulting from excessive internet use can include procrastination and decreased productivity (Thatcher et al., 2007), and physical, relational and emotional difficulties (Kim et al., 2018; Snyder et al., 2015; Young, 2004). Problematic internet use influences individuals' ability to effectively balance their life roles

(Hertlein & Blumer, 2014; Young 2004). The frequent participation in online activities can be time-consuming which could result in the neglect of household duties, interruptions in the couple's quality time and conflict over internet overuse, which could lead to decreased relationship satisfaction (Hertlein & Blumer, 2014; Vorderer et al., 2004).

The below diagram serves as a summary to conceptualise the research hypotheses within the theoretical framework used in the current study.

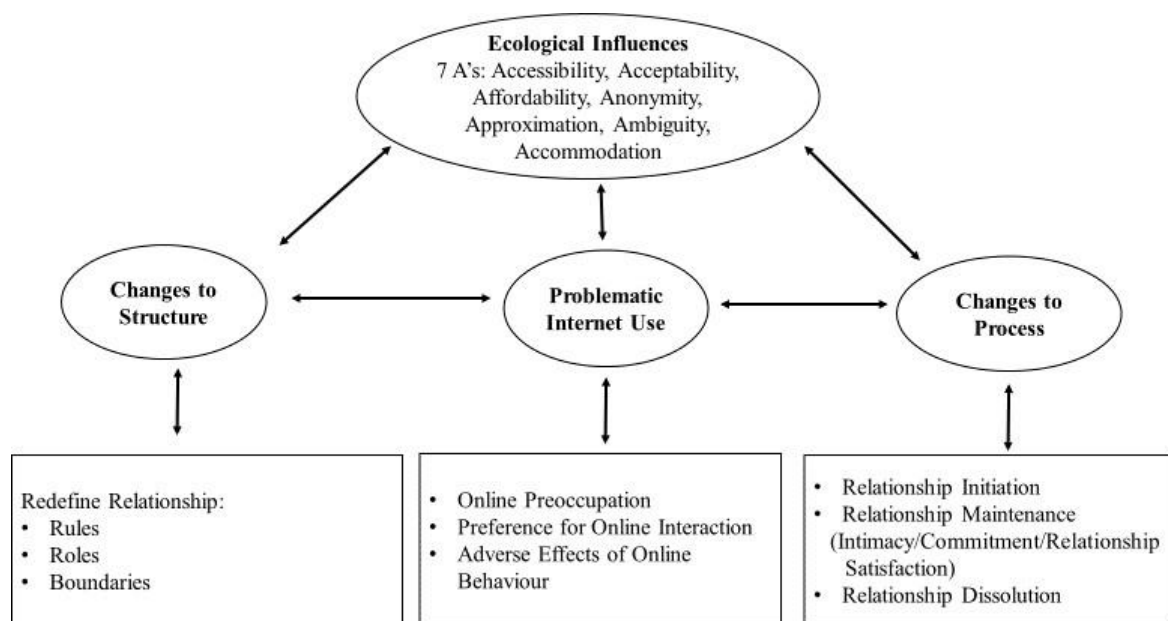


Figure 4.2. The CFT framework incorporating problematic internet use and relationship satisfaction, adapted from Hertlein and Blumer (2014)

The Couple and Technology Framework (CFT) describes the process of how technology influences couple functioning. The framework identifies the ecological elements associated with internet use which inspires change in relationship structures and processes (Hertlein & Blumer, 2014). The aim of the framework is to assist health care professionals to maintain a systematic focus when treating couples who struggle with issues relating to internet use such as problematic internet use (Hertlein, 2012).

Research Design

A research design is a framework used for the planning, implementation, analyses and interpretation of data to answer the research question (Creswell, 2013). In order to achieve the above-mentioned research aim and objectives, a quantitative, non-experimental, cross-sectional, research design was used.

According to Neuman (2011), quantitative research can be defined as a structured scientific method which generates numerical data to provide information about a phenomenon. The method can be used to quantify attitudes, opinions, behaviours, and other defined variables by using statistical tests to reach conclusive statements about the data (Babbie, 2011). Quantitative data collection methods are more structured and usually include various forms of surveys. This allows the researcher to remain objectively separated from the subject matter and therefore results are typically considered to be more objective and unbiased (Babbie, 2011; Creswell, 2013; Neuman, 2011). An advantage of a quantitative research methodology is that the research findings could be generalised to a larger population if the sample size is representative enough (Babbie, 2011; Neuman, 2011). However, the results are limited due to the numerical factors. The pre-set answers of the surveys used to collect data, which result in numerical outcomes, might not accurately reflect how people feel (Borrego, Douglas, & Amelink, 2009; Neuman, 2011).

A non-experimental research designs lacks the manipulation of an independent variable and the random assignment of participants to conditions. The researcher observes what occurs naturally without intervening in any way (Babbie, 2011). This design is typically classified as either descriptive or correlational. The current study used a correlational research design as statistics were used to measure and describe the relationship (strength and direction) between different variables (Thompson, Diamond, McWilliams, Snyder & Snyder, 2005). According to Creswell (2013), correlational designs can also be used to examine if

changes in one or more variables are related to changes in other variables. Although correlational research designs do not determine causation, such a design is useful when exploring a relatively unstudied area because it provides a starting point which guides the formulation of more focused research questions for future research (Creswell, 2013; Neuman, 2011). Correlational designs are typically cross-sectional in nature which means that all the data about the variables were collected from one sample at one point in time (Babbie, 2011).

Cross-sectional research designs are one of the most commonly used designs in social research because they are generally considered to be simpler and less expensive and can describe several variables of a sample or population (Creswell, 2013; Neuman, 2011). Although cross-sectional design cannot be used to analyse variables over time, it can be used to prove or disprove assumptions that could aid in guiding more in-depth longitudinal research in the future.

A quantitative, non-experimental, cross-sectional, research design was appropriate for this study as it was aimed to investigate the relationship between problematic internet use, its subconstructs, namely, online preoccupation, social interaction, and the adverse effects of online behaviour and romantic relationship satisfaction. Due to the limited research on the impact of the internet upon romantic relationships within a South African context, this study aims to aid in guiding future research within this field.

Participants and Sampling

The participants in this study were South African students registered at Nelson Mandela University. The university is the largest higher education institution in the Eastern and Southern Cape, with approximately 29 000 students enrolled on seven different campuses of which six are in the Nelson Mandela Metropole (Nelson Mandela University, 2019). Only participants registered in the Nelson Mandela Metropole was included in the study due to the geographical location of counselling services made available for participants that might feel

distressed due to the research process. This decreased the population size to approximately 27560 students. The participants were not approached by the researcher directly but were provided with the opportunity to participate in the study on their own accord through completing an online survey. The advantage of this technique was that it was cost effective and targeted individuals that have internet access, who in essence might be prone to problematic internet use.

In order to achieve the research aim and objectives, a non-probability, purposive sampling method was employed. Nonprobability samples are those in which members of the population have an unknown chance of being included in the study (Babbie, 2011). Although this technique produces samples that are not representative of the population, thereby limiting the generalisation of results, it is useful when the researcher is unable to identify all members of a population, to explore whether a problem exists, or to determine the nature of a problem (Bryman, 2012).

Purposive sampling, a type of non-probability sampling, was utilised in this study where the sample was selected based on certain characteristics relevant to the research aim and objectives. Participants were required to be a registered student at Nelson Mandela University, to have daily internet access and to be in a committed romantic relationship. A committed romantic relationship was defined as a relationship in which both partners experience relational cohesion, exclusivity, and anticipated continuance of the relationship (Anderson & Emmers-Sommer, 2006). The participants were included irrespective of their age, race, field of study, sexual orientation or the duration of their romantic relationship.

Participants were also required to have daily internet access. The participants were included irrespective of what they use the internet for, the location or device they use to connect to the internet or the duration that they have been using the internet.

The final sample included 388 participants ($n = 122$ males, $n = 266$ females) who's age ranged between 18 and 55 years ($M_{\text{age}} = 23.11$ years, $SD = 16.62$). The participants were most likely to be dating (89.18%) and more than half of the participants (61.56%) indicated that they have been in a relationship for less than two years. The student population was considered appropriate for the present study as younger and more highly educated individuals are thought to be more frequent users of technology (Hertlein & Webster, 2008; Kemp, 2019; Thatcher & Goolam, 2005a). The formation of mutually satisfying romantic relationships is considered to be one of the major developmental tasks in early adulthood (Arnett, 2000; Erikson, 1982). Therefore, it has become increasingly important for researchers to explore the impact of technology on romantic relationships specifically in the student population. A comprehensive description of the sample is outlined in Chapter Five for a full description of the sample.

Data Collection

Data was collected by means of an online survey, an increasingly popular method of survey research as it enables the researcher to reach many participants within a short time period (Babbie, 2011). The questionnaire consisted of three sections (see Appendix C to E) and contained a series of closed-ended questions in the form of rating scales and multiple-choice questions. Close-ended questions were utilised in the present study because it has the advantage of yielding quantifiable data, being easily understood by participants and being time efficient to complete (Babbie, 2011; Bryman, 2012). The restricted responses reduced ambiguity, increased consistency and enhanced the comparability of the answers provided by the participants (Babbie, 2011). However, a disadvantage of closed-ended questions could have included the loss of spontaneity in the participants' answers. The pre-defined responses could have evoked ideas that the participants would not otherwise have considered or led to frustration when they were compelled to provide an answer although their desired answer

was not provided as a choice (Neuman, 2011). The following section provides an overview of the research measures used to gather data.

Research Measures

As previously mentioned, a self-report survey was utilised to gather quantitative data. The first section of the survey contained 6 biographical questions and 5 questions relating to the participants' use of the internet (Appendix C), the second section comprised of the Problematic Internet Use Questionnaire (Appendix D) and the last section included the Relationship Assessment Scale (Appendix E).

The biographical questionnaire was designed to elicit certain background information about the participants to provide a detailed description of the sample. The information gathered in this section of the questionnaire were not included in the main data analyses. Participants were asked to provide information regarding their gender, age, level of education, their field of study, current relationship status, and the duration of their relationship. A question was included to determine whether participants study in the Information Technology (IT) sector as this information will have important implications when examining the amount of time participants spend online. Research findings indicate that IT professionals are at greater risk for the development of problematic internet use when compared to individuals in other professions (Rohith & Patil, 2017; Thatcher et al., 2007). The study is specifically concerned with problematic internet use, therefore it is considered useful to explore how, when and where participants have access to the internet, as well as what they use the internet. Such information enabled the researcher to gain a comprehensive understanding of the composition of the sample.

