by

Charlie Shiferaw Chrie BSc Psychology

Supervised by Nils Keesmekers & Stans Drossaert

Charlie Shiferaw Chrie – 1984780

Submitted in partial fulfilment of the requirements for the degree of
Bachelor's degree in Psychology
Faculty of Behavioural, Management and Social Sciences
University of Twente
2020

Abstract

Online daters are commonly compared to non-users of online dating services in several studies; however, the purpose of this study was to explore differences in well-being and self-esteem between online dating users based on their motivation for use. Furthermore, the role of self-esteem was examined as a potential moderator in this relationship contributing to the lack of studies exploring with-in group differences in online daters. Motivations were defined according to the theory of social motives as seeking sexual encounters, romantic relationships and friendships (Timmermans & De Caluwé, 2017). A questionnaire was administered to 154 participants where they were divided into one of the three groups. Participants all had to complete the Self-Esteem Scale by Rosenberg (1965), and the Mental Health Continuum-Short Form. Two analyses of variance between the three groups proved no significant difference in levels of well-being or selfesteem. Furthermore, two simple moderation analyses were carried out using PROCESS macro by Hayes (2013), showing no significant interaction effect of self-esteem on the relationship between motivations and well-being. All three hypotheses were rejected, whilst not being in line with the proposed research by which they were mainly formulated. The results suggest that differences in well-being or self-esteem may not be affected by the motivations for use. Furthermore, other variables, and unique differences among participants may play a role in affecting well-being and self-esteem, making general conclusions difficult when only measuring motivations. Lastly, the motivations by which users were divided by may not accurately justify the motivations for use in all participants. However, future research might allow space for diversification in responses.

Table of contents

1.	INTRODUCTION	3
	1.1 Statement of Purpose	3
	1.2 Online Dating, Well-Being and Motivations	4
	1.3 Online Dating and Self-Esteem	5
	1.4 Self-Esteem as a Moderator and Well-Being	6
(CURRENT AIM: MOTIVATIONS OF ONLINE DATERS, SELF-ESTEEM AND WELL-BEING	7
2.	METHODS	10
	2.1 Design	10
	2.2 Participants and Procedure	10
	2.3 Materials	11
	2.4 Data analysis	12
3.	RESULTS	15
	3.1 Descriptive statistics	15
	3.2 Difference in mental health and self-esteem levels between groups of motivation .	16
	3.3 Correlation between self-esteem and mental health scores	16
	3.4 Self-esteem as a moderator between motivation and mental health	16
4.	DISCUSSION	18
4.	4.1 Understanding how motivation for use influences levels of well-being and self-est	eem
	in online daters	18
	4.2 Understanding how self-esteem may affect the relationship between motivation for	
	of online dating and levels of mental well-being	20
	4.3 Strengths and Limitations	
	4.4 Future research and recommendations	22
RE	FERENCES	24
AP	PENDIX A	28
ΛD	DENDIY D	20

1. Introduction

1.1 Statement of Purpose

Over 30% of married couples in the United States have first met through online dating services (Cacioppo, Cacioppo, Gonzaga, Ogburn, & VanderWeele, 2013). The developed parts of the world have experienced a rapid expansion of the online dating services available and offered to the general public. As a result, the possibilities of meeting potential partners online have been steadily increasing through the development of computerized technology, internet and smartphones (Cacioppo et al., 2013). A large proportion of the population with the access to technologies that offer an outlet for online dating have used or are currently using online dating services. Many consider online dating as a normal part of their daily lives, and it is now regarded as a widely accepted idea across modern cultures (Orosz, Benyó, Berkes, Nikoletti, Gál, Tóth-Király & Böthe, 2018).

The emergence and increased popularity of online dating services seems to be steadily rising as the consequence of a number of factors (Couch & Liamputtong, 2008; Wiederhold, 2015). One influential factor could be that minimal effort is needed in approaching potential partners when compared to doing so in real-life contexts. This makes online dating attractive to many individuals, particularly those that may feel hindered or anxious during real-life encounters with potential mates. Another possible factor could be related to some dating outlets serving the experience of making the user feel like the possibility of rejection is less, than conventional reallife methods of dating. Thus, portraying online dating as a safe space for some individuals to explore their dating capabilities and available options when it comes to the selection of intimate partners. Still, rejection may be present in varying degrees depending on the particular dating service used (Couch & Liamputtong, 2008; Wiederhold, 2015). A third factor of interest may be related to the high availability of potential dates, and the ability to choose between certain traits and preferences in apps such as Tinder (Margalit, 2014). Tinder allows users to "swipe" candidates into a "like" or a "dislike", leaving users with a feeling of having many options available. This is particularly attractive to users that may be battling thoughts of not being in a well saturated dating environment, particularly among older users, or sexuality-based minorities (Margalit, 2014). A fourth and last factor may be related to the fact that online dating has also provided its users with the luxury of setting requirements such as age, location and gender, allowing for further selectivity in choosing potential partners (Orosz et al., 2018). Other reasons and potential benefits to online

dating services surely exist, such as the maximisation of positive emotions in users, but the previously discussed factors are among the most often mentioned reasons as to why users are dating online.

It becomes clear that online dating services has amassed a large part of their success due to taking advantage of the reach of the technologies available such as the internet, phones and computers. Tools like these allow individuals that may fit each other's preferences to connect, potentially leading to higher success rates in dating opportunities due to shared interests. Some dating outlets are based on certain niches, narrowing down the dating scene to certain social circles. Examples of such sites are PositiveSingles (HIV, and STD positives), FarmersOnly.com, ethnic dating sites, and many more. Additionally, online dating services have been proven to be effective in tackling issues such as rejection-related anxiety, and in turn promoting ease of use, requiring minimal effort from users, providing readily available services and more (Orosz et al., 2018). These online dating outlets may be engineered to bring positive feelings of well-being to users (Lomanowska & Guitton, 2016). Additionally, previous research has confirmed that well-being may indeed be influenced by the behaviours of online daters, and their motivation for use (Lomanowska & Guitton, 2016).

