



Universiteit Leiden

Psychologie  
Faculteit der Sociale Wetenschappen



# Will I miss anything?!

An investigation into the relationship between the personal need for information, the personal need to belong, e-group participation, fear of missing anything, and perceived stress in students

---

Daphne van den Heuvel

In collaboration with Ismail Khalid S0963062

---

**Master thesis Psychology, specialisation Occupational Health Psychology  
Institute of Psychology**

**Faculty of Social and Behavioral Sciences – Leiden University**

**Date:** *August 26, 2019*

**Student number:** *S1550063*

**First examiner of the university:** *Dr. A. P. Wit*

**Second examiner of the university:** *Dr. N. J. van Doesum*

<b>Table of contents</b>	<b>2</b>
<b>Acknowledgement</b>	<b>3</b>
<b>Abstract</b>	<b>4</b>
<b>Introduction</b>	<b>5</b>
<b>Theoretical background</b>	<b>6</b>
<i>Social comparison theory</i>	6
<i>Fear of missing</i>	7
<i>Stress</i>	9
<i>In short</i>	9
<b>Present research</b>	<b>10</b>
<i>Research goal</i>	10
<i>Research questions</i>	10
<i>Hypotheses</i>	10
<b>Method</b>	<b>11</b>
<i>Participants</i>	11
<i>Measurements instruments</i>	11
<i>Procedure</i>	13
<i>Analyses</i>	14
<b>Results</b>	<b>14</b>
<i>Participants</i>	14
<i>Reliability</i>	15
<i>Gender</i>	16
<i>The relation between the personal need for information and one's participation in e-groups to meet the personal need for information (Hypothesis 1)</i>	16
<i>The relation between the personal need to belong and one's participation in e-groups to meet the personal need to belong (Hypothesis 2)</i>	19
<i>The relation between one's participation in e-groups to meet the personal need for information and FOMI (Hypothesis 3).</i>	20
<i>The relation between one's participation in e-groups to meet the personal need to belong and FOMO (Hypothesis 4).</i>	22
<i>The relation between FOMI and FOMI-related stress (Hypothesis 5)</i>	24
<i>The relation between FOMO and FOMO-related stress (Hypothesis 6)</i>	24
<i>The relation between FOMO-related stress, FOMI-related stress and FOM stress (Hypothesis 7).</i>	26
<b>Discussion</b>	<b>28</b>
<i>General</i>	28
<i>Participation in e-groups to meet one's personal needs</i>	28
<i>Fear of missing information (FOMI) and fear of missing out (FOMO)</i>	28
<i>FOMI-related stress and FOMO-related stress</i>	29
<i>Stress related to the Fear of Missing (FOM)</i>	29
<i>Strengths, limitations, and further research</i>	30
<b>Conclusion</b>	<b>31</b>
<b>Reference list</b>	<b>32</b>
<b>Appendix A – Advertisement</b>	<b>35</b>
<b>Appendix B – Information letter</b>	<b>36</b>
<b>Appendix C – Informed consent</b>	<b>38</b>
<b>Appendix D – Questionnaire</b>	<b>39</b>
<b>Appendix E – Debriefing</b>	<b>45</b>
<b>Appendix F – Scales</b>	<b>47</b>

## Acknowledgement

The present study has been conducted to write a master thesis for the specialisation 'Occupational Health Psychology'. I specifically chose this thesis topic because I feel that all my peers around me are experiencing stress during their college time. Besides, I experienced first-hand what stress can do with your body, so I feel the importance to better understand the reasons behind this stress, in order to create a working intervention in the future to enhance students well-being. The main objective of the master thesis was to expand my knowledge on doing scientific research. For instance, coming up with a research question, writing a theoretical framework, coming up with a method, acquiring respondents, cleaning up data, running analyses, recording results, and writing a report on the project.

I would like to thank my thesis partner Ismail for going through this process together. For the countless hours of deliberating and discussing everything that is possible, and the many coffees we shared in order to get our minds straight and find the courage to carry on. Furthermore I would like to thank my thesis supervisor Dr. Arjaan Wit. Although he could give us a very hard time by asking a lot of questions during the meetings, he also gave us a lot of knowledge which I hope I can apply in my further professional career. And when someone is telling me a difficult story, I use his saying; "*hoe zou je dat aan de keukentafel zeggen?*".

In special, I would like to thank Andrew, Steye, Stan, and Rianne for taking some time out of their busy schedule to check my thesis when it comes down to my English writing, and discussing parts I was in doubt of. And lastly, my boyfriend Thomas. I would like to thank him for his support and love during this project. I used you countless times as a sounding board, stress ball, butler, and shoulder to cry on. But in the end you are the person most proud of my accomplishments. Thanks sweetie!

## Abstract

Being a student can be very stressful. Research shows that, among other things, experiencing fear of missing out (FOMO) is one of the stressors. A frequently used way to deal with this kind of stress is to reduce one's smartphone usage. However, this may give students even more stress, since it inhibits them from meeting both their personal need to belong as well as their personal need for information. According to the social comparison theory, these are the two main reasons for an individual to participate in a group. Research has shown that human beings prefer meeting their personal need to belong over meeting their personal need for information. Meaning, experiencing FOMO may be more stressful for a student than experiencing fear of missing information (FOMI). The aim of this research is to search into the relation between FOMO, FOMI, and the general fear of missing (FOM) Students ( $n = 94$ ) have completed an online questionnaire. Multiple regression analyses show that students who have a strong personal need for information are more susceptible to FOMI. Besides, students who have a strong personal need to belong are more susceptible to FOMO. Students who experience FOMO-related stress, as well as students who experience FOMI-related stress experience FOM stress. This finding shows that both experiencing FOMO-related stress, as well as experiencing FOMI-related stress is stressful, but experiencing FOMO-related stress is slightly more stressful. These finding may imply that putting away your smartphone in order to deal with smartphone stress is not effective since it enhances FOMO-related stress, FOMI-related stress, and FOM stress. Further research must be done to further explore how FOMI, FOMI-related stress, FOM and FOM stress are related, also with regard to possible gender differences, in order to eventually create a proper working intervention. A longitudinal study must be done into cause-effect relationships.