To investigate the prevalence of problematic internet use amongst the research participants, the Problematic Internet Use Questionnaire (PIUQ) developed by Thatcher and Goolam (2005b) was utilised. The self-report questionnaire was developed in South Africa in

a two-stage process involving a pilot study with a sample of 279 participants and a validation study with a larger sample of 1795 participants. The results of the validation study indicated good internal reliability with $\alpha = 0.90$. The PIUQ contains 20 questions that were designed to assess problematic internet use in terms of online preoccupation (10 test items), adverse effects (7 test items) and social interactions (3 test items). The three subscales showed good internal reliability with $\alpha = 0.88$ for Online Preoccupation, $\alpha = 0.77$ for Adverse Effects, and $\alpha = 0.74$ for Social Interaction. The three sub-scales showed good internal consistency and were also found to be positively correlated with one another (Thatcher & Goolam, 2005b).

Respondents in Thatcher and Goolam's (2005b) study were asked to indicate on a 5-point Likert scale that ranges from 'never' (1) to 'always' (5) the extent of various symptoms and behaviours of problematic internet use. The PIUQ assesses problematic internet use on a scale of 20 to 100, where 100 is an indication that internet use is causing significant problems in life. According to Thatcher and Goolam (2005b) participants that scored 70 or more were classified as having problematic internet use; participants that score between 40-69 had a tendency towards problematic internet use, and participants that score below 39 did not experience problematic internet use.

In order to investigate the participants' relationship satisfaction in their offline romantic relationships, the Relationship Assessment Scale (RAS) was used. The RAS is a brief measure of overall relationship satisfaction (Miller & Tedder, 2011) that was developed on a sample of 125 dating university students at Texas Tech University (Hendrick, 1988). It consists of seven items, each rated on a 5-point Likert scale where a total score of 27 will indicate complete satisfaction with the relationship and a score of 15 will indicate complete dissatisfaction with the relationship. The higher the score, the more satisfied the respondent is with his/her relationship. The RAS is unique in that items are worded to apply to all types of intimate relationships such as married couples, cohabiting couples, engaged couples, or

dating couples (Hendrick, 1988; Miller & Tedder, 2011; Renshaw, McKnight, Caska, & Blais, 2010). The RAS correlates with the Dyadic Adjustment Scale which measures love, sexual attitudes, self-disclosure, commitment, and investment in a relationship (Renshaw et al., 2010). Vaughn and Baier (1999) indicated that the RAS can discriminate between dating couples that stay together and those that break up. According to Graham, Diebels and Barnow (2011), the RAS demonstrates an acceptable level of overall reliability with an average Cronbach alpha coefficient of 0.87 across studies. Renshaw et al. (2010) indicated that the RAS demonstrates good internal consistency and test-retest reliability and can briefly and adequately assess satisfaction in intimate relationships. The reliability and validity indices for the South African student population has not been established. Cronbach's alpha was used to establish the reliability and internal consistency of the RAS in the current study (See Chapter 5).

Research Procedure

Firstly, the approval of the research proposal was obtained from the Psychology Department at Nelson Mandela University. Thereafter, the approval from the Faculty Postgraduate Studies Committee (FPGSC) and the Deputy Vice-Chancellor of Research and Engagement of Nelson Mandela University was obtained in order to conduct the research study with students from Nelson Mandela University. Once permission was obtained the process of creating an online survey commenced by meeting with a qualified IT professional to create an internet-based survey. The survey consisted of a biographical questionnaire (Appendix C), the Problematic Internet Use Questionnaire (Appendix D) and the Relationship Assessment Scale (Appendix E). The UCLIN Psychology Clinic was approached and permission was obtained to provide their contact details if any participants requested to make use of their services should they feel that they were experiencing symptoms associated with problematic internet use.

Once the online survey was completed, contact was made with prospective participants via email using the Nelson Mandela University-MEMO communication platform (Appendix A). The email to students briefly outlined the study and the ethical information which provided an in-depth explanation of the study was attached (Appendix B). Participants who agreed to participate in the study followed the link that directed them to the online survey. Participants were required to confirm that they have read the attached consent before they were able to access the online survey. Once respondents had completed the survey, they were able to view their results as well as a brief interpretation of the results with a link to an article that contained more information about problematic internet use. The survey was circulated three times in the course of two months to gain as many responses as possible. All the data collected was automatically stored on a spreadsheet that was password protected, in line with stringent ethical standards.

Data Analysis

The results from the online survey were automatically coded and entered into a Microsoft Excel spreadsheet which was used to conduct the preliminary data analyses. Firstly, the data was cleaned by removing incomplete responses. Thereafter, various analyses were conducted by a PhD student in statistics at the Nelson Mandela University. The statistical analyses proceeded from the preliminary data analysis to the main data analysis.

The preliminary data analysis included item analysis, using Cronbach's alpha, to establish the accuracy and reliability of the questionnaires used in the current study. This was followed by conducting frequency analyses to measure the demographical variables of gender, age, level of education, field of study, relationship status and duration, as well as the questions that pertained to internet use. This enabled the researcher to gain a comprehensive understanding of the composition of the sample. Thereafter, data obtained from the Problematic Internet Use Questionnaire and Relationship Assessment Scale were subdivided

into quartiles forming four new categorical variables for each data set. The quartile ranges were used to summarise the data obtained, provided insight into the variability of the data set and enabled the researcher to make comparisons between the different categories (Moore, Notz, & Fligner, 2013).

Following the preliminary data analysis, the main data analysis was conducted using inferential statistical analyses. This form of analysis was utilised to ensure that the results were of statistical significance and did not merely occur due to chance (Moore et al., 2013). Firstly, the Chi-square test for independence was used to establish if there was a significant relationship between the variables as hypothesised. This test examines whether rows and columns of a contingency table are statistically significantly associated (Moore et al., 2013). The data was entered into a contingency table according to the different quartile ranges. Each row represented a category for one variable and each column represents a category for the other variable. Thereafter, a multinomial logistic regression model was employed to explore the correlation between the variables. Logistic regression is a type of regression where the independent variable is used to predict the dependent variable (Long & Freese, 2006). While regression analysis is used in social research when the number of dependent variable categories are two, multinomial logistic regression is employed when dependent variables involve three or more categories (Long & Freese, 2006). Multinomial logistic regression can be used to explain the correlation between the dependent variable and the independent variable when their values are obtained with rating scales (Moore et al., 2013). The main data analyses were performed using R statistical software (version 3.5.3).

Ethical Considerations

In addition to the scientific considerations in designing and executing social research, there are various ethical principles that should be considered when conducting social research (Creswell, 2013). According to Babbie (2012), ethical practice can be defined as conforming

to the standards of conduct of a given profession about what is proper and improper in the conduct of scientific inquiry. During the research process, the researcher adhered to the ethical considerations prescribed by the Health Professions Council of South Africa (2008) for health researchers. The ethical principles relevant to the current study included that of obtaining permission from the host institution, informed consent, voluntary participation, no harm to the participants and confidentiality.

The necessary permission was obtained from FPGSC and from the Deputy Vice-Chancellor of Research and Engagement at Nelson Mandela University before proceeding with the research process. The aims, risks, benefits and the use of the data collected were conveyed to all participants before obtaining their consent to partake in the research study.

Social research studies often require participants to become aware of aspects of themselves that they do not generally consider (Bryman, 2012). Even if the information they provide is kept confidential, the requirement for participants to think about some matters can be upsetting (Babbie, 2011). The researcher remained aware of vulnerable participants and strived to minimise their risk for harm. The researcher was cognisant that the study may cause distress for some participants and therefore made the necessary arrangements for participants to be referred to the appropriate professionals for counselling should they experience symptoms of problematic internet use or feel distressed in any way due to the research process. To the researcher's knowledge there were no participants that requested counselling services after completing the online survey.

Ensuring voluntary participation and confidentiality was of the utmost importance throughout the study. It was emphasised to all participants that participation in the study is voluntary and that they would be able to withdraw from the study at any time without any consequences. Participants were also reassured that their personal identities would not be revealed when reporting the research findings. In order to maintain confidentiality and to

protect the participants' right to privacy, all the data collected was coded into a database to ensure anonymity. The data collected by the researcher will be securely stored electronically by the Primary Responsible Person, Professor Greg Howcroft, for a period of five years for validation and auditing purposes. In addition to fulfilling ethical obligations to the research participants, the researcher strived to adhere to the ethical obligations to the scientific community by providing an accurate description of the research findings (Chapter 5) and research limitations (See Chapter 6).

Conclusion

This chapter described the research methodology used in the current study. An overview of the research design, research procedure and measures, participants, sampling and data analysis procedure utilised in this study was provided. A quantitative, cross-sectional research design was used where participants were requested to complete an online survey. The aim of the current study was to investigate the impact of internet use on romantic relationship satisfaction. In order to achieve the aim of the relationship between five variables namely relationship satisfaction, problematic internet use, and its three subconstructs, namely online preoccupation, adverse effects of online behaviour, and social interaction was explored. The data obtained from the only survey was exported to Microsoft Excel spreadsheet to conduct the data analysis. Finally, the ethical considerations relevant to this study were discussed. The next chapter discusses the research findings.

Chapter 5

Results and Discussion

Introduction

This chapter presents the results of the study as obtained from the data analysis. The findings will be discussed against the backdrop of the existing literature and theoretical framework to explore the effects of internet use on romantic relationships. In line with the study's first objective, the preliminary data analysis is presented. This included the reliability of the questionnaire used, a description of the research participants and the demographic characteristics of participants that met the criteria for problematic internet use. Following the preliminary data analysis, the results of the main analysis will be presented and discussed. In line with the study's second and third objectives, namely the relationship between problematic internet, online preoccupation, online social interactions, the adverse effects of online behaviour and general relationship satisfaction will be explored and described. Throughout the chapter the results of the present study are discussed through the lens of the CFT framework to explain the processes that underlie the between the variables. The following figure presents a summary of the research aims, objectives, hypotheses and data analysis of the current study.