1.2 Online Dating, Well-Being and Motivations

Previous research may indicate that levels of well-being may be influenced by whether or not one makes use of online dating services. The effects may be positive or negative depending on factors such as motivation for use, previous experience using online dating apps, and more (Lomanowska & Guitton, 2016). The effects of intimate social interactions with other individuals and its effects on well-being has been a lasting area of interest. It becomes interesting to see whether a shift towards online dating would present a similar effect on levels of well-being. Researchers have previously attempted to investigate the effects of online dating on well-being, yet, it seems that there is limited information to be found on the significance of online dating on well-being. Instead, the majority of research conducted has focused on how social interaction online may affect well-being in a general sense, without it being particularly focused on the aspect of dating, and intimate relationships (Lomanowska & Guitton, 2016). Among the limited research available, one article addressed the topic of how well-being levels may be associated to online dating behaviour (Strübel & Petrie, 2016). This study included 1,044 women, and 273 men with all subjects mainly being

undergraduate students. The participants answered questions regarding their sociological, mental and physical well-being, and 10% were actively using, or had used the dating service Tinder in the past. The study found that participants using the dating app, of both genders would report lower levels of satisfaction in regard to their body-image as well as lower levels of psychological well-being than participants that did not use the app. Studies such as these may indicate that a relationship between well-being, and online dating may indeed exist. It has been noted that there are significant differences in users when discussing their motivation for use of online dating services. Yet, there is information lacking in how the motivation for use of online daters may affect their levels of well-being, which may be of interest to explore further. (Strübel & Petrie, 2016).

Online dating may affect individuals differently based on their motivation for use. One study conducted by Sumter, Vandenbosch & Ligtenberg (2017) consisting of 163, 18 to 30-year-old Dutch Tinder users investigated whether participants were inclined to use the app based on based on six different motivations. The main findings included that men were more likely to report casual sex as a motivation for use compared to women. Additionally, it was found that the overall majority of users were using Tinder as a means to find love and romantic intimacy, rather than casual sex (Sumter, Vandenbosch & Ligtenberg, 2017). Studies such as these may indicate that motivation for use is a worthy aspect to consider when conducting research on online dating and its effects on individuals. Thus, it could be of further interest for researchers to explore whether a relationship between motivations of online daters and their levels of well-being exists.

1.3 Online Dating and Self-Esteem

Online dating services offers its users many benefits and positive emotions, relative to conventional methods of dating it seems. Studies have noted that the rate in which decisions are made on apps such as Tinder, allow users the feeling of instant gratification (Chamorro-Premuzic, 2014; Seefeldt, 2014). Another example is that the user may experience feelings of being attractive, or perceive one owns levels of attractiveness as higher, through positive outcomes such as being matched with more individuals on the dating services used. In recent years as the online dating scene has expanded rapidly, researchers have shown increased interest in how certain online dating platforms may affect how individuals view themselves. The topic of levels of self-esteem and feelings of self-worth have been explored further (Chamorro-Premuzic, 2014; Seefeldt, 2014).

Self-esteem is a broad term that can be narrowed down to various definitions (Rosenberg, 1965). One definition is that self-esteem tends to be defined as a favourable attitude towards oneself when it is high, and an unfavourable attitude towards oneself when it is low. Self-esteem serves the function of allowing an affective evaluation of oneself (Rosenberg, 1965). A positive self-evaluation is proposed to make the self-evaluating individual feel good, and a negative evaluation bad (Sonstroem & Morgan, 1989). Self-esteem is equally important when addressing one's quality of life and general feelings of well-being (Sonstroem & Morgan, 1989).

Self-esteem can be discussed in a variety of contexts when related to the users of online dating services, and whether esteem toward oneself is influenced. Addressing the "how", one study found that individuals of lower self-esteem were inclined to present a "self" that was less in line with how they truly saw themselves (Ranzini & Lutz, 2018). Subjects were found to include elements and traits to their self-representation which they saw as being potentially attractive to an outside observer. Similarly, they would exclude traits they perceived as undesirable in an effort to increase their possibilities of being approved of (Ranzini & Lutz, 2018). Additionally, there is a lack of further research in how motivation for use of online daters relate to their levels of self-esteem, and whether there is a significant difference in self-esteem levels between different groups of motivation, which could be explored further.

1.4 Self-Esteem as a Moderator between Motivations and Well-Being

Self-esteem is an important factor to consider when discussing the topic of online dating. This is particularly crucial if there is a relationship present, as this may lead to insight on whether well-being and quality of life may be positively or negatively influenced by whether one uses online dating services (Du, King & Chi, 2017).

Self-esteem is an aspect that may be of importance to consider and monitor as to assure the quality of life and general well-being won't be hindered as a result of lacking it. Previous studies have consistently proven that a relationship between levels of self-esteem and subjective feelings of well-being exists. Self-esteem typically serves as a strong predictor of whether an individual feels high or low levels of well-being. It would be insightful to see whether these effects of self-esteem on well-being may also be present when addressing the effects of online dating, and the motivation for use in online daters. It would be worth considering self-esteem, as potentially playing a role in the relationship between motivation for use, and well-being as a moderator (Du,

King & Chi, 2017). Answers to these questions may lead us to a better understanding of a future consisting heavily of online dating that we are steadily progressing towards. It may also lead to further considerations in the development of future online dating services, as to prevent levels of self-esteem or self-worth suffering negatively, as a result of online dating.

The purpose of this study will serve as additional information and research in a field that is steadily growing in modern dating culture. The current information or the lack of it would be positively served by conducting a study in whether well-being or self-esteem is significantly affected by one's expectations when using online dating service, and the average subjective levels of well-being and self-esteem experienced. Another benefit of this study may be that it could mature into further future importance, as online dating is expected to continuously rise in popularity among communities around the world. As third-world countries continue to develop, and access to the internet and technology becomes readily available, a growing audience is to be steadily expected (Orosz et al., 2018).