## Introduction

*\*BEEP-BEEP\* A WhatsApp message arrives on your smartphone. You immediately stop paying attention to the lecture and start reading the message. It is a message in a WhatsApp group which you are a part of with your fellow course members. A few of them are going to a party tonight and are asking who is willing to join them. You instantly start worrying and feeling stressed since you have an important deadline tomorrow, which still needs a lot of work. However, you also want to go to the party to meet your peers since you do not want to feel left out or miss anything. Your friend, who is sitting next to you, is part of the same WhatsApp group. When she is reading the message, she does not move a muscle and turns off her smartphone without responding. How can it be that the same message can cause such different reactions in people? About an hour later, you get a message in a different WhatsApp group with members of a different course. One of them is asking which chapters he has to read for the upcoming exam. Since you do not know the answer to the question and since the answer does not interest you, you put your smartphone away without looking at the reactions to his question. How can it be that this message makes you react in a different way than the first message? What are the differences between both messages?*

There are two main reasons why human beings have a natural preference to be part of a group. First, each individual has a personal need for information. As a result, we want to obtain accurate and objective information about the world around us. In order to acquire this information, we rely on others (Cialdini, 2009). Second, each individual has a personal need to belong – to feel like we are okay and that we matter. We also rely on others to give us that feeling. This ‘need to belong’ can be fulfilled by the maintenance of interpersonal relationships (Baumeister & Leary, 1995; Carvallo & Gabriel, 2006). Participation in a group can wholly or partly provide an individual with the personal need for information and/or the personal need to belong. When one or both of these needs are not met, it could have negative consequences for humans’ physical and mental health (Alt, 2015).

Due to the rise of technology, we are no longer limited to only forming face-to-face groups in the offline world; we are now able to expand our group participation online as well. For example, applications like WhatsApp, Facebook, Twitter and Instagram make this possible (Kaplan & Haenlein, 2010). An online group, also called an “e-group,” can be defined as two or more individuals who mainly communicate through online interaction instead of face-to-face interaction. Conversely, an offline group can be described as two or more individuals who primarily communicate through face-to-face interaction (Jarvenpaa & Leidner, 1999). In this context, the personal need for information and the personal need to belong can be fulfilled by participating in both kinds of groups.

However, previous research suggests that there may be a downside to participating in e-groups. Some researchers argue that e-group participation, and the smartphone use that accompanies such participation, can cause the individual much stress (Swar & Hameed, 2017; Hunt, Marx, Lipson, &

Young, 2018). In this regard, the present research investigates where this stress comes from and whether all messages cause the same kind of stress or whether there are different kinds of stress? These questions will be further addressed in the present research.

### **Theoretical background**

#### *Social comparison theory*

In 1954, the social psychologist Leon Festinger introduced social comparison theory (Festinger, 1954). With this theory, he tried to explain why human beings care so much about the people around them and why group participation is so important to them. According to social comparison theory, the people around you, as well as your fellow group members, can provide you with different kinds of information. For instance, they can give you accurate and objective information about various subjects concerning the world. In other words, people around you are able to fulfil your personal need for information (Cialdini, 2009). Additionally, aside from accurate and objective information, people can also give you information about your self-concept and help you with self-evaluation. We, as individuals, are mainly searching for information which makes us feel good about ourselves – that is, information which gives us a positive sense of self, boosts our self-concept and makes us feel like we are okay and that we belong to a group. In other words, the individuals surrounding a person can fulfil his or her personal need to belong (Baumeister & Leary, 1995; Carvallo & Gabriel, 2006; Festinger, 1954; Buunk & Gibons, 2007).

All humans have a drive to form and maintain at least a few lasting, secure and significant interpersonal relationships. This gives us the sense that we have a meaningful existence (Bockarova, 2016). In this regard, one's personal need to belong does not only consist in the need for social contact; it is also the need for a positive and pleasant social interaction with individuals who are not strangers (Baumeister & Leary, 1995; Mellor, Stokes, Firth, Hayashi, & Cummins, 2008). It is important to note that not every individual has the same personal need to belong and that this need can differ over time. Individuals with a lower personal need to belong may be satisfied with only a few contacts and thus may place less importance on group membership. Conversely, individuals with a higher personal need to belong may seek more connections and put more emphasis on group membership to fulfil their needs (Eck, Schoel, & Greifeneder, 2017). When one's personal need to belong is not met, it may put the individual at risk for feelings of loneliness. Higher levels of loneliness may, in turn, enhance psychological distress and may decrease mental wellness, physical health and overall life satisfaction for such individuals (Mellor et al., 2008; Baumeister & Leary, 1995). When individuals are trying to fulfil their need to belong, it is important that they are not being ignored nor excluded by others, since this also puts them at risk for experiencing loneliness.

Being ignored and being excluded are the two main elements of ostracism. Ostracism can be an immediate threat to our four basic needs: the need to belong, the need for self-esteem, the need for control and the need for a meaningful existence (Eck et al., 2017; Williams & Nida, 2011; Nezlek, Wesselmann, Wheeler, & Willimans, 2015). When individuals are ostracized, have been ostracized in the past, or fear the possibility of being ostracized, they are more likely to pay attention to and remember social information. This heightened awareness is a coping mechanism to protect them against possible ostracism in the future. Since ostracism makes individuals physiologically and physically suffer, people will go to great lengths to keep up with social information to avoid being ostracized. This effort may, over time, also turn into a fear of missing out (FOMO), which is described below.

### *Fear of missing*

Fear of missing out is a form of social anxiety in which people fear that they will miss something important when they are absent from their group or e-group. They believe that their absence can, over time, be held against them and may cause ostracism (Przybylski, Murayama, DeHaan, & Gladwel, 2013). This mental state mainly arises from the fear that one's personal need to belong is not going to be met. As a consequence of missing out, individuals may feel left out, experience loneliness, and perhaps perceive themselves as being ostracized. When individuals experience FOMO, they feel compelled to check their smartphone often to keep up with all the incoming social information. By doing this, they hope to decrease the possibility of missing out on anything and thereby minimize the likelihood of feeling lonely and being ostracized. In addition, they hope to meet their personal need to belong (Alt, 2015; Fox & Moreland, 2015). High levels of FOMO can therefore be a strong predictor for smartphone addiction (Przybylski et al., 2013; Chotpitayasunondh & Douglas, 2016). The experience of FOMO can lead to some severe adverse health consequences, such as anxiety, depression, lack of sleep, alcohol abuse, negative general mood, lower life satisfaction and stress (Beyens, Frison, & Eggermont, 2016; Riordan, Flett, Hunter, Scarf, & Conner, 2015; Franchina, Vanden Abeele, Van Rooij, Lo Coco, & De Marez, 2018; Cheever, Rosen, Carrier, & Chavez, 2014; Aalbers, McNally, Heeren, Wit, & Fried, 2019).