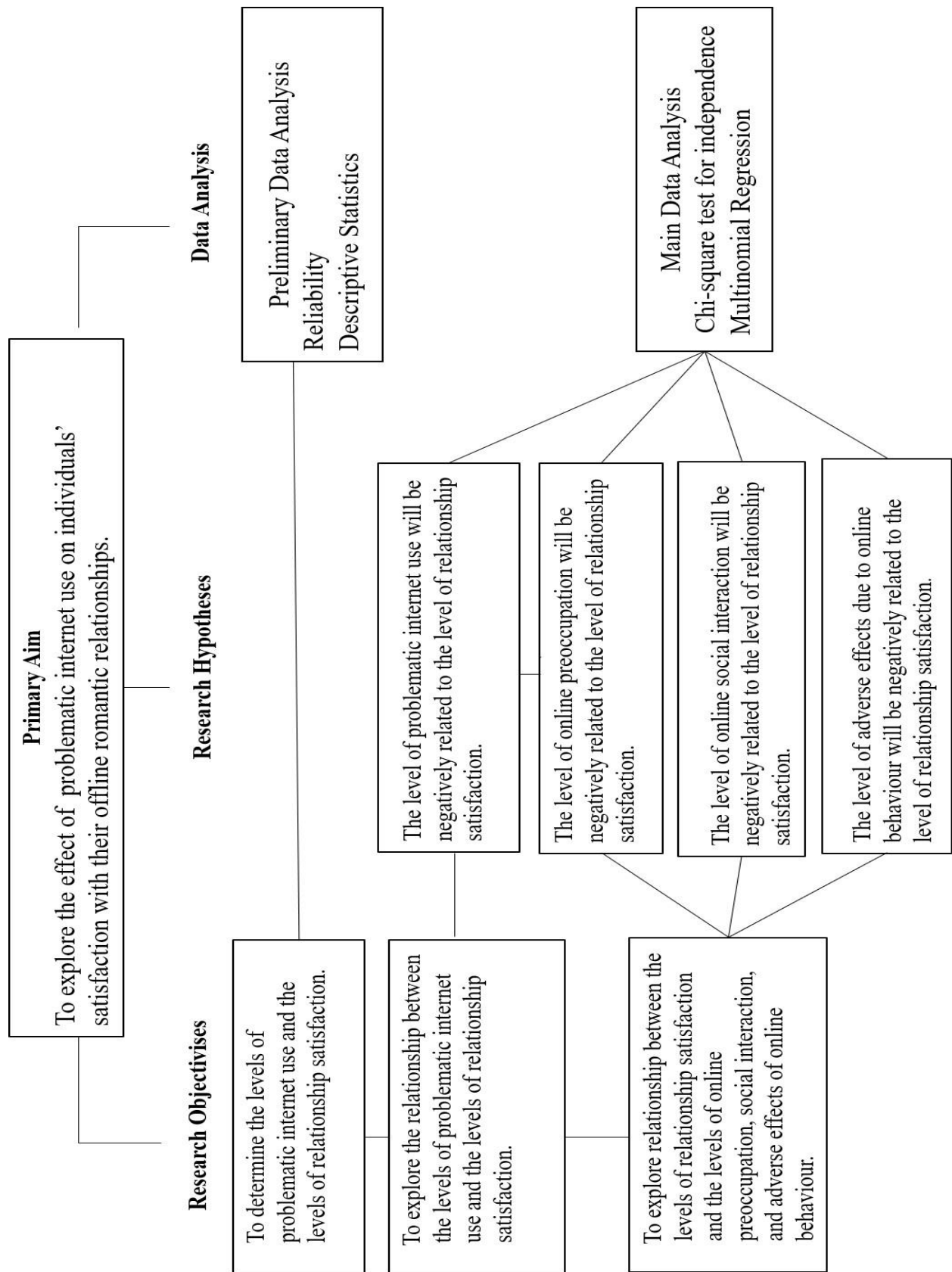


Figure 5.1. Overview of research aim, objectives and hypotheses and data analyses procedure

Preliminary Data Analysis

The results obtained from the online survey was cleaned and recoded where necessary. All incomplete responses were removed which reduced the initial sample size ($N = 500$) to $N = 388$ participants. Thereafter, item analysis was conducted to ensure the accuracy of the questionnaires used in the current study. Item analysis assessed the contribution of each item to the measurement, examined the logical or theoretical fit of the item and examined the item's contribution to both reliability and validity (Moore et al., 2013). It can also be used to identify items that should be revised or discarded to enhance the accuracy of the measure (Moore et al., 2013). Cronbach's alpha, one of the most widely used measures of internal consistency, was used to assess the reliability of the questionnaires use in the current study. Cronbach's alpha ranges from 0.00 (no reliability) to 1.00 (perfect reliability) with 0.70 as the accepted standard for research and 0.90 for professionally developed scales (Garson, 2016). Streiner (2013) emphasised the importance of not relying on published alpha estimates for measurements as the alpha value is a property of the scores on a measure from a specific sample of participants. Therefore, a reliability analysis was undertaken of the Relationship Assessment Scale and the Problematic Internet Use Questionnaire to establish the reliability of the questionnaires for the sample of the current study before conducting the main analyses.

The Reliability of the Relationship Assessment Scale. The results obtained from the reliability analyses suggest that the RAS has good internal reliability, with an overall $\alpha = 0.84$. (See Table 5.1). This indicates that the RAS is suitable to use when conducting social research with a student population in a South African context. The result obtained is consistent with the findings of Graham et al. (2011) and Renshaw et al. (2010) who indicated that the RAS demonstrated an acceptable level of overall reliability with an average Cronbach alpha coefficient of 0.87.

Table 5.1

Reliability of the Relationship Assessment Scale

Scale	Cronbach's Alpha
Relationship Assessment Scale	0.84
Individual Items of the Relationship Assessment Scale	
Q1: How well does your partner meet your needs?	0.80
Q2: In general, how satisfied are you with your relationship?	0.86
Q3: How good is your relationship compared to most?	0.80
Q4: How often do you wish you had not gotten into this relationship?	0.84
Q5: To what extent has your relationship met your original expectations?	0.81
Q6: How much do you love your partner?	0.82
Q7: How many problems are there in your relationship?	0.85

* 95% confidence level

The Reliability of the Problematic Internet Use Questionnaire. The results of the internal reliability analyses suggest that the PIUQ has good internal reliability, with an overall $\alpha = 0.91$. The systematic item analysis revealed good internal reliability of the first two subscales with $\alpha = 0.88$ (Online Preoccupation) and $\alpha = 0.77$ (Adverse Effects) which is consistent with the results obtained by Thatcher and Goolam (2005a) in the pilot study that developed the PIUQ. However, the third subscale (Social Interactions) obtained $\alpha = 0.65$ which demonstrated questionable reliability. This contrasts with Thatcher and Goolam's (2005b) results for this subscale ($\alpha = 0.74$ for Social interactions). The analysis revealed that item seven on the PIUQ (*Do you tend to seek out certain individuals on the Internet?*) reduced the subscale's reliability and if the item were to be removed the subscale would obtain $\alpha = 0.76$. Furthermore, the results indicated a weak correlation to the other two items on this subscale ($r = 0.26$ and $r = 0.27$), which could indicate that the item might require revision when used in future research studies.

Table 5.2

Reliability of the Problematic Internet Use Questionnaire

Scale	Cronbach's Alpha
Problematic Internet Use (20 Items)	0.91
Subscale	
Online Preoccupation (10 Items)	0.88
Social Interaction (3 Items)	0.65
Adverse Effects (7 Items)	0.77

* 95% confidence level

Biographical Description of the Sample. The biographical questionnaire included variables such as gender, age, highest level of education, relationship status, duration of the relationship and what the internet is used for (See Appendix C). The sample consisted of 388 participants with 31% males and 69% females ($n = 122$ males, $n = 226$ females) whose ages ranged between 18 and 55 years ($M_{age} = 23.11$ years, $SD = 16.62$). The age range of the sample seems similar to other samples obtained in the South African context which suggests that the majority of internet users are below the age of 35 (Kemp, 2019; Thatcher & Goolam, 2005). The majority of the participants were undergraduate students (73,2%) at Nelson Mandela University and 14.18% of participants are pursuing their studies in the IT field. Most participants have been using the internet for at least 5 years (86,85%). The participants were most likely to be dating (89.18%) and more than half of the participants (61.56%) indicated that they have been in a relationship for less than two years. A complete demographic description of the sample is presented in Table 5.3.

Table 5.3.

General Description of the Sample

Variable	Total (N=388)	%
Gender		
Male	122	31%
Female	266	69%
Total	388	100%
Age		
18-23	264	68.04%
24-29	98	25.26%
30-35	15	3.87%
36-41	5	1.28
42-47	4	1.03%
48-53	2	0.52%
Total	388	100%
Highest Level of Education		
Matric	235	60.57%
Diploma	49	12.63%
Bachelors	66	17.01%
Honours	20	5.15%
Masters	17	4.38%
Doctorate	1	0.26%
Total	388	100%
Field of Study		
IT field	55	14.18%
Other	333	85.82%
Total	388	100%
Duration of Internet Use		
< 6 months	2	0.52
6 months – 12 months	5	1.29
1-2 years	3	0.77
2-5 years	41	10.57
5-10 Years	166	42.78
>10 years	171	44.07
Total	388	100%
Relationship Status		
Dating	346	89.18%
Engaged	24	6.19%
Married	18	4.63%
Total	388	100%

Relationship Duration

Less than 1 year	135	34,79%
1 year – 1 year and 11 months	104	26,80%
2 years – 2 years and 11 months	49	12,63%
3 years – 3 years and 11 months	38	9,79%
4 years – 4 years and 11 months	14	3,61%
5 years – 5 years and 11 months	7	1,80%
6 years – 10 years	31	7,99%
10+ years	10	2,58%
Total	388	100%

Since the study is specifically concerned with problematic internet use it is useful to provide information about the internet use of the participants. Various studies suggest that an individual's online activity can have significant implications for romantic relationships (Anderson, 2005; Hertlein, 2012; Miller-Ott et al., 2012; Przepiorka & Blachnio, 2016). More than half of the participants (58,25%) use the internet daily for university-related activities and 18.55% of the sample indicated that they use the internet for more than two hours a day for work-related activities such as communicating via emails and doing research for assignments. The majority of participants use the internet daily to communicate with their partners, friends and family with 30.15% of participants spending more than two hours daily using online applications such as WhatsApp and Facebook Messenger. Similar to other samples obtained in the South African context (Kemp, 2019), 56,70% of participants indicated that they utilise the internet daily for social networking with 23.45% participants indicating that they spend more than two hours a day online using social networking sites such as Facebook, Twitter and Instagram. A high percentage of participants (76,29%) indicated that they use the internet daily for entertainment purposes such as browsing, watching online videos or playing online games.

Only 5.16% of participants indicated that they engage in online dating and 1.5% of participants indicated that they use the internet for more than two hours daily to use online dating applications such as Tinder, Bumble and OkCupid. When exploring the level of

relationship satisfaction of the participants that engage in online dating, it became evident that the majority (83.3%) scored below the first quartile on the relationship satisfaction scale. This indicates that these participants are less satisfied in their relationship when compared to the participants that do not engage in online dating. It can be hypothesised that these participants are potentially looking for alternative partners online. A further description of the participants' online activity is presented in the figure below.