Current Aim: Motivations of Online Daters, Self-Esteem and Well-Being

In the remainder of this study, the relationship between the motivations for using online dating services and experienced levels of well-being, moderated by levels of self-esteem will be further examined. Additionally, it is important to note that the motivations of online daters may differ. One user may look for a romantic relationship, another user may solely seek sexual encounters, or a third user may simply be looking for friendships with no intention of romantic or sexual involvement. These three sub-categories underlying motivations are based on the theory of social motives described in the study of Timmermans & De Caluwé (2017). These motivations of users will be considered in this study as to investigate how they may play a role on whether well-being is positively or negatively affected by ones use of online dating services. A distinction of motivations among online daters into three different categories, being a relationship, sexual interest and friendship have been included in this study. This was done as an effort to further investigate whether the motivations of users may influence the effects of online dating services on well-being. Additionally, the role of motivation for use and its effects on self-esteem levels will be investigated in order to see whether there is a difference in self-esteem levels influenced by motivations. Research is significantly lacking these distinctive factors. Well-being and self-esteem

seem to be going hand in hand when measured together, and it could be of interest to see whether they would play a role in the world of online dating too (Du, King & Chi, 2017.

The three subcategories of motivations for using online dating services will be compared to each other as to visualise any potential differences in the levels of well-being and self-esteem. It is expected that the motivations of users will present differing levels of well-being and self-esteem in each category. Additionally, the role of self-esteem in the relationship between the motivation for online dating and mental health (well-being) will be further analysed.

Primary Research Question

Is the relationship between motivation for use and levels of well-being moderated by levels of selfesteem?

Secondary Research Questions and Hypotheses

The three hypotheses below are related to the earlier mentioned study that suggests that the objectifying effects of some online dating services (e.g. Grindr, Tinder, etc.) may lead to lower self-esteem levels. Additionally, this has led to negative body-image in users, contributing to a lower level of mental well-being (Strübel & Petrie, 2016). Additionally, the connection between self-esteem and its relation to levels of well-being has continuously been documented, such as in the research conducted by Du, King & Chi (2017). Thus, it could be of interest to see whether self-esteem may equally influence well-being levels in the context of this research as a potential moderator, as this association has previously been made albeit in a more general sense. Additionally, the first and the second hypotheses builds on the notion that individuals seeking a relationship on online dating services are initially more emotionally invested and responsive to the circumstances that may present themselves. Users seeking friendships may not be as heavily invested in the need to be approved of, and thus, feel less exposed or vulnerable than the previous group (Chamorro-Premuzic, 2014; Seefeldt, 2014).

Understanding how motivation for use influences levels of well-being in online daters

Hypothesis 1: It was hypothesised that levels of well-being are lowest in users seeking sexual encounters, and highest in users in users seeking friendships. Levels of well-being in users seeking romantic relationships were hypothesized to be somewhere in between the two other groups.

Understanding how motivation for use influences levels of self-esteem in online daters

Hypothesis 2: It was hypothesised that levels of self-esteem are lowest in users seeking sexual encounters, and highest in users in users seeking friendships. Levels of self-esteem in users seeking romantic relationships ere hypothesized to be somewhere in between the two other groups.

Understanding how self-esteem may affect the relationship between motivation for use of online dating and levels of mental well-being

Hypothesis 3: It was hypothesised that self-esteem has a significant effect on the relationship between motivation for online dating and levels of mental well-being. Participants low in self-esteem were expected to a present significant association between motivation for use of online dating and levels of well-being. Among participants low in self-esteem, the ones seeking sexual encounters were expected to present the lowest levels of well-being, whereas participants seeking friendship would present the highest levels of well-being. Participants seeking relationships were expected to be neither the lowest nor the highest group of well-being, but in the middle, if self-esteem was found to be a moderator. Participants high in self-esteem were expected to show no association between motivation for use and levels of well-being.

2. Methods

2.1 Design

The current research is mainly based on correlational/causal-comparative studies and questionnaire survey design.

2.2 Participants and Procedure

This study included 154 participants with the majority being students of the University of Twente. The inclusion criteria of the study required that participants had to be users of online dating apps/services. Participants were also required to possess sufficiently good English language skills. Through the use of the Test Subject Pool (SONA Systems), the method of opportunity sampling was applied (Forshaw, 2013) and respondents were offered to obtain (0.25) credits in the system following their participation as compensation. Other participants were invited to the study through personal contact. This range of participants has previously been used in similarly conducted studies concerning online dating behaviours (Strübel & Petrie, 2016).

Participants consisted of 88 female participants and 66 male participants, ranging between the ages 18 to 55 (M (age)=23, SD (age)=5.04). Nationality of participants was comprised of the following, 109 Germans, 17 Dutch, 11 Danish, three Brits, two Americans, and the remaining 12 participants each from other separate countries.

Prior to offering the survey to potential respondents, a request for approval was submitted to the ethics committee of the University of Twente. The request was approved by the BMS Ethics Committee for Behavioural, Management and social sciences, and the survey was launched on the Qualtrics, and made available on the Sona Systems Portal. Additionally, the survey was promoted through personal social media pages of the researchers (Facebook and Instagram).

Respondents were presented with an informed consent to be approved before starting the survey, wherein the aim of the study and the procedure would be shortly explained. Participants were sufficiently informed of their right to either participate or exit the study prior to signing the consent form.

Full anonymity was disclosed, explaining that the information of participants would solely be used for the completion of the studies mentioned in the consent form. Information regarding the number of questions to be answered, and the approximate time of completion would be disclosed to participants. The respondents signed a written informed consent form prior to their

participation, in conformity with the guidelines provided by the University of Twente BMS Ethics Committee. If participants decided to agree with the conditions mentioned, they would be allowed to partake in the completion of the survey.

After completion of the survey, the participants would be allowed to provide their own personal contact details, in case that they wanted information concerning the outcomes of the study, after which they were able to exit the survey.

2.3 Materials

University students accessed the SONA-Systems website for access to the survey. Other participants collected through both social media, and direct contact with the researchers were directed to the Qualtrics website for completion of the survey (Smith, 2005). The survey was compiled by approximately 11 student researchers through the use of Qualtrics, in which all researchers had access to the document. This allowed for more respondents and further ease of use.