As mentioned above, social comparison theory states that one's personal need for information and one's personal need to belong explain individual's group participation (Baumeister & Leary, 1995; Carvallo & Gabriel, 2006). Since FOMO arises out of the fear of not meeting one's personal need to belong, it is plausible that there is also a fear of not meeting one's personal need to receive accurate an objective information – that is, a 'fear of missing information' (FOMI; Alt, 2015). People's personal need to acquire more information arises when they feel like their current knowledge is not sufficient to deal with an issue, problem or question at hand – or when they believe others have important

accurate and objective information about the world (Weiler, 2004; Cialdini, 2009). People's personal need for information is fulfilled the moment they feel they have the right knowledge, gathered through their group or e-group participation, to deal with the issue, problem or question at hand, or it is fulfilled the moment they believe they have the right knowledge about the world around them. When their personal need for information is not met, they start to feel anxious and stressed (Kutlhau, 1991). In sum, FOMI may arise from the fear that one's personal need for accurate and objective information is not going to be met.

Besides FOMO and FOMI, there is also a more general fear to consider, the 'fear of missing' (FOM). People may experience FOM when they have no access to their smartphone – for example, because they forgot their smartphone, they are not allowed to have their smartphone or the battery of their smartphone is "dead". Fear of missing may jeopardize both students' personal need to belong as well as their personal need for information, since they no longer have access to their e-groups. This may in turn increase feelings of FOMO and FOMI.

In the context of this discussion, it is interesting to note that researchers have found that humans are likely to value their personal need to belong over their personal need for information (Baumeister & Leary, 1995; Bockarova, 2016; Mellor et al., 2008). One of these researchers was the psychologist Solomon Asch. In 1956, he conducted the renowned 'conformity experiment', in which a group of participants saw a line and had to find a corresponding line that matched the first line in length and thickness. All of the participants had to give a verbal public answer to the seemingly straightforward request to identify the correct line. However, only one member of the group was the real participant; all the other members were confederates in the experiment and were instructed to give the wrong answer. Most of the real participants conformed their answer to the groups' answers after the third round, knowing they gave the wrong answer. The participants who did not conform to the group's answer told the researcher afterwards that they felt a lot of pressure and stress by differing from the group. With this experiment, Asch showed that humans prefer being a respected member of a group (despite that group giving the wrong answer) than providing the correct answer and differing from the group (Asch, 1956). In other words, individuals generally prefer to fulfil their personal need to belong than to meet their personal need for accurate and objective information. In line with Solomon Asch's research, it is plausible that FOMO is experienced as more stressful than FOMI, since humans likely prefer to meet their personal need to belong over their personal need for information (Deci & Ryan, 1985). In addition, FOM would in that case be more strongly related to FOMO than to FOMI.

## *Stress*

Stress is the result of one's cognitive appraisal of a situation. It may, for instance, occur when an individual feels that he or she may not be able to accomplish the task at hand (Morrison & Bennet, 2016). So, when individuals experience FOMO, they feel stressed that they may miss out on social information or that they may not be able to keep up with all the incoming social information. As a consequence, they feel that their personal need to belong is not being met. Even worse, perhaps, they feel like they are at risk of being ostracized. The same patterns of stress hold true for FOMI; individuals may feel that they may miss out on accurate and objective information or that they may not be capable of keeping up with incoming information. As a consequence, they feel that their personal need for accurate and objective information is not being met (Beyens, Frison, & Eggermont, 2016; Kim, Conger, Elder, & Lorenz, 2011). In addition, the same patterns of stress also hold true for FOM; FOM occurs when individuals fear missing out on both social information as well as accurate and objective information. The stress that occurs from FOMO, FOMI and FOM is a result of an individual's own cognitive appraisal of a situation (Morrison & Bennet, 2016).

Stress causes a bodily reaction – namely, the increase of cortisol secretion. Initially, stress can be beneficial, since the rise of cortisol may increase heart rate, oxygen supply and availability of energy (Whitworth, Williamson, Mangos, & Kelly, 2005). As a result, stress can provide an extra boost, which may help people keep up with information for a short amount of time. However, when cortisol secretion is elevated for a prolonged time, it may cause bodily tissue damage. Over time this tissue damage creates a wide variety of physical and mental health problems. Some of these consequences may even be irreversible (Esterling, Kiecolt-Glaser, Bodnar, & Glaser, 1994). In the current research, no physiological measurements were made. Participants' level of stress was measured by a series of self-reporting questions, since we were interested in their subjective feelings of stress.

## *In short*

In summary, human beings want to be part of a group or e-group to fulfil their personal need for accurate and objective information and their personal need to belong. The biggest threat to our personal need to belong is the possibility of being ostracized. When we fear that we will not meet our personal need to belong, we may experience FOMO. Moreover, when we fear that we will not meet our personal need for accurate and objective information, we may experience FOMI. FOM may occur when one is not able, for one reason or another, to look at their smartphone. This jeopardizes our chance of meeting both our personal need to belong, as well as our personal need for accurate and objective information. The stress that occurs from FOMO, FOMI and FOM is a result of an individual's own cognitive appraisal of a situation. Since most humans prefer to meet their personal need to belong over their personal need for information, it is plausible to hypothesize that FOMO is experienced as

more stressful than FOMI. Meaning, FOM would in that case be more strongly related to FOMO than to FOMI.