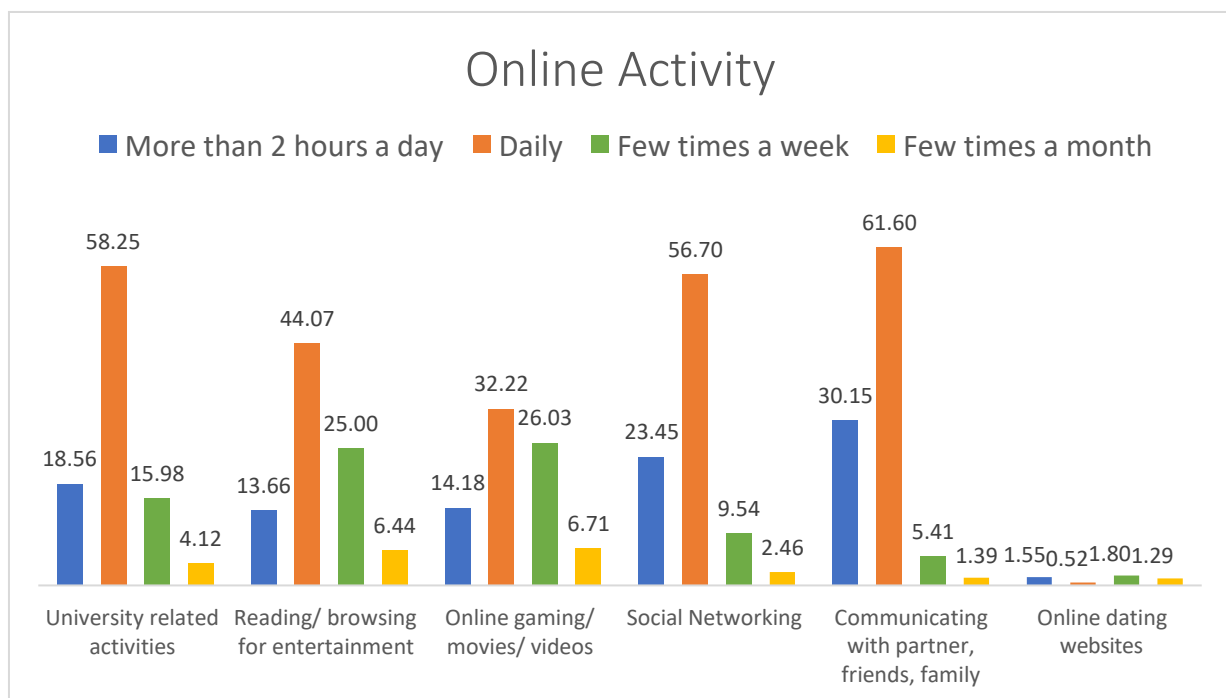


Figure 5.2. Participants' use of the internet

In accordance with the study's first objective, the levels of problematic internet use and the levels of relationship satisfaction of the participants were explored and are discussed below.

The Prevalence of Problematic Internet Use. As previously mentioned, problematic internet use is characterised by a lack of control over internet use, spending an excessive amount of time online, and the need to spend more time online to feel satisfied (Young, 2004). Individuals that struggle with problematic internet often feel irritable when they are unable to go online are dishonest with their partners about the time spent online and are willing to sacrifice their relationships for the sake of online activity (Caplan & High, 2006;

Koronczai, et al., 2013; Miller-Ott et al., 2012). According to Thatcher and Goolam (2005b), the higher participants score on the PIUQ the less control they have over their internet use. Kerkhof et al. (2011) found that the lack of control over internet use is linked directly to relationship dissatisfaction for both partners.

To determine the prevalence of problematic internet use in the present study, Thatcher and Goolam's (2005b) criteria were used to identify participants that experience significant problems with internet use. According to their criteria participants that scored 70 or more on the PIUQ indicate problematic internet use; participants that scored between 40-69 have a tendency towards problematic internet use and experience frequent problems with internet use; and participants that score below 39 do not experience problematic internet use and have complete control over their internet use. The prevalence of problematic internet use in the present study was found to be 6.44%, with 52.38% of participants indicating a tendency towards problematic internet use while 40.72% of participants indicated no problematic internet use. This result seems similar to that of Tang et al.'s (2014) Chinese sample of adolescents where 6% of the sample reported problematic internet use. The prevalence rate in this study appears to be higher than that of Thatcher et al. (2008) South African sample of 1399 participants (3.81% for IT workers and 1.91% for non-IT workers), Adiele and Olatokun's (2014) Nigerian sample of university students (3.3%) and lower than and Lin and Tsai's (2002) Taiwanese sample of adolescents (12%). However, comparisons across studies may be misleading as the prevalence rates differ depending on the sample size, the measure used, and the criteria applied to establish problematic internet use.

The results from the present study indicated that 56% of participants that met the criteria for problematic internet use were female while 44% were male. Of the total sample, 5.26% of females and 9.01% of males met

the criteria for problematic internet use. The results indicated that the prevalence rate for problematic internet use was higher amongst males than females. Thatcher and Goolam's (2005a) South African sample indicated that 80% of participants that met the criteria for problematic internet use were male. It is, however, important to note that 75% of the participants in their sample were male. Leung and Lee (2012) indicated that females were more likely to experience internet problems than males in a sample of 501 adolescence of which 58.8% were males. The sample of the present study contained more female participants (69%) which could have an impact on the prevalence of problematic internet use amongst genders. The gender imbalance in the present study could potentially be explained by the influence of gender on online survey participation (Smith, 2008). Some research studies have indicated that women are more willing to participate in surveys relating to romantic relationships (Graham & Chattopadhyay, 2012; Rosenbaum, 1997).

In the present study, 64% of participants that met the criteria for problematic internet use were within the age group of 18-23 and 78% of participants had used the internet for longer than 5 years. This finding is similar to Thatcher and Goolam's (2005a) results which indicated that all participants with problematic internet use have been using the internet for longer than two years. The following table provides the demographic description of the participants that met the criteria for problematic internet use.

Table 5.4

Demographic Description of Participants with Problematic Internet Use

Variable	Total (N=25)	%
Gender		
Male	11	44%
Female	14	56%
Total	25	100%
Age		
18-23	16	64%
24-29	4	16%
30-35	1	4%
36-41	1	4%
42-47	3	12%
Total	25	100%
Highest Level of Education		
Matric	11	44%
Diploma	6	24%
Bachelors	5	20%
Masters	3	12%
Total	25	100%
Field of Study		
IT field	4	16%
Other	21	84%
Total	25	100%
Duration of Internet Use		
1-2 years	1	4%
2-5 years	2	8%
5-10 Years	15	60%
>10 years	7	28%
Total	25	100%
Relationship Status		
Dating	22	88%
Engaged	2	8%
Married	1	4%
Total	25	100%

To achieve the aim of the research study which was to investigate the relationship between internet use and relationship satisfaction, the results obtained from the PIUQ were

subdivided into quartiles forming four new categorical variables. Participants that scored within the first quartile reported that they do not experience problematic internet use (Thatcher & Goolam, 2005b). Participants that scored within the second and third quartile have a tendency towards problematic internet use. These participants might experience some difficulties related to internet use, but they still experience a sense of control over their internet use and are able to abide by the limits (Thatcher & Goolam, 2005b; Young, 2004). Participants that scored within the fourth quartile were identified by the PIUQ as having a significant risk of problematic internet use. These participants are at risk of jeopardising a significant relationship, educational or career opportunity because of the internet (Thatcher & Goolam, 2005b; Young, 2004). Figure 5.3 provides an illustration of the four categories.

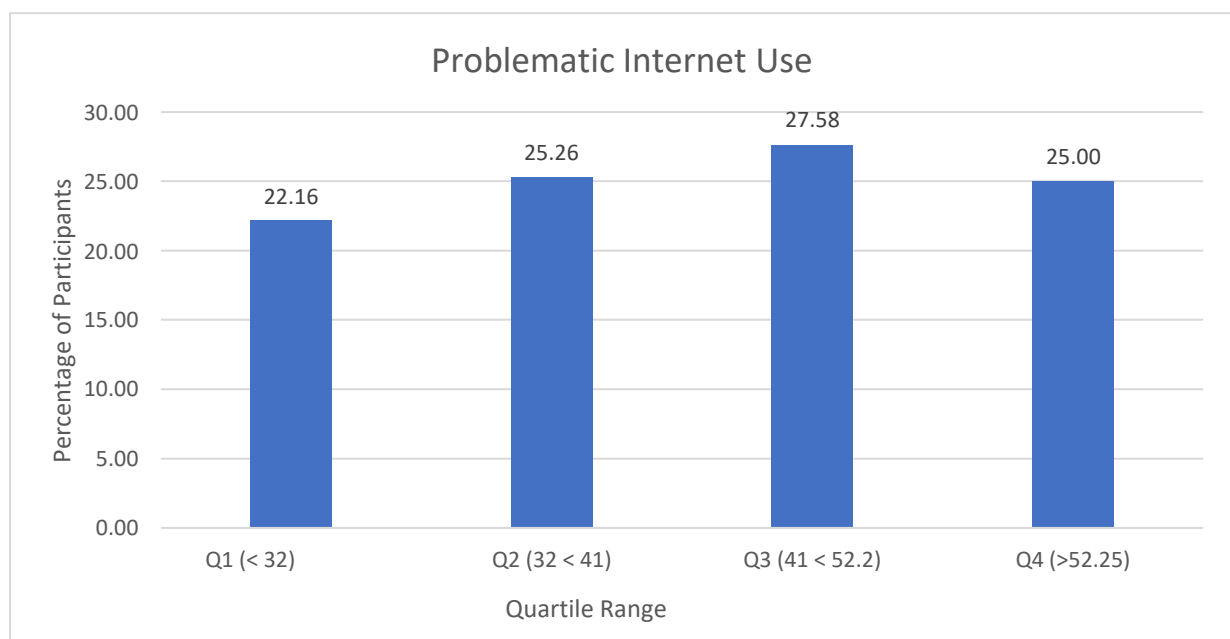


Figure 5.3. Problematic internet use categories

The Relationship Satisfaction of Participants. In line with the first research objective, namely, to explore the level of relationship satisfaction of the participants, the data obtained from the Relationship Assessment Scale were divided into quartile ranges forming four new categorical variables (See Figure 5.4). Participants that scored within the first quartile were considered to be the less satisfied with their relationship in comparison to those who scored within the fourth quartile who were categorised as more satisfied. For the purpose of the present study, participants falling into the second and third quartile were categorised as being neither more nor less satisfied with their relationship. The results obtained demonstrated the levels of relationship satisfaction of the sample.