Mental Health Continuum Short Form. The Mental Health Continuum Short Form is a 14-item clinical questionnaire aimed towards assessing states of positive mental health and well-being. The MHC-SF assesses three components of well-being ranging from emotional, social and psychological in which a number of questions are assigned to each aspect (Perugini, de la Iglesia, Castro Solano & Keyes, 2017). Each item in the questionnaire requires respondents to answer a question based on a 6-point Likert-scale, based on what respondents have experienced over the past month (Perugini, et al 2017). Each item can be scored between 0 and 5, leaving respondents with final scores ranging between 0 and 70 points. The items were combines into a scale score with the following division; scores 0 to 15 being account for by emotional well-being, scores 0 to 25 measuring social well-being and scores 0 to 30 measuring psychological well-being. Levels of well-being are assumed to be higher, in participants with high scores (Keyes, Wissing, Potgieter, Temane, Kruger & van Rooy, 2008).

Previous studies have presented that the MHC-SF has good psychometric properties (Perugini, et al, 2017). One study presented the questionnaire with good internal consistency (Cronbach's alpha= 0.89). The same study confirmed that the scale associated with measuring emotional well-being converged with positive affect and life satisfaction measures. Furthermore,

the social well-being scale converged and correlated strongly with another external measure of well-being. The psychological well-being scale converged strongly with a measure of the presence of meaning in life (Perugini, et al, 2017). Overall, the three subscales of the MHC-SF were found to be valid and reliable measures of each respective field of well-being measurement when compared to other questionnaires of reputable sources (Perugini, et al, 2017). An internal consistency analysis was conducted on the current study, these results presented that for the MHC-SF the Cronbach's alpha was α =.888 (α =.892 on standardised items).

Another study by Lamers, Westerhof, Bohlmeijer, ten Klooster & Keyes (2011) confirmed that the MHC-SF has proven high internal reliability, as well as moderate test-retest reliability. Furthermore, the study confirmed the 3-factor structure related to the three distinct well-being categories through confirmatory factor analysis (Lamers, Westerhof, Bohlmeijer, ten Klooster & Keyes, 2011).

Rosenberg Self-Esteem Scale. The Rosenberg Self-Esteem Scale (RSES) is aimed at measuring the levels of self-worth in the respondent. The scale records measures in both positive and negative feelings towards oneself (Rosenberg, 1965). Respondents are presented with 10 items, each to be answered on a 4-point Likert scale ranging from, "Strongly Agree", "Agree", "Disagree" and "Strongly Disagree". Reverse scoring is present. Participants are placed on a continuum ranging from 10 to 40, the higher the scores, the higher levels of self-esteem will be assumed (Rosenberg, 1965). The Cronbach's alpha of the RSES in current study was calculated to the score of α =.853 (α =.857 on standardised items). Furthermore, the test-retest reliability for the scale has been presented as ranging from 0.82 to 0.85, showing good reliability (Rosenberg, 1965).

2.4 Data analysis

General information such as the number of participants, age, standard deviation, minimum and maximum scores, and general descriptive statistics was computed. Demographics were screened further for a clearer distinction of the backgrounds of participants. Next, two one-way ANOVA's were carried out to compare the differences in well-being, and in self-esteem between the three motivation groups. Third, a Pearson's correlation was performed between mental health and self-esteem levels. Lastly, the use of PROCESS macro by Hayes (2013) was used for two simple

moderation analyses, testing for whether an interaction effect of self-esteem was present between the effects of motivations on levels of well-being. Motivation as the independent variable consisted of three categories and was dummy-coded to allow for two separate moderation analyses, to account for it being a multicategory variable. Self-esteem was entered as the moderating variable, and mental health measuring well-being as the dependent variable. The following analyses were all conducted through the use of SPSS Statistics version 24 (IBM Corp., 2016). A statistically significant result was identified as having a P-value lower than 0.05.

Data preparation

The data from Qualtrics, necessary for the completion of this study was imported into IBM SPSS statistics 25 (IBM Corp., 2016), for further analysis to be conducted. The data was screened as to make sure that responses would be valid and completed as expected by the researchers including checking for completion time and avoiding rushed responses. The responses were ordered into the categories necessary, and demographics variables were clearly presented. Additionally, the total score on the Self-Esteem Scale and the MHC-SF were calculated for each participant, presented in two "total score" columns. One column presented for the motivations would also allow each participant to be addressed based on their chosen motivation for use of online dating.

One-way ANOVA

Two one-way ANOVA's were conducted through the use of SPSS, where the independent variable "motivation" was compared to the means of mental health and self-esteem within each of the three levels of motivation. The data would additionally be plotted for clearer visualisation of potential differences in means, but only if proven to be significant. The information provided here would be sufficient to analyse hypotheses one and two.

PROCESS macro Hayes

The variables were then used to conduct two simple moderation analyses through the use of the PROCESS macro plug-in developed by Hayes (2013) on SPSS Statistics. "Motivation" would be dummy coded, comparing sexual encounters as the reference variable with "seeking romantic relationships" in one analysis and "seeking friendship" in another. Thus, sexual encounter and either seeking romantic relationships or friendships were inserted as the independent variable (X),

"Mental Health" scores as the dependent variable (Y) and "Self-Esteem" scores as the moderating variable presented as (W) in PROCESS macro. Model one was used for a multiple regression analysis displaying a potential interaction effect. PROCESS macro would then compute data portraying whether a significant moderating interaction effect were found in the analyses. This would allow for sufficient data to analyse the third hypothesis, investigating a moderating effect of self-esteem on the relationship between motivation for online dating and mental health.

3. Results

3.1 Descriptive statistics

Descriptive statistics of the variables used for analysis is presented below. Table 1 presents the mean, minimum, maximum, SD and range for mental health and self-esteem scores in each motivation group. Additionally, number of participants in each group is presented.