## **Present research**

### *Research goal*

Students today experience much stress (Saleem, Mahmood, & Naz, 2013; Dusselier, Dunn, Wang, Shelley, & Whalen, 2010). According to some researchers, students perceive FOMO as a major factor causing them stress (Beyens, Frison, & Eggermont, 2016). A frequently used way to deal with this kind of stress is to reduce one's smartphone use (Rogers & Barber, 2019; Hunt, Marx, Lipson & Young, 2018; Schmidt, Muench, Schneier, Breitenbach, Carolus, 2018; Rosen, Carrier, Miller, Rokkum, & Ruiz, 2016; Aalbers, McNally, Heeren, Wit, & Fried, 2019). However, this solution may eventually cause more FOM, since restricting smartphone use inhibits people's ability to meet their personal need to belong as well as their personal need for accurate and objective information. Therefore, reducing one's smartphone usage in order to reduce feelings of FOMO and stress may be counterproductive and may induce FOMO, FOMI, and FOM. This research searches into the relation between FOMO, FOMI, and FOM.

### *Research questions*

Central in the present research are the following three research questions: (1) Are students who have a strong personal need for information more susceptible to FOMI? (2) Are students who have a strong personal need to belong more susceptible to FOMO? (3) Is the relationship between FOMO and FOM stronger than the relationship between FOMI and FOM?

### *Hypotheses*

The following seven hypotheses were tested in the present study: (H1) The stronger the personal need for information, the more one participates in e-groups to meet the personal need for information. (H2) The stronger the personal need to belong, the more one participates in e-groups to meet the personal need to belong. (H3) The more one participates in e-groups to meet the personal need for information, the more FOMI one experiences. (H4) The more one participates in e-groups to meet the personal need to belong, the more FOMO one experiences. (H5) The more FOMI a student experiences, the higher the amount of FOMI-related stress. (H6) The more FOMO a student experiences, the higher the amount of FOMO-related stress. (H7) The relation between FOMO-related stress and FOM stress is stronger than the relation between FOMI-related stress and FOM stress. Figure 1 shows how the constructs are linked to each other. In the present research, the above

hypotheses were tested on the basis of data collected with an online questionnaire regarding participants' self-reported experiences.

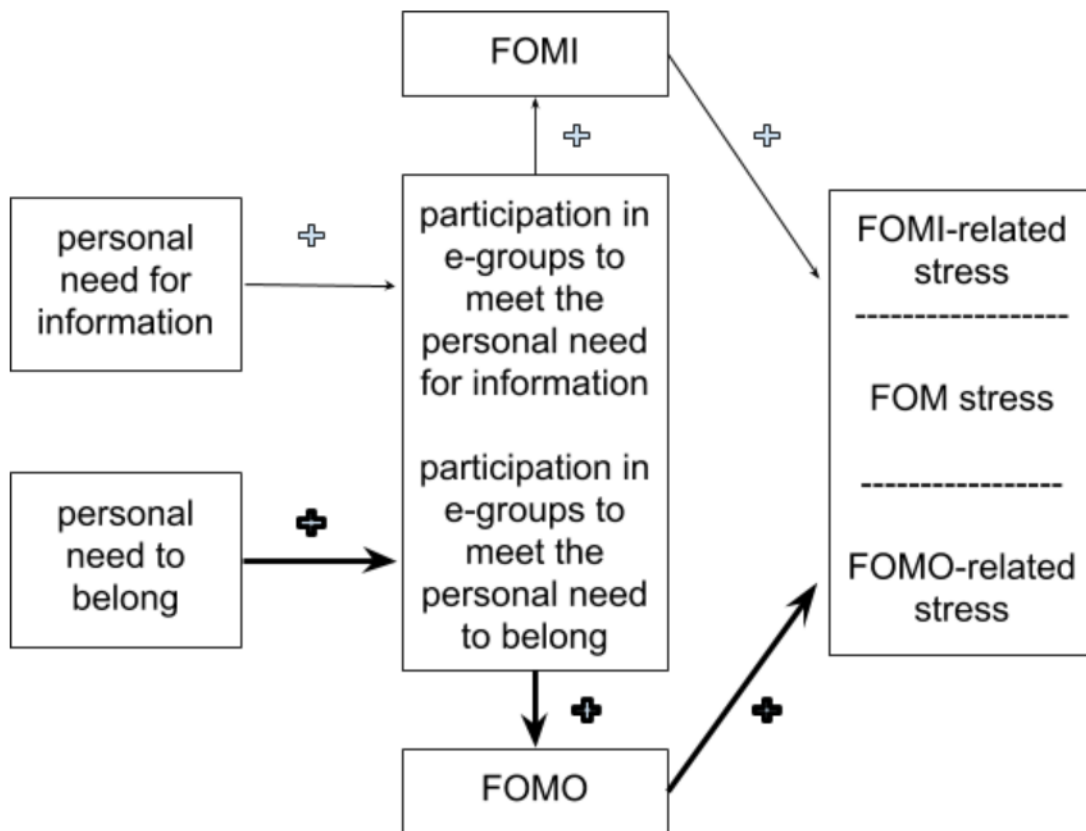


Figure 1. The hypotheses processed in a research model.

## Method

### Participants

In order to collect the data for the present research, at least 100 MBO, HBO and WO students were recruited. The questionnaire was designed for students between the ages of 16 and 35. Both full-time and part-time students were allowed to fill out the survey. If a participant did not complete the entire questionnaire, he or she was excluded from the analysis.

### Measurement instruments

For this study, an online questionnaire was used to collect the data. The questions were inspired by previously used surveys, which were freely online accessible. The questions of the survey used in this research, however, were adapted to meet the goals of the present research. Below are all the scales with some of the corresponding statements (items) which appeared in the questionnaire. For each individual an average score for every scale was calculated.

Personal need for information was measured through seven statements, such as the following: *Within my e-groups, I find it important that there is clear information about what we want to achieve* and *Within my e-groups, I find it important that the information that I share is being appreciated*. The possible answers ranged from 1 (*never*) to 5 (*always*).

Personal need to belong was measured through a combination of the 'need to belong scale' and the 'ostracism' questionnaire (Leary, Kelly, Cottrell, & Schreindorfer, 2012; Kipling, 2007). Items from both questionnaires were adapted to make them more suitable for the present research. This construct includes seven statements, for instance: *Within my e-groups, I find it important that I can rely on others in time of need*; *Within my e-groups, I find it important that others care about me*; and *Within my e-groups, I find it important that others accept me*. The possible answers ranged from 1 (*never*) to 5 (*always*).

Participating in e-groups to meet the personal need for information was measured through three statements like the following: *Within my e-groups, I value that we all have accurate information* and *Within my e-groups, I value information exchange*. The possible answers ranged from 1 (*never*) to 5 (*always*).