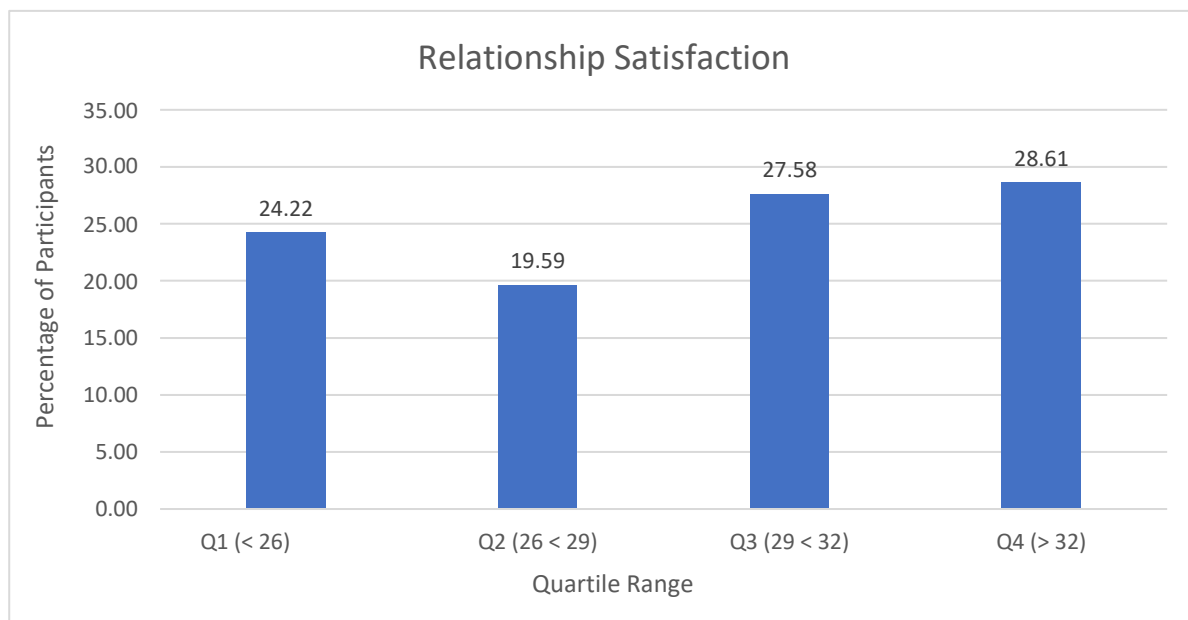


Figure 5.4. Relationship satisfaction categories

Main Data Analysis

The following sections will present the results obtained and will include inferences made from the data. The information is presented according to each research objective and hypotheses (See Figure 5.1). Firstly, the Chi-square test for independence was used to establish if there is a significant relationship between the variables as hypothesised. The data were subdivided into quartiles and is presented in a contingency table where each row

represents a category for one variable and each column represents a category for the other variable. Thereafter, multinomial logistic regression was employed to explore the correlation between the variables. The results are discussed in terms of the processes that underlie the link between these variables.

The relationship between problematic internet use and relationship satisfaction.

In line with the second objective of the study, the relationship between internet use and relationship satisfaction was explored. More specifically, the following hypothesis was tested: The level of problematic internet use will be negatively related to the level of relationship satisfaction. As anticipated, the Chi-square test for independence revealed that there is a significant association between problematic internet use and relationship satisfaction, $X^2(9, N= 388) = 18.955, p = 0.0255$. Table 5.5 presents the percentage of participants according to the quartile ranges. More specifically, the logistical regression analyses (Table 5.6) indicated a decrease in relationship satisfaction with increasing levels of problematic internet use (Wald test p-value = 0.0091336). The results revealed that participants that scored within the fourth quartile for problematic internet were 2.74 times more likely to be less satisfied in their relationship in comparison to the participants that scored within the first quartile for problematic internet use (OR=2.74, CI= (1.51 – 5.08), p-value= 0.001). Participants who scored within the third quartile for problematic internet use were 1.92 times more likely to be less satisfied with their relationship when compared to those who scored in the first quartile (OR=1.92, CI= (1.07 – 3.50), p-value= 0.0315).

Table 5.5

Problematic Internet Use and Relationship Satisfaction in Percentages

Relationship Satisfaction	Problematic Internet Use				Row totals
	Q1	Q2	Q3	Q4	
Q1	4,12	5,67	6,96	7,47	24,22
Q2	3,09	3,61	5,67	7,22	19,59
Q3	5,93	8,25	6,19	7,22	27,59
Q4	9,79	7,47	6,70	4,64	28,60
Column Totals	22.94	25	25.52	26.55	100

Table 5.6

Multinomial Logistical Regression Analysis for Problematic Internet Use and Relationship Satisfaction

Problematic Internet Use	Adjusted Odds Ratio (95% Confidence Interval=CI)	P-Value	Wald Test P-Value
Q1	1.00		0.0091336
Q2	1.44 (0.79 – 2.67)	0.2367	
Q3	1.92 (1.07 – 3.50)	0.0315	
Q4	2.74 (1.51 – 5.08)	0.0011	

The primary aim of the present study was to explore the effects of problematic internet use on the quality of offline romantic relationships. The impact of the internet on romantic relationships has been debated and research reveals that it is likely to serve both positive and negative roles in facilitating and hindering closeness in relationships (Hertlein & Webster, 2008; Räsänen & Kouvo, 2007). The results from the present study indicate that the level of problematic internet use is negatively related to romantic relationship satisfaction. Different

processes may underlie this link between problematic internet use and relationship quality.

Some researchers argue that problematic internet use cause disruptions in relationship maintenance behaviours thereby decreasing relationship satisfaction, intimacy, and commitment in the relationship (Hertlein, 2012; Sprecher, 2009; Stewart et al., 2014). Others argue that dissatisfying relationships and social deficiencies lead to increased internet use as a easy way to escape an unhappy relationship or social isolation (Vorderer et al., 2004; Xiuqin, et al., 2010). Studies have indicated that depression and anxiety are positively related to problematic internet use (Rehman, Evraire, Karimiha, & Goodnight, 2015; Young & Rogers, 1998). Malinga (2016) indicated that 39% of internet users in South Africa reported that they connect to the internet when they are stressed, anxious or depressed in order to make themselves feel better (Malinga, 2016). The Internet offers a platform to create an alternative reality where deficiencies in individuals' lives may be counteracted (Xiuqin et al., 2010). Considering the amount of control individuals have over their virtual reality compared to the lack of control felt in the real world, individuals' can become emotionally attached to their virtual reality, finding more satisfaction in online activities than in activities in the physical world.

Some researchers argue that the relationship between internet use and psychological well-being are bidirectional (Caplan, 2002; van den Eijnden et al., 2008). This suggests that individuals who are not psychosocially healthy have difficulty not only maintaining healthy social interaction but also struggle to regulate their internet use which leads to additional problems in their lives. Although the present study did not specifically investigate the direction of the effect of problematic internet use on relationship satisfaction, the theoretical framework employed in the study suggests that problematic internet use hinders the development and maintenance of romantic relationships (Hertlein, 2012; Hertlein & Blumer, 2014). According to the CFT the internet introduces new and evolving influences which

underline the changes in relationship structure (roles, rules and boundaries) and relationship processes (relationship initiation, maintenance and termination) when couples incorporate technology into their day to day lives (Hertlein, 2012; Hertlein & Blumer, 2014; Johnson, 2010). The results of the present study revealed that participants who reported higher levels of problematic internet use reported lower levels of relationship satisfaction indicating that internet use has the potential to change relational dynamics. Turkle (2011) highlights that digital connections offer the illusion of companionship without the demands of friendship. Preferring to text rather than to talk enables the individual to hide from others and each other even as people are tethered to each other.

As previously mentioned, problematic internet use is characterised by online preoccupation, the preference for online social interaction and persistent internet use despite adverse effects relating to its use (Thatcher & Goolam, 2005b; Young 1996). The following sections will examine the unique effect of each aspect on relationship satisfaction.

The relationship between online preoccupation and relationship satisfaction.

In line with the third objective of the study, the relationship between online preoccupation and relationship satisfaction was explored. More specifically, the following hypothesis was tested: The level of online preoccupation will be negatively related to the level of relationship satisfaction. As anticipated the Chi-square test for independence revealed that there is a significant relationship between relationship satisfaction and online preoccupation, $X^2(9, N= 388) = 17.301, p = 0.04421$. Table 5.7 presents the percentage of respondents according to the quartile ranges. More specifically, the logistic regression analyses (Table 5.8) indicated a decrease in relationship satisfaction with increasing levels of online preoccupation (Wald test p-value = 0.020991). Participants that scored within the fourth quartile for online preoccupation were 2.34 times more likely to be less satisfied in their relationship compared to those who scored within the first quartile for online preoccupation

(OR=2.34, CI= (1.29 – 4.29), p-value= 0.005) and participants that scored within the third quartile were 1.76 times more likely to be less satisfied in their relationship (OR=1.76, CI= 0.98 - 3.17), p-value= 0.058).

Table 5.7

Online Preoccupation and Relationship Satisfaction in Percentages

Relationship Satisfaction	Problematic Internet Use: Online Preoccupation				Row totals
	Q1	Q2	Q3	Q4	
Q1	4,64	5,93	6,44	7,22	24,23
Q2	3,09	3,87	6,96	5,67	19,59
Q3	5,93	8,25	4,90	8,51	27,58
Q4	9,02	7,73	6,19	5,67	28,61
Column Totals	22,68	25,77	24,48	27,06	100

Table 5.8

Multinomial Logistical Regression Analysis for Online Preoccupation and Relationship Satisfaction

Problematic Internet Use Online preoccupation	Adjusted Odds Ratio (95% Confidence Interval=CI)	P-Value	Wald Test P-Value
Q1	1.00		0.020991
Q2	1.18 (0.65 - 2.16)	0.578	
Q3	1.76 (0.98 - 3.17)	0.058	
Q4	2.34 (1.29 - 4.29)	0.005	

The results of this study suggest that excessive online activity is negatively related to relationship satisfaction. This is in line with previous studies which have found that the substantial amount of time individuals use to engage in online activity causes disruptions in the quality time individuals spend with their partners (Campbell & Murray, 2015; Hertlein & Blumer, 2014; McDaniel & Coyne, 2016; Schade, et al., 2013). These studies support the reduction hypothesis (Kraut et al., 1998) which states that excessive online communication hinders the development of meaningful face to face relationships. According to Hertlein and Blumer (2014), this is potentially due to the violation of relationship rules and boundaries and increased opportunities to develop new relationships. Turkle (2011) highlights that individuals bend to the inanimate with new solicitude – thereby individuals avoid fear, risks and disappointments of relationships by expecting more from technology and less from each other.

In the digital age, couples are faced with the challenge to redefine relationship rules regarding communication and self-disclosure (Hertlein & Blumer, 2014; Millham & Atkin, 2016; Roggensack & Sillars, 2013). Rules regarding communication will generally include the frequency and content of online interactions. Individuals who are preoccupied with internet use are more likely to violate these rules by engaging in excessive online activity and diverting their attention from their partners to their digital devices. This often leads to disruptions in conversation and a reduction in the amount of quality time and the frequency of intimate moments which are associated with greater relationship conflict and lower relationship satisfaction (McDaniel & Coyne, 2016). Bakardjieva (2005) refers to the internet as the “gate in the living room” (p. 149) that has the potential to impede communication between couples that would have taken place. Partners may be sitting in the same proximal space but are separated by their online activity on separate devices (Bakardjieva, 2005). While the internet connects people in different locations it can easily disconnect couples who

are in the same room (Kraut et al., 1998) which negatively impacts relationship cohesion, intimacy, commitment and relationship satisfaction (Chotpitayasunondh & Douglas, 2016; Fox, 2013; Krasnova et al., 2016; Vorderer et al., 2004).