Table 1

Descriptive statistics for self-esteem, mental health by motivation

Motivation		Range	Minimum	Maximum	Mean	SD
Friendship						
	Mental Health	46.00	29.00	75.00	56.60	11.61
	Self-Esteem	19.00	11.00	30.00	20.30	4.54
	N = 40					
Romantic						
relationships	Mental Health	43.00	29.00	72.00	53.89	10.53
	Self-Esteem	21.00	11.00	32.00	20.83	4.57
	N = 67					
Sexual encounter	S					
	Mental Health	50.00	29.00	79.00	54.02	12.65
	Self-Esteem	19.00	10.00	29.00	20.21	5.00
	N = 47					
Mental Health (Total)		50.00	29.00	79.00	54.64	11.48
Self-Esteem (Total)		22.00	10.00	32.00	20.51	4.68
N = 154						

Note. The theoretical range of scores in the SES is from 10 to 40. The theoretical range of the MHC-SF is from 0 to 70.

3.2 Difference in mental health and self-esteem levels between groups of motivation

To investigate the relationship between Motivation (X) and Mental Health (Y), a One-Way ANOVA was performed. The analysis revealed that there was no statistically significant difference in mental health between the three groups in the motivation category [F(2,151)=.790; p=.456].

Additionally, to investigate the relationship between Motivation (X) and Self-Esteem (Y), another One-Way ANOVA was performed. The second analysis revealed no statistically significant difference in self-esteem levels between the three groups of motivation [F(2,151)=.294; p=.745].

3.3 Correlation between self-esteem and mental health scores

A Pearson's correlation was conducted in order to investigate the relationship between self-esteem and mental health scores. Self-esteem and mental health were found to be moderately negatively correlated, r(154)=-.442, p<.001.

3.4 Self-esteem as a moderator between motivation and mental health

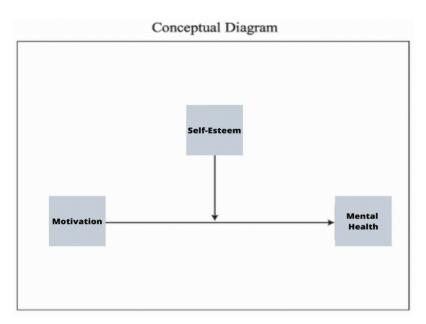


Figure 1. Visualisation of Model 1 used in PROCESS macro for the moderation analysis.

Two simple moderation analyses were performed. Figure 1 presents an illustration of the model used in the analyses. Following the implementation of variables, the first moderation analysis included the independent variable with three levels (Motivation), where "sexual encounters" was coded to 1, while friendship and romantic relationships was coded to 0. Additionally, self-esteem was added as a potential moderator, and mental health as the outcome variable. The analysis showed that the interaction term was not statistically significant (b=.2104, s.e.=.4611, R^2 =.2052) [F(5,148)=7.64; p=.6488].

Additionally, an analysis conducted through the PROCESS function of analyzing direct effects between IV and DV included "sexual encounters" and "friendship" and their relationship with mental health. The results show that the effect of "sexual encounters" and "friendship" had a negative and not significant effect on mental health (b=-6.448, s.e.=9.677, p=.5062).

The second moderation analysis included "friendship" being coded to 1 and "romantic relationships" as well as "sexual encounters" being coded to 0. Self-esteem was added as a moderator, and mental health as the outcome variable. The analysis showed that the interaction term was not statistically significant (b=.0780, s.e.=.4775, R^2 =.2052) [F(5,148)=7.64; p=.8704]. Again, the function of PROCESS was used to investigate the direct effects of "friendship" and "romantic relationships" on mental health. The result was negative and not significant (b=-4.259, s.e.=9.931, p=.6686).

The main effect of self-esteem on mental health was negative and significant (b=-1.0872, s.e.=.1792, p<.001).

4. Discussion

The purpose of this study was to investigate whether levels of well-being and self-esteem in online daters would be subject to change depending on their motivation for use of online dating services. Additionally, the effects of self-esteem and its role as a moderator in the relationship between well-being and motivation was further examined. The results of the study suggest that there is no significant relationship present between the motivations of online daters and their experienced levels of either self-esteem or well-being. The results suggest that the reason for use (ranging from sexual encounters, friendship seeking, or romantic relationships), of online daters when it comes to online dating does not seem to have an effect on the dater's well-being. Also, self-esteem was not found to play a significant role in moderating the relationship between motivations and well-being.

4.1 Understanding how motivation for use influences levels of well-being and self-esteem in online daters

The first two hypotheses; "Levels of well-being are lowest in users seeking sexual encounters, and highest in users in users seeking friendships. Levels of well-being in users seeking romantic relationships were hypothesized to be somewhere in between the two other groups.", and "Levels of self-esteem are lowest in users seeking sexual encounters, and highest in users in users seeking friendships. Levels of self-esteem in users seeking romantic relationships ere hypothesized to be somewhere in between the two other groups.", have both been rejected according to the results presented through an analysis of variance (ANOVA). There was no significant difference observed between users being on online dating outlets motivated by either seeking sexual encounters, romantic relationships or friendships.

First, these finding is not in line with the findings proposed in the research conducted by Strübel & Petrie, (2016) proposing that events involving objectification in online dating may lead to lower levels of well-being and possibly lower self-esteem too. In this study, objectification was linked to the variable of being motivated to use online dating for the sake of potential sexual encounters. In previous research, it was proposed that behaviours relating to objectification and sexual interest may lead to lower levels of well-being and self-esteem in the majority of users when compared to users seeking friendships or possible long-lasting relationships (Strübel & Petrie, 2016).

The results of this study may indicate that the comparison between the variables of body objectification and sexual encounter may have been inaccurate, or weakly correlated as to be used synonymously. The variable defined as seeking sexual encounters within users may not correctly correlate with the variable of body objectification as presented in the research of Strübel & Petrie, (2016). Thus, this could be a possible explanation for the incongruity of the results when comparing both types of research. Also, being motivated by possible sexual encounters does not have to be related to negative outcomes such as lower levels of self-esteem, well-being or feeling objectified. The results may indicate that sexual motivation may be associated with either positive or negative outcomes depending on the unique situation of each individual. It can be assumed that sexual encounters would not unquestionably have to be regarded as being either positively or negatively linked to levels of well-being. The results may be partly accounted for by the fact that sexual encounter may not be synonymously associated with more negative traits such as the undesirable outcomes of body objectification, or low levels of self-esteem (Strübel & Petrie, 2016).