Participating in e-groups to meet the personal need to belong was measured through two statements like these: *Within my e-groups, I value social bonding* and *Within my e-groups, I value friendships*. The possible answers ranged from 1 (*never*) to 5 (*always*).

FOMI: The construct 'fear of missing information' was measured through five statements like these: *Within my e-groups, I find it important that I can get a clarification when I do not understand something* and *Within my e-groups, I find it important that I be informed about changes to the plans*. The possible answers ranged from 1 (*never*) to 5 (*always*).

FOMO: The construct 'fear of missing out' was measured through the FOMO scale (Przybylski et al., 2013). The questions of that scale were adapted to make them more suitable for the present research. This construct included five statements, like the following: *Within my e-groups, I find it important that I do not miss when others are having a difficult time*; *Within my e-groups, I find it important that I participate in social events organized by others*; and *Within my e-groups, I find it important that I understand the 'inside jokes'*. The possible answers ranged from 1 (*never*) to 5 (*always*).

FOMI-related stress: The construct 'stress related to the fear of missing information' was measured through a combination of the Social Media Stress questionnaire (Hop, 2012) and questions which were developed for the present research. The statements from Hop were adapted to make them more suitable for the present research. This construct included six questions like these: *I feel restless/stressed when I did not contribute enough to the information exchange in the e-group*; *I feel*

*restless/stress when the others in the e-group do not respond to the information I share with them.* The possible answers ranged from 1 (*never*) to 5 (*always*).

FOMO-related stress: The construct 'stress related to the fear of missing out' was measured through a combination of the Social Media Stress questionnaire (Hop, 2012) and questions which were developed for the present research. The statements from Hop were adapted to make them more suitable for the present research. This construct included six questions like these: *I feel restless/stressed when the others do not respond to my social proposal; I feel restless/stressed when I have the feeling I am being excluded.* The possible answers ranged from 1 (*never*) to 5 (*always*).

FOM stress: The construct 'stress related to the fear of missing' was measured through a combination of the Social Media Stress questionnaire (Hop, 2012) and questions which were developed for the present research. The statements from Hop were adapted to make them more suitable for the present research. This construct included six questions like these: *I feel restless/stressed when I do not have my smartphone at hand; I feel restless/stressed when I noticed a messages is coming in, but I am not able to look immediately.* The possible answers ranged from 1 (*never*) to 5 (*always*).

Additional questions were also included about the way individuals cope with stress and the positive aspects of their participation in e-groups. Although not used in the present statistical analyses, these questions were added to improve the flow of the survey and to end the questionnaire on a positive note. Appendix D contains the entire survey.

### *Procedure*

An advertisement with the details about the present research was placed on various social media sites, such as through WhatsApp, Facebook and email (Appendix A). Moreover, friends and peers of the researcher were encouraged to spread this message throughout their own social media networks. When students clicked on the link in the advertisement, a new window containing the information letter opened (Appendix B). This letter stated that this research was being conducted by students in the master's program in Psychology at Leiden University and that the research was investigating students' e-group participation. Furthermore, the information letter explained that this research consisted of an online survey and that completing the questionnaire would likely take approximately 15 minutes. Finally, it was indicated that at the end of the survey, participants could win one of ten *Bol.com* gift vouchers worth 15 euros each by submitting their email address and by completely filling out the questionnaire. The gift vouchers were offered in order to achieve a higher response rate.

When the online questionnaire was opened, the students had to read the information letter and could provide their informed consent – or otherwise exit the survey (Appendix C). The student first

had to give their informed consent before they could continue to the remaining part of the questionnaire. Obtaining informed consent ensured that the students knew what kind of research they were participating in and that they knew what would happen with the collected data. When the student had the option to leave their email address, it was stated that it was not possible to trace which questionnaire belonged to which participant. The survey was therefore completely anonymous. Gift vouchers were raffled among the participants who fully completed the questionnaire, and winners were notified via email. There also was a debriefing at the end of the questionnaire (Appendix E). If a student wanted to receive an overview of the results of the present research, there was also the option to leave their email address. It is not possible for a student to receive their individual test results.

### *Analyses*

Before doing the analyses, reliability check on the scales has been done to determine the reliability of the scales (Table 1). In order to answer the research questions, the hypotheses (listed above) were tested with multiple regression analyses to determine the strength of any possible relation between multiple constructs. Exploratory analyses were conducted on possible gender differences, since previous research has found that women are more at higher risk for experiencing FOMO than men (Agbaria, Ronen, & Hamama, 2012). Moreover, women tend to rely more on accurate, objective information than men. This makes them also more vulnerable to experiencing FOMI than men (Enochsson, 2005).

## **Results**

### *Participants*

A total of 103 potential participants opened the link, which led them to the questionnaire. The final dataset consisted of 94 students since eight students did not complete the whole questionnaire. For this reason, they were excluded from the dataset. Furthermore, one participant stated that he or she was not a student. For this reason, this participant was also excluded from the dataset as well. The remaining 94 students all gave their informed consent at the beginning of the questionnaire. 33 of these participants were male, and the other 61 participants were female. The students had an average age of 23.5 years. The youngest participant was 18 years old, whereas the oldest participant was 29 years old.

### Reliability

The reliability of the constructed scales was measured by determining Cronbach's Alpha. The Cronbach's Alpha, means, standard deviations and correlations of all the scales are shown in Table 1. The means and standard deviations of all the scales were very similar.

Table 1. Cronbach's Alpha, means, standard deviation, and correlations between all the scales

Var.	$\alpha$	M	SD	1	2	3	4	5	6	7	8
1	.76	3.78	.41								
2	.61	3.97	.51	.363**							
3	.76	3.68	.55	.694**	.368**						
4	.68	3.74	.44	.636**	.532**	.511**					
5	.62	3.73	.48	.436**	.379**	.039	.060				
6	.64	3.33	.56	.039	.327**	.326**	.267**	.315**			
7	.86	2.66	.79	.213*	.372**	.139	.291**	.270**	.199		
8	.79	2.83	.75	.075	.277**	.233*	.304**	.259*	.381**	.826**	
9	.79	2.13	.74	.120	.113	.127	.163	.219*	.101	.661**	.671**

1 = Personal need for information

2 = Personal need to belong

3 = Participating in e-groups to meet the personal need for information

4 = Participating in e-groups to meet the personal need to belong

5 = FOMI

6 = FOMO

7 = FOMI-related stress

8 = FOMO-related stress

9 = FOM stress

M = Mean

SD = Standard deviation

\* $p < .05$

\*\* $p < .01$

Which questions belong to which scale is specified in Appendix F. In the scale 'Participating in e-groups to meet the personal need for information' one item (item 3) was removed to improve the Cronbach's Alpha. The deleted item had a low correlation with the other two items in this scale, as can be seen in Table 2. By deleting this item, the Cronbach's Alpha went up from .69 to .76.