In addition, individuals who are preoccupied with the internet are more likely to engage in online self-disclosure (Young, 2004) and have increased opportunities to develop relationships, both appropriate and inappropriate (Hertlein & Blumer, 2014). Individuals that share private information online with virtual friends might violate their relationship boundaries by including other people within the couple system that were not expected or agreed on by the couple (Wisniewski et al., 2011) which could lead to conflict and jealousy (Hertlein & Blumer, 2014; Millham & Atkin, 2016; Wisniewski et al., 2011). Furthermore, individuals who are preoccupied with the internet will often prefer to spend time on the internet rather than with their partner (Young, 2004). Although giving priority to online activity may not be deliberate due to the addictive features of the internet, it may inform the individual regarding how they feel about their partner. The self-perception theory proposes that individuals infer their attitudes and beliefs from observing their own behaviour as if they were a third party (Bem, 1972). It is possible that when individuals perceive themselves as preferring to engage in online activity rather than spending time with their partner, they infer that they have fewer positive feelings for their partner and therefore report lower relationship satisfaction (Kerkhof et al., 2011).

The relationship between online social interactions and relationship satisfaction.

In line with the third objective of the study, the association between online social interactions and relationship satisfaction was explored. The Chi-square test for independence revealed that there is no significant relationship between relationship satisfaction and social interaction, $X^2(9, N= 388) = 10.058, p = 0.3458$. Table 5.9 presents the percentage of participants broken down into quartile ranges. The logistic regression analyses (Table 5.10)

also confirmed that social interaction and relationship satisfaction is not significantly related (Wald test p-value = 0.6291).

Table 5.9

Online Social Interaction and Relationship Satisfaction in Percentages

Relationship Satisfaction	Problematic Internet Use: Social Interaction				Row totals
	Q1	Q2	Q3	Q4	
Q1	4,12	3,35	7,47	9,28	24,23
Q2	3,61	3,35	5,15	7,47	19,59
Q3	4,64	3,87	7,73	11,34	27,58
Q4	6,44	6,96	7,73	7,47	28,61
Column Totals	18,81	17,53	28,09	35,57	100

Table 5.10

Multinomial Logistical Regression Analysis for Online Social Interaction and Relationship Satisfaction

Problematic Internet Use Social Interaction	Adjusted Odds Ratio (95% Confidence Interval=CI)	P-Value	Wald Test P- Value
Q1	1.00		0.6291
Q2	0.89 (0.45 - 1.74)	0.729	
Q3	1.17 (0.64 - 2.14)	0.607	
Q4	1.27 (0.72 - 2.28)	0.405	

The results of the present study suggest that the preference for online social interactions does not affect relationship satisfaction in offline relationships. This seems to contradict previous research studies that suggested that the preference for online social interactions can pose a threat to the quality of offline relationships (Anderson, 2005; Campbell & Murray, 2015; Kerkhof et al., 2011; Nongpong & Charoensukmongkol, 2016).

The literature that led to the development of the hypothesis suggested that for some individuals, the internet signifies a place where they can control the impressions others have of them leading to a preference for distance, control, and anonymity provided by online communication (Schade et al., 2013; Xiuqin et al., 2010). Online communication provides users with a sense of safety and control which facilitates frequent self-disclosure and thereby increases the level of intimacy and commitment between virtual friends (Anderson, 2005; Cornwell & Lundgren, 2001). Underwood and Findlay (2004) explored the impact of online relationships on existing offline relationships and found that the majority of participants reported more satisfaction with their online relationship than with their face-to-face relationships. However, few participants considered their online relationship to be more important than their primary relationships. Other studies found that the preference for online social interactions is associated with more concealment and less disclosure in the primary relationship which diminishes intimacy and relationship satisfaction (Anderson, 2005; Campbell & Murray, 2015; Kerkhof et al., 2011; Nongpong & Charoensukmongkol, 2016). On the contrary, Hand et al. (2013) found that even if couples engage in excessive online social networking it does not necessarily affect their offline relationship. Their study indicated that online social interactions did not diminish intimacy between partners, which served as a buffer against relationship dissatisfaction.

It is important to note that the reliability for this subscale was found to be questionable ($\alpha = 0.65$). Moore et al. (2013) emphasised the importance of interpreting research results in the context of reliability as it weakens the statistical analysis and affects the observed association between variables and can lead to potential misinterpretations of the results. Therefore, the results of the present study should be interpreted with caution when exploring the relationship between online social interactions and relationship satisfaction.

The relationship between adverse effects and relationship satisfaction.

In line with the third objective of the study, the association between adverse effects resulting from online behaviour and relationship satisfaction was explored. As anticipated, the Chi-square test for independence revealed that there is a significant association between the level of adverse effects and the level of relationship satisfaction, $X^2(9, N= 388) = 23.112$, $p = 0.00595$. Table 5.11 presents the percentage of respondents within each category. The logistic regression analyses (Table 5.12) indicated a decrease in relationship satisfaction with increasing levels of adverse effects (Wald test p -value = 0.0035247). Participants that scored within the fourth quartile for adverse effects were 2.44 times more likely to be less satisfied with their relationship when compared to participants that scored within the first quartile (OR= 2.44, CI= (1.38– 4.38), p -value= 0.00237), and participants that scored within the third quartile for adverse effects were 1.80 times more likely to be less satisfied in their relationship when compared to those who scored within the first quartile for adverse effects (OR= 1.80, CI= (1.03 – 3.19), p -value= 0.04076).

Table 5.11

Adverse Effects and Relationship Satisfaction in Percentages

Relationship Satisfaction	Problematic Internet Use: Adverse Effects				Row totals
	Q1	Q2	Q3	Q4	
Q1	3,87	4,38	6,96	9,02	24,23
Q2	4,38	2,32	6,96	5,93	19,59
Q3	6,70	5,41	8,76	6,70	27,58
Q4	9,28	7,99	6,19	5,15	28,61
Column Totals	24,23	20,10	28,87	26,80	100

Table 5.12

Multinomial Logistical Regression Analysis for Adverse Effects and Relationship Satisfaction

Problematic Internet Use Adverse effects	Adjusted Odds Ratio (95% Confidence Interval=CI)	P-Value	Wald Test P- Value
Q1	1.00		0.0035247
Q2	0.97 (0.51 - 1.83)	0.092	
Q3	1.80 (1.03 – 3.19)	0.041	
Q4	2.44 (1.38 - 4.38)	0.002	

The results of the present study indicate that the adverse effects resulting from online behaviour negatively effects relationship satisfaction in primary relationships. This result is in line with previous studies which have found that problematic internet use leads to physical, emotional and relational difficulties (Kim et al., 2018; Snyder et al., 2015; Young, 2004;). According to Hertlein and Blumer (2014) this is potentially due to the violation of relationship rules, difficulty with balancing life roles and disruptions in relationship maintenance behaviours (Young 2004). The accessibility, affordability and acceptability of the internet make it possible to engage in online activity from any location at any time (Hertlein & Blumer, 2014). The frequent participation in online activities can be time-consuming which could lead to the neglect of household responsibilities, interruptions in quality time and conflict over internet overuse which results in decreased relationship satisfaction (Hertlein & Blumer, 2014; Vorderer et al., 2004). Koronczai, et al. (2013) indicated that compulsive internet users are often willing to sacrifice offline activities and relationships for the sake of online activities which violates relationship rules (Hertlein & Blumer, 2014). Underwood and Findlay (2004) found that individuals with problematic internet use report more concealment regarding the time and nature of online activities and decreased sexual intimacy with their primary partner.

Young (2004) highlighted that individuals with problematic internet use frequently experience relationship difficulties due to online infidelity. Online dating and social networking enable individuals to initiate a new relationship with a mere swipe which enhances their awareness that they have multiple options available at their fingertips. Previous research indicates that online profiles often exaggerate and maximise positive aspects of the individual (Campbell & Murray, 2015; Klein, 2013; Osborn, 2012). Therefore, individuals that engage in excessive online dating or social networking have increased exposure to images and ideas that are often idealistic and inauthentic which unconsciously fosters unrealistic expectations of their significant partner leading to decreased relationship satisfaction (Campbell & Murray, 2015; Klein, 2013; Osborn, 2012). Studies have suggested that the availability of alternative attractive partners reduces relationship commitment and satisfaction and thereby increases the risk of relationship termination (Klein, 2013; Osborn, 2012; Rusbult & Buunk, 1993). The virtual world provides a platform that is accessible, affordable and anonymous, making it easier for individuals to be unfaithful to their partner (Mileham, 2007; Treas & Giesen, 2000). Couples are faced with the challenge to redefine relationship rules relating to online behaviour and infidelity in order to ensure the survival of their relationship (Hertlein & Blumer, 2014; Millham & Atkin, 2016; Roggensack & Sillars, 2013).

Conclusion

The purpose of the chapter was to explore the effects of problematic internet use on romantic relationship satisfaction. The main hypothesis that was tested in the present study was that the level of problematic internet use will be negatively related to the level of relationship satisfaction. This prediction was developed after reviewing literature related to the Couples Family Technology framework. The results of the study indicated that internet use can lead to changes within the couple system. More specifically, the study indicated that

participants who reported higher levels of problematic internet use reported lower levels of relationship satisfaction. It was also found that participants who reported higher levels of online preoccupation and adverse effects resulting from internet use reported lower levels of relationship satisfaction. Surprisingly, there was not a significant relationship found between the preference for online social interaction and relationship satisfaction in the primary relationship.

“Individuals use the internet for pleasure and play, to gather and exchange information and to engage in, mediate and sustain many of their day-to-day relationships. Social media increasingly plays a crucial role in lives and represents a set of sites and services that are at the heart of contemporary culture (Boyd, 2014, p. 6). The profession of psychology needs to refine existing theories and develop new theories regarding the psychological impact and the potential challenges of the digital age. Psychology needs to embrace this hardware that facilitates the expression of the individual’s inner world – a hardware that is becoming the “architect of our intimacies” (Turkle, 2011, p.1). Furthermore, she believed that technological devices are objects imbued with addictive and seductive powers that are redefining human connection. She asserted that addiction propels the individual into another world where a faceless other is always ready to connect, especially when the individual feels emotionally vulnerable and alone (Turkle, 2011).

The results of the present study contribute towards the body of literature that explores the impact of internet use on intimate relationships. This study highlights that internet use sometimes spiral out of control, which affects the quality of romantic relationships. These results can be used to guide future research hypotheses and to develop interventions for couples to cope with the challenges that have emerged as a result of the digital age.

Chapter 6

Strengths, Limitations, Recommendations and Conclusions

These days, being connected depends not on our distance from each other but from available communications technology. Most of the time, we carry that technology with us. In fact, being alone can start to seem like a precondition for being together because it is easier to communicate if you can focus, without interruption, on your screen. (Turkle, 2011, p. 155).

Introduction

The present study explored how compulsive use of the internet impacts upon individuals' satisfaction with their offline intimate relationships. The results indicated that participants who reported problematic internet use were more likely to report lower levels of relationship satisfaction. These results support Hertlein's (2012) theoretical model which argues that the internet changes how relationships are maintained over time (Hertlein, 2012). This chapter concludes the present study by providing an overview of the research strengths and limitations followed by recommendations for future research in the field. Thereafter, a conclusion based on the literature, theoretical framework, and research findings will be provided.