Second, part of the explanation may also lie in that the levels of well-being and self-esteem of each individual irrespective of their motivations may differ, with no apparent correlation when compared to motivation for use of online dating services from a general standpoint (Sumter, Vandenbosch & Ligtenberg, 2017). This may mean that both well-being and self-esteem are composed and affected by the individual experiences of users and may also be composed of many other motives depending on the unique case discussed. This could for instance include variables such as Ease of Communication and Thrill of Excitement to mention a few, which were included in studies similar to this one (Sumter, Vandenbosch & Ligtenberg, 2017). Therefore, well-being and self-esteem may not be significantly discriminated based on whether individuals are motivated by each of the three components of motivation for use described in this research.

Third, the hypothesis did not support the claim presented in previous studies, proposing that deeper initial investment from users seeking relationships is present when compared to users seeking friendships on online dating services (Chamorro-Premuzic, 2014). This can be related to the proposition that regardless of levels of emotional investment the outcome of each situation naturally differs, therefore, affecting levels of well-being and self-esteem differently from user to user (Chamorro-Premuzic, 2014).

Additionally, an effort was made to compare the self-esteem scores of this study to norm scores of the Self-Esteem Scale (SES). One study involving 460 Dutch participants recruited

through the snowball sampling method presented the mean (m=20.9, SD=4.4), which is not too deviant from the mean of the motivation groups of the current study on the SES (Franck, De Raedt, Barbez, & Risseek, 2008). Participants seeking friendships (m=20.3, SD=5) and sexual encounters (m=20.21, SD=4.57) were just below this norm, while participants seeking romantic relationships were closer to the norm score (m=20.83, SD=4.64). Participants seeking sexual encounters were indeed the group with lowest self-esteem scores as hypothesized, whereas friendship was hypothesised to be highest, but was instead the second lowest. Participants seeking romantic relationships were the highest in self-esteem scores also deviating from what was hypothesised, and thus, closest to the norm scores provided (Franck, De Raedt, Barbez, & Risseek, 2008). Yet, the differences in the comparisons presented here are rather minor, thus, no absolute conclusion may not be drawn from them, particularly considering the smaller sample size of each motivation group.

4.2 Understanding how self-esteem may affect the relationship between motivation for use of online dating and levels of mental well-being

The third, and last hypothesis "It was hypothesised that self-esteem has a significant effect on the relationship between motivation for online dating and levels of mental well-being. Participants low in self-esteem were expected to present significant association between motivation for use of online dating and levels of well-being. Among participants low in self-esteem, the ones seeking sexual encounters were expected to present the lowest levels of well-being, whereas participants seeking friendship would present the highest levels of well-being. Participants seeking relationships were expected to be neither the lowest nor the highest group of well-being, but in the middle. Participants high in self-esteem were expected to show no association between motivation for use and levels of well-being.", was related to testing whether self-esteem was a significant moderator on the relationship between motivations of online daters and well-being. The results proved that self-esteem did not serve as a significant moderator in the relationship. This would indicate that levels of self-esteem does not have a significant role to play in whether the relationship between motivation for use in online daters is associated with levels of well-being.

Again, according to Strübel & Petrie, (2016), self-esteem was proposed to be tightly linked to well-being in the context of online dating. Yet, the results do not support this theory according to the interaction effects of both analyses not being significant. However, it is important to consider

that most studies such as the one conducted by Strübel & Petrie, (2016) were devoted towards measuring self-esteem and well-being in a more general sense in online daters, regardless of their motivation for use of these services. Often, online-daters would be compared to users that are not using online-dating services, leading to a more polarizing difference (Strübel & Petrie, 2016).

Thus, when the sample of online-daters is divided into groups of motivation for use, a difference among them may not be present, even though there is a link between the online-daters having differing levels of well-being than non-users generally (Strübel & Petrie, 2016). A key point of this study was to investigate whether there was a further difference, not between online daters and non-users as these variables seem to be well studied previously, but within online daters separated in groups defined by their motivation for use. This could mean that differences between groups would be harder to notice as the scope of the study is further narrowed. When looking at similar studies such as that conducted by Mikyoung, Kyoung-Nan & Mira (2009), it seems as if individuals with lower levels of self-esteem are more inclined to use dating apps, particularly if romantic relationship was not the main motivation for use. Yet, previous research such as that by Strübel & Petrie (2016) may propose that levels of well-being for use may be linked to self-esteem levels, but when considering motivations as the independent variable, with self-esteem as a moderator, the effect seems to not be significant.

However, the correlation analysis indicates that well-being and self-esteem were moderately negatively correlated, further disproving the proposition that they should be positively associated in that when self-esteem is high, so is well-being. This finding further disproves the theories by Strübel & Petrie (2016) which the hypothesis was formed after. It may be advised to investigate the relationship between self-esteem and well-being further before assuming direct correlation between the two before continuing research.

4.3 Strengths and Limitations

A strength of this study relates to the efforts in narrowing down the scope of research and the variables discussed. Research in the area of online dating and its relationship to well-being as well as self-esteem is readily available, yet, discussing variables such as motivations of online-daters and the possible relationship to well-being is less popular among the research available (Du, King & Chi, 2017). Additionally, the effort to investigate whether self-esteem is related to well-being in the context of online dating is another strength of this study. This is particularly interesting as

well-being and self-esteem seems to be closely related in a more general sense according to previous research (Du, King & Chi, 2017).