Table 2. Means, standard deviations, and correlations for the scale 'Participating in e-groups to meet the personal need for information'

Variable	M	SD	1	2
1. Information exchange	3.78	.867		
2. Having accurate information	3.52	.826	.611**	
3. Discussing study- and work-related issues	3.57	.849	.369**	.289**

M = Mean

SD = Standard deviation

\* $p < .05$

\*\* $p < .01$

### *Gender differences*

A One-way ANOVA, with gender as the independent variable and all scales as the dependent variables, showed a non-significant overall effect of gender ( $F(2, 91) = 1.064$   $p = .305$ ) and only a significant gender difference on the scale 'participating in e-groups to meet the personal need to belong'. Since only one of the nine scales showed a significant effect, this may be due to multiple comparisons. See Table 3 for the means and standard deviations of all the scales for males and females.

### *The relation between the personal need for information and one's participation in e-groups to meet the personal need for information (Hypothesis 1).*

A multiple regression analysis was conducted in order to test this hypothesis: 'The stronger the personal need for information, the more one participates in e-groups to meet the personal need for information'. In this analysis, one's personal need for information was used as the independent variable, and one's participation in e-groups to meet the personal need for information was used as the dependent variable. Moreover, one's personal need to belong was added as an independent variable for a better validation of the relation between one's personal need for information and one's participation in e-groups to meet the personal need for information. In addition, a check for possible gender differences was made. The results of the multiple regression analysis are presented in Table 4.

The personal need for information and the personal need to belong together explained 49.7% of one's participation in e-groups to meet the personal need for information; a significant regression equation was found ( $F(2, 91) = 44.946$ ,  $p < .001$ ). Only one's personal need for information had a significant effect on the regression equation ( $\beta = .645$ ,  $p < .001$ ). One's personal need to belong did not have a significant effect on the regression equation ( $\beta = .134$ ,  $p = .098$ ).

Table 3. Means and standard deviation of all the scales with regard to possible gender differences

Scale		Male	Female
Personal need for information	M	3.79	3.78
	SD	.40	.41
Personal need to belong	M	3.89	4.01
	SD	.52	.50
Participating in e-groups to meet the personal need for information	M	3.71	3.66
	SD	.57	.55
Participating in e-groups to meet the personal need to belong*	M	3.81	3.70
	SD	.51	.40
FOMI	M	3.72	3.73
	SD	.54	.46
FOMO	M	3.16	3.42
	SD	.55	.54
FOMI-related stress	M	2.54	2.73
	SD	.81	.78
FOMO-related stress	M	2.72	2.89
	SD	.81	.72
FOM stress	M	2.03	2.19
	SD	.75	.74

M = Mean

SD = Standard deviation

\* $p < .05$

The same analysis was done again with only the male population. The personal need for information and the personal need to belong together explained 51.7% of one's participation in e-groups to meet the personal need for information; a significant regression equation was found ( $F(2, 30) = 16.046, p < .001$ ). Only one's personal need for information had a significant effect on the regression equation ( $\beta = .691, p < .001$ ). One's personal need to belong did not have a significant effect on the regression equation ( $\beta = .066, p = .637$ ).

The same analysis was done once again with only the female population. The personal need for information and the personal need to belong together explained 49.5% of one's participation in e-groups to meet the personal need for information; a significant regression equation was found ( $F(2,$

58) = 28.398,  $p < .001$ ). Only one's personal need for information had a significant effect on the regression equation ( $\beta = .619, p < .001$ ). One's personal need to belong did not have a significant effect on the regression equation ( $\beta = .180, p = .076$ ).

Table 4. Multiple regression analysis for predicting one's participation in e-groups to meet the personal need for information

Dependent variable = one's participation in e-groups to meet the personal need for information							
Variable	<i>b</i>	<i>B</i>	<i>SE</i>	<i>t</i>	<i>P</i>	<i>R</i> <sup>2</sup>	<i>F</i>
Both genders						.497	44.946**
Information	.876	.645	.108	8.09**	.001**		
Belonging	.145	.134	.087	1.67	.098		
Male						.517	16.046**
Information	.988	.691	.197	5.023**	.001**		
Belonging	.072	.066	.151	.477	.637		
Female						.495	28.398**
Information	.816	.619	.132	6.20**	.001**		
Belonging	.196	.180	.109	1.80	.076		

$n = 94$

Information = the personal need for information

Belonging = the personal need to belong

\* $p < .05$

\*\* $p < .01$

Students who had a high personal need for information also have a high participation in e-groups to meet their personal need for information. This finding was in line with Hypothesis 1. Students who had a high personal need to belong do not seem to have a high participation in e-groups to meet their personal need for information.

*The relation between the personal need to belong and one's participation in e-groups to meet the personal need to belong (Hypothesis 2).*

Next, another multiple regression analysis was conducted in order to test this hypothesis: 'The stronger the personal need to belong, the more one participates in e-groups to meet the personal need to belong'. In this analysis, one's personal need to belong was used as the independent variable, and one's participation in e-groups to meet the personal need to belong was used as the dependent variable. Moreover, one's personal need for information was added as an independent variable as a double-check for better validation. In addition, a check for possible gender differences was done. The results of the multiple regression analysis are presented in Table 5.

The personal need to belong and the personal need for information together explained 50.9% of one's participation in e-groups to meet the personal need to belong; a significant regression equation was found ( $F(2, 91) = 47.189, p < .001$ ). One's personal need to belong had a significant effect on the regression equation ( $\beta = .347, p < .001$ ), as well as one's personal need for information ( $\beta = .510, p < .001$ ).