Strengths of the Study

Romantic relationships constitute an important part of individuals' lives (Demir, 2008). The quality of romantic relationships is an essential predictor of health, well-being and overall life satisfaction (Facio & Resett, 2013; Neto & Pinto, 2015). Therefore, romantic relationships have been extensively studied from numerous perspectives (Sprecher, 2009; Stewart et al., 2014). However, as communication technologies continue to develop, research that explores the impact of technology on intimate relationships are lagging behind (Hertlein & Webster, 2008).

A strength of the present study includes its exploratory nature. The researcher explored a topic that is relatively understudied with the aim of providing a foundation for future research hypotheses. Considering the annual increase of internet users in South Africa (Kemp, 2019), research that explores internet use, problematic internet use and the impact thereof on interpersonal relationships becomes imperative. Problematic internet use stands out amongst behavioural addictions for its relevance to future generations and its potential to deliver harmful consequences to many as internet access continues to rise globally (Kemp, 2019)

A further strength of the study includes its focus on the student population. The majority of participants in the study (93%) were between the ages of 18 and 29 and can be described as emerging adults (Demir, 2008). This developmental period is psychologically different than other life-span periods as it involves a deeper and more serious level of exploration in the area of intimate relationships. The formation of healthy social connections and mutually satisfying romantic relationships is a particularly important developmental task during this life stage (Arnett, 2000; Erikson, 1982). Young adults are also considered to be more frequent users of technology and are more reliant on the internet as a mechanism for connecting with others (Kemp, 2019; Thatcher & Goolam, 2005a; van den Einjden et al., 2008). Therefore, research exploring the impact of internet use on romantic relationships of young adults is particularly important.

As individuals incorporate the internet into their daily lives the ways in which individuals connect, develop and maintain romantic relationships has changed significantly (Campbell & Murray, 2015, Jin & Peña, 2010). Depending on the manner in which individuals use the internet it can either offer opportunities for couples to strengthen their relationship or contribute to latent dysfunctional dynamics within the couple relationship. The present study indicated that problematic internet use is negatively related to relationship satisfaction. The findings of the present study are significant as it suggests possible areas for

clinical assessment and additional research to explore how individuals' technology use is creating problems within their lives and interpersonal relationships.

Limitations of the Present Study

The results of the present study must be considered in light of the study's limitations which relate to the research design, method of data collection, and the representation of the study's sample.

Research design. A quantitative, non-experimental, cross-sectional research design was utilised to achieve the aims and objectives of the present study. Although this design was deemed appropriate, there are limitations associated with its use which should be acknowledged. Firstly, quantitative research designs provide a static view of the relationship between variables independent of the participants' lives (Bryman, 2012). It does not explain the apparent relationships between variables because the participants' meaning of events are not explored (Bryman, 2012). The present study did not provide evidence for the proposed mechanisms that underlie the relationship between variables. Some of the mechanisms proposed for the association between problematic internet use and relationship satisfaction included the decrease in quality time spent together (Krasnova et al., 2016), blurred boundaries between partners and individuals outside the couple system (Hertlein & Blumer, 2014), and the heightened awareness of available attractive alternatives (Campbell & Murray, 2015). These mechanisms were based on previous research findings and the theoretical framework employed in the present study.

Furthermore, the results obtained from cross-sectional, non-experimental research designs should be interpreted with caution when testing relationships, since there could be alternative explanations for the given results that cannot be ruled out with this design (Cozby & Bates, 2017). A cross-sectional design only captures data at a specific point in time and does not allow the researcher to explore relational patterns over time (Babbie, 2011). This can

be overcome by utilising longitudinal research designs in future studies. Although longitudinal research designs are more expansive than cross-sectional studies it requires more time and resources to complete (Babbie, 2011). A non-experimental research design relies on interpretation, observation and interaction to draw conclusions which do not demonstrate true cause and effect relationships. Therefore, experimental designs are more appropriate for exploring relationships as it enables the researcher to rule out competing explanations for a given result. Although experimental designs make it possible to identify cause-and-effect relationships (Bryman, 2011), it is resource-intensive and lacks external validity (Babbie, 2011) as it creates artificial situations which do not always represent real-life situations.

To try and alleviate this limitation, the hypotheses tested in the present study were derived after an in-depth review of the literature. Various research studies have indicated that problematic internet use can harm the quality of romantic relationships. Kerkhof's longitudinal study indicated that compulsive internet use results in a deterioration of the quality of romantic relationships over time (Kerkhof et al., 2011) and Krasnova, Abramova, Notter and Baumann's (2016) analysis of qualitative and quantitative studies revealed the unfavourable consequences of online preoccupation in the romantic context, including increased conflict and jealousy (Roberts & David, 2016), lower relationship satisfaction and reduced well-being (McDaniel & Coyne, 2016).

Data collection. The present study used an online survey to collect data. Although this method enables the researcher to reach many participants within a short period there are various limitations associated with its use. Firstly, it is difficult to establish the accuracy of the data obtained as participants may not provide honest answers due to social desirability bias, fear of being identified and the nature of volunteer bias (Cozby & Bates, 2017). The participants' motivation for completing the online survey remains unknown. According to Creswell (2013) individuals might be more inclined to participate in research studies if they

perceive the topic to be relevant or to receive the incentives offered which could limit the generalisability of a sample (Neuman, 2011). Also, it remains uncertain whether participants respond conscientiously, understand what is being measured, how it manifests, and whether their responses are at variance from their actual behaviour (Bryman, 2012). The absence of an interviewer to clarify questions and to probe when asking questions could lead to less reliable data.

To combat these disadvantages, the present study's online questionnaire comprised of closed-ended questions that were simple, unambiguous and easy to answer. The survey was designed to be user-friendly by only displaying a few questions at a time to avoid confusion and merely requiring participants to click on their desired responses. The questionnaire predominantly comprised of Likert scales which have proven to be both a reliable and valid measure (Bryman, 2012). The number of questions was limited and took approximately 15 minutes to complete to enhance the likelihood truthful responses and to decrease the risk of non-participation (Neuman, 2011). Students at Nelson Mandela University receive numerous emails from the university platform and since the present study did not use incentives, the study aimed to increase participation by ensuring that the survey is not perceived as too time-consuming. In addition, anonymity reduced the risk of social desirability bias. Participants may be more willing to share personal information about their romantic relationships and online activity when they are not disclosing information directly to another person. By using an online questionnaire, a large number of participants, such as all the students studying at Nelson Mandela University, could be reached because the university has various computer and internet facilities available for students. Additionally, the data capturing process was automated which reduced the possibility of data errors (Neuman, 2011), eliminated costly geographical restrictions (Bryman, 2012) and allowed participants to immediately view their results upon submission. In comparison to traditional survey methods, online surveys are the

most cost-effective and least resource-intensive method of data collection (Neuman, 2011). Accordingly, the utilisation of the online questionnaire was deemed appropriate for the present study despite the various limitations associated with its use.

Generalisability of results. A final limitation of the present study relates to the generalisability of the results obtained. The sample consisted of students from the Nelson Mandela University. It is difficult to establish how generalisable the results are to all Nelson Mandela University students beyond the sample that participated in the study since only 388 students out of 27560 completed the online survey. Furthermore, it is uncertain whether the student population at Nelson Mandela University reflects the total South African student population target group at large. Student groups are not necessarily representative of the larger demographics of the country (Hanel & Vione, 2016) and therefore it is difficult to establish how generalisable these results are to a South African population or a wider international sample. Although previous studies (Anderson, 2005; Cornwell & Lundgren, 2001; Kerkhof et al., 2011; Morahan-Martin & Schumacher, 2000; Young, 2004) have found similar results which could be a positive indication for the generalisability of the research results, however, the results should still be interpreted with caution.

In view of the above-mentioned limitations of the present study, the results should be interpreted as preliminary and suggestive rather than definite. However, given the emerging empirical findings on internet use and romantic relationships, it is the opinion of the present researcher that the results are significant and can be useful for indicating directions for future, in-depth research, which will be discussed in the following section.

Directions for Future Research

The limitations of the present study as discussed above, provides suggestions for future studies within the field of cyberpsychology. Firstly, future research studies could incorporate qualitative research designs to gain in-depth insight into the underlying processes of the

relationship between internet use and relationship satisfaction. Qualitative research designs allow the researcher to understand the social world through an examination of the interpretation of that world by its participants (Bryman, 2012). The participants are viewed holistically and are not reduced to variables which enable the researcher to gain a better understanding of the nature and quality of the phenomena being studied (Neuman, 2011). Furthermore, future studies could incorporate experimental, longitudinal and mixed methods research designs, to establish the causal relationship between variables and the changes in relational patterns over time, as discussed in the limitations relating to the research design of the present study.

Secondly, various other methods of data collection could be employed in order to manage the limitations associated with the data collection method utilised in the present study. For example, future research studies could incorporate face-to-face interviews or focus groups to obtain data which will provide the researcher with opportunities to clarify questions and to probe for additional detail, thereby providing more reliable data and a richer understanding of the impact of internet use on romantic relationships. For example, it would be useful to ask participants how their internet addiction affects their relationship rules, roles and boundaries and maintenance behaviours. Furthermore, future studies can collect additional data regarding the potentially moderating and mediating variables which could rule out competing explanations for the results obtained. For example, it might be useful to explore whether the participants struggle with depression and anxiety. Previous studies found that loneliness, stress and depression are positively related to problematic internet use (Junghyun, LaRose, & Peng, 2009; Van den Eijnden et al., 2008) and may influence individuals to evaluate their relationships more negatively than what is warranted (Young & Rogers, 1998).

Future research studies could consider expanding the sample to include both partners when investigating the effects of internet use on romantic relationships. By simultaneously considering internet users and their partners the researcher would be able to gain deeper insight into the antecedents and consequences of internet use on their relationships within their unique context. Partners within the same relationship may hold different views about how technology impacts their relationships and therefore, it would be useful to obtain data from both partners to evaluate the true impact of problematic internet use on romantic relationship satisfaction.

Lastly, future studies should be conducted at other universities and different settings within the South African context to test whether these results would replicate amongst other target groups. The results may be influenced by the specific university ethos or geographic influences which impacts upon the uses or perceptions of the internet. Previous studies have indicated that university students may be a unique population concerning internet use (Baym et al., 2007; Hertlein & Webster, 2008) because younger and educated individuals are thought to be more frequent users of technology (Räsänen & Kouvo, 2007; Thatcher & Goolam, 2005a). Conducting future research studies amongst larger and more representative samples would improve on the present study's generalisability.

Despite the various limitation of the present study and that the findings as a consequence should be interpreted with caution, the results of the present study are considered valuable as they contribute to the sparse body of literature that explores the effects of problematic internet use on romantic relationships. The study offers suggestions and direction for future research studies in the field.