Still, there are some clear limitations to this study which needs to be further discussed. One limitation relates to the definition of constructs, particularly the group of motivation for use in which online daters were divided into. The three groups of motivation consisted of using online dating for sexual encounters, friendship, or romantic relationships. Participants were forcibly assigned to either of the three groups in order to be allowed to participate in the research. Of course, it is sensible to assume that not all online daters will inevitably be part of either of the three groups. For example, some online daters may be using these services to simply "see whether they are still on the market" (Chamorro-Premuzic, 2014; Seefeldt, 2014). This was a noticeable limitation as the researcher was subsequently approached by participants asking whether the limited amount of answer options when it came to motivation for use of their online dating services, could be configured according to their own specific liking. However, the three groups described were mainly chosen for the sake of simplicity of research and making a clear distinction between the three "main" groups of online daters.

Another practical implication may relate to the questionnaires used. The Mental Health Continuum-Short Form presents participants with a score divided into emotional well-being, psychological well-being, and social well-being. Consequently, these scores are summed up to a total mental well-being score. The total mental well-being scores was used in this study, whilst the three sub scores were left out of the analyses. Including these sub scores may have yielded results to be further pondered upon. This could mean that each of the subscales may have had more or less of a significant relationship to the motivations of users measured. This is a point of interest as the study of Strübel & Petrie (2016), showed that users of Tinder reported lower levels of psychological well-being when compared to non-users, whilst showing no significant difference in emotional or social well-being levels.

4.4 Future research and recommendations

Future research may be necessary in order to gain a further understanding of with-in group differences between online daters, particularly when defining the variables by which groups should be compared. Careful measures should be taken when grouping people into limited amounts of categories or groups of motivation, as to make sure that as few participants as possible are forced

into a group that they may not fully belong to. For instance, individuals may not be looking for friendships, relationships or sexual encounters, but may be instead using online dating services for another unrelated reason. Answer options should be rather extensive as to make sure that the comparison between groups consist of participants that accurately fit within the groups being analysed. This limitation could be alleviated by allowing participants to type in their specific motivation for the use of online dating services when conducting the study. Additionally, allowing for more variables to consider could lead to more insight on how different motivations may affect levels of well-being and self-esteem differently, depending on where individuals may be in their lives, age, occupation and environment-wise.

This study has attempted to further investigate the effects of online dating culture and its effects on a steadily growing audience. Research has previously been conducted between users and non-users of online dating services, but it rarely seems that online dating is investigated independently. This study also seeks to motivate researchers to consider differences in other various factors of online daters as a result of their online dating behavior. Other variables than motivations, related to online dating may also be considered and compared alongside with well-being and self-esteem as to provide further insight and knowledge into the effects of online dating on society.

References

- Cacioppo J. T., Cacioppo S., Gonzaga G. C., Ogburn E. L., VanderWeele T. J. (2013). Marital satisfaction and break-ups differ across on-line and off-line meeting venues. *Proceedings of the National Academy of Sciences, 110*(25), 10135–10140. doi:10.1073/pnas.1222447110
- Chamorro-Premuzic T. (2014). The tinder effect: Psychology of dating in the technosexual era. *The Guardian*. Retrieved February 16, 2020, from http://www.theguardian.com/media-network/media-network-blog/2014/jan/17/tinder-dating-psychology-technosexual
- Couch D., & Liamputtong P. (2008). Online dating and mating: The use of the Internet to meet sexual partners. *Qualitative Health Research*, 18(2), 268–279. doi:10.1177/1049732307312832
- Du H, King RB, Chi P (2017) Self-esteem and subjective well-being revisited: The roles of personal, relational, and collective self-esteem. *PLoS ONE 12*(8): e0183958. https://doi.org/10.1371/journal.pone.0183958
- Forshaw, M. (2013). Your Undergraduate Psychology Project (2nd ed.). John Wiley & Sons.
- Franck, E., De Raedt, R., Barbez, C., & Samp; Risseek, Y. (2008). Psychometric Properties of the Dutch Rosenberg Self-Esteem Scale. *Psychologica Belgica*, 40(1), 25-35. http://dx.doi.org/10.5334/pb-48-1-25
- Fullwood, C., & Attrill-Smith, A. (2018). Up-Dating: Ratings of Perceived Dating Success Are Better Online than Offline. *Cyberpsychology, Behavior, and Social Networking*, 21(1), 11-15. doi:10.1089/cyber.2016.0631

- Gill, D. L., Chang, Y. K., Murphy, K. J., Holder, K. M., & Etnier, J. L. (2006). Quality of life assessment in physical activity and health promotion. *Medicine and Science in Sports and Exercise*, 38, 370–371.
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Press.
- IBM Corp. Released 2016. IBM SPSS Statistics for Macintosh, Version 24.0. Armonk, NY: IBM Corp.
- Keyes, C. L. M., Wissing, M., Potgieter, J. P., Temane, M., Kruger, A., & van Rooy, S. (2008). Evaluation of the mental health continuum-short form (MHC-SF) in setswana-speaking south africans. *Clinical Psychology and Psychotherapy*, 15(3), 181-192. doi:10.1002/cpp.572
- Lamers, S.M., Westerhof, G.J., Bohlmeijer, E.T., ten Klooster, P.M. and Keyes, C.L. (2011), Evaluating the psychometric properties of the mental health Continuum-Short Form (MHC-SF). *J. Clin. Psychol.*, 67: 99-110. doi:10.1002/jclp.20741
- Lomanowska A., & Guitton M. (2016). Online intimacy and well-being in the digital age. *Internet Interventions*, 4(2),138-144. doi.org/10.1016/j.invent.2016.06.005.
- Lupano Perugini, M. L., de la Iglesia, G., Castro Solano, A., & Keyes, C. L. (2017). The Mental Health Continuum-Short Form (MHC-SF) in the Argentinean Context: Confirmatory Factor Analysis and Measurement Invariance. *Europe's journal of psychology, 13*(1), 93–108. doi.org/10.5964/ejop.v13i1.1163