The same analysis was conducted again with only the male population. The personal need to belong and the personal need for information together explained 73.0% of one's participation in e-groups to meet the personal need to belong; a significant regression equation was found ( $F(2, 30) = 40.520, p < .001$ ). One's personal need to belong had a significant effect on the regression equation ( $\beta = .392, p = .001$ ), as well as – and even stronger – one's personal need for information ( $\beta = .623, p < .001$ ).

The same analysis was done once again with only the female population. The personal need to belong and the personal need for information together explained 41.7% of one's participation in e-groups to meet the personal need to belong; a significant regression equation was found ( $F(2, 58) = 20.701, p < .001$ ). One's personal need to belong had a significant effect on the regression equation ( $\beta = .343, p = .002$ ), as well as one's personal need for information ( $\beta = .438, p < .001$ ).

Students who had a high personal need to belong also have a high participation in e-groups to meet their personal need to belong. This finding was in line with Hypothesis 2. Besides, students who had a high personal need for information also seem to have a high participation in e-groups to meet their personal need to belong. This is a remarkable finding since one would expect that participation in e-groups to meet one's personal need to belong would be stronger related to one's personal need to belong than to one's personal need for information. Thus, the present data suggest that participation in e-groups to meet one's need to belong is somewhat weaker related to one's personal need to belong than to one's personal need for information.

Table 5. Multiple regression analysis for predicting one's participation in e-groups to meet the personal need to belong

Dependent variable = one's participation in e-groups to meet the personal need to belong							
Variable	<i>b</i>	<i>B</i>	<i>SE</i>	T	<i>P</i>	<i>R</i> <sup>2</sup>	<i>F</i>
Both genders						.509	47.189**
Belonging	.301	.347	.068	4.403**	.001**		
Information	.552	.510	.085	6.473**	.001**		
Male						.730	40.520**
Belonging	.380	.392	.100	3.811**	.001**		
Information	.787	.623	.130	6.052**	.001**		
Female						.417	20.701**
Belonging	.274	.343	.086	3.195**	.002**		
Information	.423	.438	.104	4.086**	.001**		

*n* = 94

Belonging = the personal need to belong

Information = the personal need for information

\**p* < .05

\*\**p* < .01

*The relation between one's participation in e-groups to meet the personal need for information and FOMI (Hypothesis 3).*

Another multiple regression analysis was then conducted in order to test the next hypothesis: 'The more one participates in e-groups to meet the personal need for information, the more FOMI one experiences'. In this analysis, one's participation in e-groups to meet the personal need for information was used as the independent variable, and FOMI was used as the dependent variable. Moreover, one's participation in e-groups to meet the personal need to belong was added as an independent variable as a double-check for better validation. In addition, a check for possible gender differences was conducted. The results of the multiple regression analysis are presented in Table 6.

One's participation in e-groups to meet the personal need for information and one's participation in e-groups to meet the personal need to belong together explained 12.0% of FOMI; a significant regression equation was found ( $F(2, 91) = 6.219, p < .001$ ). Only one's participation in e-

groups to meet the personal need for information had a significant effect on the regression equation ( $\beta = .257, p = .027$ ). One's participation in e-groups to meet the personal need to belong did not have a significant effect on the regression equation ( $\beta = .136, p = .267$ ).

The same analysis was done again with only the male population. One's participation in e-groups to meet the personal need for information and one's participation in e-groups to meet the personal need to belong together explained 20.4% of FOMI; a significant regression equation was found ( $F(2, 30) = 3.843, p = .033$ ). One's participation in e-groups to meet the personal need for information had no significant effect on the regression equation ( $\beta = .239, p = .272$ ), nor did one's participation in e-groups to meet the personal need to belong ( $\beta = .259, p = .234$ ).

The same analysis was done once again with only the female population. One's participation in e-groups to meet the personal need for information and one's participation in e-groups to meet the personal need to belong together explained 7.9% of FOMI; no significant regression equation was found ( $F(2, 58) = 2.487, p = .092$ ). One's participation in e-groups to meet the personal need for information had no significant effect on the regression equation ( $\beta = .255, p = .071$ ), nor did one's participation in e-groups to meet the personal need to belong ( $\beta = .053, p = .702$ ).

Table 6. Multiple regression analysis for predicting FOMI

Variable	Dependent variable = FOMI						<i>R</i> <sup>2</sup>	<i>F</i>
	<i>B</i>	<i>B</i>	<i>SE</i>	<i>T</i>	<i>P</i>			
Both genders						.120	6.219**	
Information	.225	.257	.100	2.245*	.027*			
Belonging	.150	.136	.126	1.191	.267			
Male						.204	3.843*	
Information	.223	.239	.200	1.118	.272			
Belonging	.274	.259	.226	1.214	.234			
Female						.079	2.487	
Information	.214	.255	.117	1.836	.071			
Belonging	.061	.053	.159	.385	.702			

*n* = 94

Information = one's participation in e-groups to meet the personal need for information

Belonging = one's participation in e-groups to meet the personal need to belong

\* $p < .05$

\*\* $p < .01$

Students who participate in e-groups to meet their personal need for information also have a higher chance of experiencing FOMI. This finding was in line with Hypothesis 3. In addition, students who participate in e-groups to meet their personal need to belong did not have a higher chance of experiencing FOMI.

*The relation between one's participation in e-groups to meet the personal need to belong and FOMO (Hypothesis 4).*

Thereafter, another multiple regression analysis was used to test the next hypothesis: 'The more one participates in e-groups to meet the personal need to belong, the more FOMO one experiences'. In this analysis, one's participation in e-groups to meet the personal need to belong was used as the independent variable, and FOMO was used as the dependent variable. One's participation in e-groups to meet the personal need for information was also added as an independent variable as a double-check for better validation. In addition, a check for possible gender differences was conducted. The results of the multiple regression analysis are presented in Table 7.

One's participation in e-groups to meet the personal need to belong and one's participation in e-groups to meet the personal need for information together explained 0.4% of FOMO; no significant regression equation was found ( $F(2, 91) = .171, p = .843$ ). One's participation in e-groups to meet the personal need to belong did not have a significant effect on the regression equation ( $\beta = .054, p = .657$ ), nor did one's participation in e-groups to meet the personal need for information ( $\beta = .012, p = .923$ ).