Conclusion

The internet has become an increasingly pervasive part of the individual's daily life with the potential to infiltrate every aspect of life, including romantic relationships (Campbell &

Murray, 2015). Within intimate relationships, couples may use the internet for many functions, including communication, sharing affection and to engage in bonding activities (Klein, 2013). There is a growing recognition that the internet can support or hinder the development of romantic relationships. The purpose of the present study was to explore the impact of internet use on romantic relationships when individuals become addicted to the medium. The study explored how aspects of problematic internet use such as online preoccupation, the preference for online social interactions and the persistent use of the internet despite adverse consequences related to its use affect relationship satisfaction. The researcher argued that compulsive internet use will disrupt the quality time partners spend together, blur interpersonal and couple boundaries, decrease individuals' ability to effectively balance their life roles and enhance individuals' awareness of attractive alternatives. Compulsive internet use disrupts relationship maintenance behaviours and potentially leads to the lack of relationship cohesion, intimacy and commitment increased conflict over internet overuse, jealousy and social isolation, which ultimately decreases relationship satisfaction (Kerkhof et al., 2011; Kraut et al., 1998; Puri & Sharma, 2016; Young, 2009). The results of the present study confirmed that participants that struggle with problematic internet use are more likely to report lowered relationship satisfaction. More specifically, participants that reported being preoccupied with the internet and continue to use the internet despite negative effects related to its use, were more likely to report lower levels of relationship satisfaction.

These results support Hertlein (2012) and Hertlein and Blumer's (2013) multi-theoretical model which suggests that technology shifts how intimate relationships are initiated and maintained over time. The model suggests that the internet changes the ecological environment surrounding couples which leads to shifts in relationship structures and processes. Couples that incorporate internet use into their daily lives expose themselves to a new set of vulnerabilities and are faced with the challenge to navigate these vulnerabilities

effectively to ensure the survival of their relationship. In the present study, the model was used to conceptualise and interpret the results obtained.

Despite the growing presence of technology in people's lives, research examining the various ways that technology impacts life and relationships are lagging. Researchers are starting to shift their focus from what the internet can do for the individual to what it can do to the individual, to the individual's thinking about themselves and their relationships. Although the present study only scratches the surface of the potential impact that the internet can have on romantic relationships, the results highlight the importance of research in this area as new technologies continue to emerge and change the way people interact in their relationships.

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Appendix A

Letter of Invitation to Students

Dear Nelson Mandela University Student

I am currently completing my Masters degree in Clinical Psychology. It is necessary to complete a research treatise as part of my degree. The title of the treatise is **Internet Use and Romantic Relationship Satisfaction** (ethics clearance reference number: H16-HEA-PSY-034). The study aims to explore and describe how internet use is influencing individuals' satisfaction in their intimate relationships.

I would like to invite you to participate in this study.

If you are in a committed romantic relationship and you have internet access on a daily basis, you meet the preliminary requirements to participate. You will be required to complete an online survey that will take approximately 15 minutes to complete.

Please take some time to read the attached informed consent form. Proceeding with the completion and submission of the survey implies that you have read the informed consent form and that you give your consent to participate in the study.

Please click on the link below to access the survey:

<http://webapps.mandela.ac.za/survey>

Should you have any questions, please do not hesitate to contact any of the researchers involved:

Nicole Grundlingh (grundlinghnicole@gmail.com)

Prof Greg Howcroft (Greg.Howcroft@mandela.ac.za)

Dr Tania Lambert (Tania.Lambert@nmmu.ac.za)

Appendix B



Informed Consent

Dear Nelson Mandela University Student

I am currently completing my Masters degree in Clinical Psychology. It is necessary to complete a research treatise as part of my degree. The title of the treatise is **Internet Use and Romantic Relationship Satisfaction**. The study aims to explore and describe how internet use is influencing individuals' satisfaction in their intimate relationships.

I would like to invite you to participate in this study. If you are in a committed romantic relationship and you have internet access on a daily basis, you meet the preliminary requirements to participate.

If you do agree to take part research study, you will be asked to complete an online survey that will take approximately 15 minutes to complete.

Please note that:

- Your participation is completely voluntary. You have the right to withdraw from the study at any stage without any repercussions. If you feel you no longer want to participate you can close the page without any penalty.
- There are no right or wrong answers and you do not have to answer any questions that you do not feel comfortable with.
- The survey is completely anonymous and confidential. If you choose to participate in an interview you will be required to enter your contact details. This information as well as the results of the survey will remain strictly confidential and will only be viewed by myself and my research supervisors.
- There will be no monetary benefits as a result of participating in the study

- If you feel distressed in any way after completing the survey you are welcome to make use of the counselling services offered at the University Psychology Clinic (UCLIN) on South Campus: 041 504 2330

Thank you for taking the time to consider participating in this study. If you have any questions regarding the research process, or if you require additional information, please do not hesitate to contact me at s212265083@mandela.ac.za

Yours Sincerely

Nicole Grundlingh

Prof Greg Howcroft (Greg.Howcroft@mandela.ac.za)

Dr Tania Lambert (Tania.Lambert@nmmu.ac.za)

Appendix C

Biographical Information Questionnaire

Please complete the following information that will be used for descriptive purposes

Gender	Male <input type="checkbox"/>	Female <input type="checkbox"/>		
Age				
	18-23 <input type="checkbox"/>	24 – 29 <input type="checkbox"/>	30-35 <input type="checkbox"/>	36-41 <input type="checkbox"/>
	42-47 <input type="checkbox"/>	48-53 <input type="checkbox"/>	54- 59 <input type="checkbox"/>	60+ <input type="checkbox"/>
Highest level of education				
	Matric <input type="checkbox"/>	Diploma <input type="checkbox"/>	Bachelors <input type="checkbox"/>	
	Honours <input type="checkbox"/>	Masters <input type="checkbox"/>	Doctorate <input type="checkbox"/>	
Relationship status				
	Dating <input type="checkbox"/>	Engaged <input type="checkbox"/>	Married <input type="checkbox"/>	
Duration of relationship				
	Less than 1-year <input type="checkbox"/>	1 year – 1 year and 11 months <input type="checkbox"/>		
	2 years – 2 years and 11 months <input type="checkbox"/>	3 years – 3 years and 11 months <input type="checkbox"/>		
	4 years – 4 years and 11 months <input type="checkbox"/>	5 years <input type="checkbox"/>		
	5 years – 10 years <input type="checkbox"/>	10+ years <input type="checkbox"/>		
Do you study or work in the IT field?				
	Yes <input type="checkbox"/>	No <input type="checkbox"/>		

Where do you usually connect to the internet? Please tick all the relevant options.

NMMU	<input type="checkbox"/>
WORK	<input type="checkbox"/>
HOME	<input type="checkbox"/>
INTERNET CAFÉ	<input type="checkbox"/>
FRIENDS	<input type="checkbox"/>
FAMILY	<input type="checkbox"/>
OTHER	<input type="checkbox"/>

1. What device do you use to connect to the internet?

COMPUTER	<input type="checkbox"/>
LAPTOP	<input type="checkbox"/>
CELL PHONE	<input type="checkbox"/>

TABLET/ IPAD	
OTHER	

2. How long have you been using the internet?

< 6 MONTHS	
6-12 MONTHS	
1-2 YEARS	
2-5 YEARS	
5-10 YEARS	
> 10 YEARS	

3. How do you communicate with your partner (Rate your answers from 1 – 5 where 5 indicates the most frequent method of communication)

PHONE CALL	
TEXT MESSAGES	
EMAIL	
SOCIAL NETWORKS	

4. Indicate what you use the internet for. Rate your answer according to the scale below:

1- Not at all

2- A few times a year

3- A few times a month

4- A few times a week

5- Daily

6- More than 2 hours a day

Work or University-related activities (research, assignments, emails)	
Reading/ browsing for entertainment (websites, blogs, e-books)	
Entertainment (online gaming, watching movies and videos online)	
Social Networking (Facebook, Twitters, Instagram)	
Communicating with friends, family and significant other (email, WhatsApp, Facebook)	
Dating websites (Tinder, Zooks. com)	

Appendix D**Problematic Internet Use Questionnaire (PIUQ)**

(Thatcher & Goolam, 2005)

Please select the appropriate answer to the following questions using the scale below:

- 1- Not applicable/ rarely
- 2- Occasionally
- 3- Frequently
- 4 - Often
- 5- Always

1. Do you ever find that you stay on the Internet much longer than intended?
1 2 3 4 5

2. Do you find that you need to spend more and more time on the Internet to feel satisfied?
1 2 3 4 5

3. Do you feel distressed when you cannot connect to the Internet?
1 2 3 4 5

4. Do you find it easier to interact with others online as opposed to face-to-face?
1 2 3 4 5

5. Do you find yourself thinking about the next time you will be able to get onto the Internet?
1 2 3 4 5

6. Do you find that you keep secrets from others regarding your time spent on the Internet?
1 2 3 4 5

7. Do you tend to seek out certain individuals on the Internet?
1 2 3 4 5

8. Do you find yourself looking forward to spending time on the Internet and feeling as if you can't wait to be online?
1 2 3 4 5

9. Do you spend as long as possible online?
- 1 2 3 4 5
10. Has your use of the Internet resulted in the loss of a significant relationship, job or career opportunity?
- 1 2 3 4 5
11. Have you ever suffered any serious adverse physical/health-related consequences because of your use of the Internet?
- 1 2 3 4 5
12. Have you ever suffered any serious adverse psychological consequences because of your use of the Internet?
- 1 2 3 4 5
13. Have you ever suffered any serious adverse financial consequences because of your use of the Internet?
- 1 2 3 4 5
14. Have you experienced a situation where you tried to escape problems by going onto the Internet?
- 1 2 3 4 5
15. Have you ever tried unsuccessfully to stop using the Internet?
- 1 2 3 4 5
16. Do you prefer online socialising to other forms of socialising?
- 1 2 3 4 5
17. Do you go online when you know there are more important things you should do?
- 1 2 3 4 5
18. Do you feel misunderstood by people who don't see the attraction of the Internet?
- 1 2 3 4 5
19. Does your use of the Internet cause problems in your daily life?

1 2 3 4 5

20. Do you find yourself relying on the Internet to brighten up your life?

1 2 3 4 5

Appendix E**Relationship Assessment Scale (RAS)**

(Hendrick,1988)

Please select the appropriate answers to the following questions using a 5-point scale ranging from 1 “low” to 5 “high”

How well does your partner meet your needs?	1	2	3	4	5
In general, how satisfied are you with your relationship?	1	2	3	4	5
How good is your relationship compared to most?	1	2	3	4	5
How often do you wish you had not gotten into this relationship?	1	2	3	4	5
To what extent has your relationship met your original expectations?	1	2	3	4	5
How much do you love your partner?	1	2	3	4	5
How many problems are there in your relationship?	1	2	3	4	5