- Margalit L. (2014). Tinder and evolutionary psychology. *TechCrunch*. Retrieved February 16, 2020 from https://techcrunch.com/2014/09/27/tinder-and-evolutionary-psychology/?ncid=rss
- Mazzeo, R. S., Cavanagh, P., Evans, W. J., Fiatrone, M., Hagverg, J., McAuley, E.,
 & Starzell, J. (1998). American college of sports medicine position stand. Exercise and physical activity for older adults. *Medicine and Science in Sports and Exercise*, 30, 992–1008. doi:10.1097/00005768-199806000-00033
- Mikyoung, K., Kyoung-Nan, K., & Mira. L. (2009). Psychological Characteristics of Internet Dating Service Users: The Effect of Self-Esteem, Involvement, and Sociability on the Use of Internet Dating Services. *Cyberpsychology & Behavior: The impact of the Internet, multimedia and virtual reality on behavior and society.* 12(4), 445-449. doi:10.1089/cpb.2008.0296.
- Orosz, G., Benyó, M., Berkes, B., Nikoletti, E., Gál, É., Tóth-Király, I., & Böthe, B. (2018). The personality, motivational, and need-based background of problematic Tinder use. *J Behov Addict.*, 7(2), 301–316. doi:10.1556/2006.7.2018.21
- Ranzini, G., & Lutz, C. (2018). Love at first swipe? Explaining Tinder self-presentation and motives. *Mobile Media & Communication*, *5*(1), 80–101 doi.org/10.1177/2050157916664559
- Rosenberg, M. (1965). Society and the adolescent self-image. Princeton, NJ: Princeton University Press. doi.org/10.1515/9781400876136
- Seefeldt B. (2014). Tinder initiation messages. Chicago, IL: *Department of Computer Science, University of Illinois*; Retrieved February 16, 2020,

 from http://m.benseefeldt.com/content/sites/Tinder/tinder_paper.pdf

- Smith, R. (2005). Qualtrics (Version 2020 April) [Computer software]. Retrieved April 19, 2020, from www.qualtrics.com
- Sonstroem, R. J., & Morgan, W. P. (1989). Exercise and self-esteem: Rationale and model.

 Medicine and Science in Sports and Exercise, 21(3), 329–337. doi:10.1249/00005768-198906000-00018
- Strübel, J. L., & Petrie, T. A. (2016, August 4). Tinder: Swiping Self Esteem? *American Psychological Association*. Retrieved February 16, 2020, from https://www.apa.org/news/press/releases/2016/08/tinder-self-esteem
- Sumter, S. R., Vandenbosch, L., & Ligtenberg, L. (2017). Love me Tinder: Untangling emerging adults' motivations for using the dating application Tinder [Abstract]. *Telematics and Informatics*, 34(1), 67-78. doi.org/10.1016/j.tele.2016.04.009
- Timmermans, E., & De Caluwé, E. (2017). To Tinder or not to Tinder, that's the question: An individual differences perspective to Tinder use and motives. *Personality and Individual Differences*, *110*, 74–79. doi.org/10.1016/j.paid.2017.01.026
- Wiederhold B. K. (2015). Twenty years of online dating: Current psychology and future prospects. *Cyberpsychology, Behavior, and Social Networking, 18*(12), 695–696.

Appendix A

ROSENBERG SELF-ESTEEM SCALE

Reference:

Rosenberg, M. (1965). Society and the adolescent self-image. Princeton, NJ: Princeton University Press.

Description of Measure:

A 10-item scale that measures global self-worth by measuring both positive and negative feelings about the self. The scale is believed to be uni-dimensional. All items are answered using a 4-point Likert scale format ranging from strongly agree to strongly disagree.

Scale Instructions

Below is a list of statements dealing with your general feelings about yourself. Please indicate how strongly you agree or disagree with each statement.

1. On the whole, I am satisfied with myself.

Strongly Agree Agree Disagree Strongly Disagree

2. At times I think I am no good at all.

Strongly Agree Agree Disagree Strongly Disagree

3. I feel that I have a number of good qualities.

Strongly Agree Agree Disagree Strongly Disagree

4. I am able to do things as well as most other people.

Strongly Agree Agree Disagree Strongly Disagree

5. I feel I do not have much to be proud of.

Strongly Agree Agree Disagree Strongly Disagree

6. I certainly feel useless at times.

Strongly Agree Agree Disagree Strongly Disagree

7. I feel that I'm a person of worth, at least on an equal plane with others.

Strongly Agree Agree Disagree Strongly Disagree

8. I wish I could have more respect for myself.

Strongly Agree Agree Disagree Strongly Disagree

9. All in all, I am inclined to feel that I am a failure.

Strongly Agree Agree Disagree Strongly Disagree

10. I take a positive attitude toward myself.

Strongly Agree Agree Disagree Strongly Disagree

Scoring:

Items 2, 5, 6, 8, 9 are reverse scored. Give "Strongly Disagree" 1 point, "Disagree" 2 points, "Agree" 3 points, and "Strongly Agree" 4 points. Sum scores for all ten items. Keep scores on a continuous scale. Higher scores indicate higher self-esteem.

Appendix B

Adult MHC-SF (ages 18 or older)

Please answer the following questions are about how you have been feeling during the past month. Place a check mark in the box that best represents how often you have experienced or felt the following:

			I	ı		I
	NE VER	ONCE	ABOUT	ABOUT 2	ALMOS T	EVERY
During the past month, how often		OR	ONCE A	OR 3	EVERY	DAY
did you feel		TWICE	WEEK	TIMES A	DAY	
				WEEK		
1. happy						
2. interested in life						
3. satisfied with life						
4. that you had something						
important to contribute to society						
5. that you belonged to a						
community (like a social group, or						
your neighborhood)						
SEE BELOW 6. that our society						
is a good place, or is becoming a						

better place, for all people			
7. that people are basically good			
8. that the way our society works			
makes sense to you			
9. that you liked most parts of your			
personality			
10. good at managing the			
responsibilities of your daily life			
11. that you had warm and trusting			
relationships with others			
12. that you had experiences that			
challenged you to grow and			
become a better person			
13. confident to think or express			
your own ideas and opinions			
14. that your life has a sense of			
direction or meaning to it			