The same analysis has been done again with only the male population. One's participation in e-groups to meet the personal need to belong and one's participation in e-groups to meet the personal need for information together explained 0.1% of FOMO; no significant regression equation was found ( $F(2, 30) = .014, p = .986$ ). One's participation in e-groups to meet the personal need to belong did not have a significant effect on the regression equation ( $\beta = -.039, p = .871$ ), nor did one's participation in e-groups to meet the personal need for information ( $\beta = .021, p = .931$ ).

The same analysis was done once again with only the female population. One's participation in e-groups to meet the personal need to belong and one's participation in e-groups to meet the personal need for information together explained 2.8% of FOMO; no significant regression equation was found ( $F(2, 58) = .831, p = .441$ ). One's participation in e-groups to meet the personal need to belong did not have a significant effect on the regression equation ( $\beta = .161, p = .264$ ), nor did one's participation in e-groups to meet the personal need for information ( $\beta = .014, p = .922$ ).

Table 7. Multiple regression analysis for predicting FOMO.

Variable	Dependent variable = FOMO						<i>R</i> <sup>2</sup>	<i>F</i>
	<i>B</i>	<i>B</i>	<i>SE</i>	<i>t</i>	<i>P</i>			
Both genders							.004	.171
Belonging	.069	.054	.154	.446	.657			
Information	.012	.012	.122	.097	.923			
Male							.001	.014
Belonging	-.043	-.039	.261	-.163	.871			
Information	.020	.021	.231	.087	.931			
Female							.028	.831
Belonging	.218	.161	.193	1.127	.264			
Information	.014	.014	.141	.099	.922			

*n* = 94

Belonging = one's participation in e-groups to meet the personal need to belong

Information = one's participation in e-groups to meet the personal need for information

\**p* < .05

\*\**p* < .01

Students who participate in e-groups to meet their personal need to belong did not have a higher chance of experiencing FOMO. This finding is not in line with Hypothesis 4. These data suggest that FOMO cannot be predicted based upon one's participation in e-groups to meet the personal need to belong. FOMO can also not be predicted from one's participation in e-groups to meet the personal need for information.

However, another multiple regression analysis was used to test whether one's personal need to belong is able to predict FOMO. In this analysis, one's personal need to belong was used as the independent variable, and FOMO was used as the dependent variable. One's personal need for information was also added as an independent variable as a double-check for better validation. One's personal need to belong and one's personal need for information together explained 15.5% of FOMO; a significant regression equation was found ( $F(2, 91) = 8.359, p < .001$ ). One's personal need to belong did have a significant effect on the regression equation ( $\beta = .421, p < .001$ ), one's personal need for information did not ( $\beta = -.114, p = .274$ ). Student who have a high personal need to belong have a

higher chance of experiencing FOMO. Meaning, that FOMO may not be predicted by ones participation in e-groups to meet the personal need to belong, but FOMO can be predicted by one's personal need to belong.

*The relation between FOMI and FOMI-related stress (Hypothesis 5).*

Next, another multiple regression analysis was conducted in order to test the following hypothesis: 'The more FOMI a student experiences, the higher the amount of FOMI-related stress'. In this analysis, FOMI was used as the independent variable, and FOMI-related stress was used as the dependent variable. Moreover, FOMO was added as an independent variable as a double-check for better validation. In addition, a check for possible gender differences was conducted. The results of the multiple regression analysis are presented in Table 8.

FOMI and FOMO together explained 16.6% of the FOMI-related stress; a significant regression equation was found ( $F(2, 91) = 9.089, p < .001$ ). Only FOMI had a significant effect on the regression equation ( $\beta = .332, p < .001$ ); FOMO did not ( $\beta = .154, p = .130$ ).

The same analysis was done again with only the male population. FOMI and FOMO together explained 26.4% of the FOMI-related stress; a significant regression equation was found ( $F(2, 30) = 5.369, p = .010$ ). Only FOMI had a significant effect on the regression equation ( $\beta = .447, p = .011$ ), FOMO did not ( $\beta = .146, p = .385$ ).

The same analysis was done once again with only the female population. FOMI and FOMO together explained 11.0% of the FOMI-related stress; a significant regression equation was found ( $F(2, 58) = 3.574, p = .034$ ). Only FOMI had a significant effect on the regression equation ( $\beta = .267, p = .045$ ), FOMO did not ( $\beta = .187, p = .331$ ).

Students who experienced FOMI, not FOMO, have a higher chance of experiencing FOMI-related stress. This finding is in line with Hypothesis 5.

*The relation between FOMO and FOMO-related stress (Hypothesis 6).*

Another multiple regression analysis was then conducted to test the next hypothesis: 'The more FOMO a student experiences, the higher the amount of FOMO-related stress'. In this analysis FOMO was used as the independent variable and FOMO-related stress was used as the dependent variable. Moreover, FOMI was added as an independent variable as a double-check for better validation. In addition, a check for possible gender differences was done. The results of the multiple regression analysis are presented in Table 9.

Table 8. Multiple regression analysis for testing the relation between FOMI and FOMI-related stress

Variable	Dependent variable = FOMI-related stress						<i>R</i> <sup>2</sup>	<i>F</i>
	<i>B</i>	<i>B</i>	<i>SE</i>	<i>T</i>	<i>P</i>			
Both genders							.166	9.089**
FOMI	.542	.332	.164	3.294**	.001**			
FOMO	.219	.154	.143	1.529	.130			
Male							.264	5.369**
FOMI	.678	.447	.251	2.704*	.011*			
FOMO	.214	.146	.243	.882	.385			
Female							.110	3.574*
FOMI	.452	.267	.221	2.046*	.045*			
FOMO	.183	.128	.187	.980	.331			

*n* = 94

\**p* < .05

\*\**p* < .01

The same analysis was done again with only the male population. FOMO and FOMI together explained 12.1% of the FOMO-related stress. No significant regression equation was found ( $F(2, 30) = 2.073, p = .144$ ). FOMO did not have a significant effect on the regression equation ( $\beta = .066, p = .170$ ), nor did FOMI ( $\beta = .321, p = .343$ ).

The same analysis was done once again with only the female population. FOMO and FOMI together explained 9.4% of the FOMO-related stress; no significant regression equation was found ( $F(2, 58) = 3.019, p = .057$ ). Only FOMO had a significant effect on the regression equation ( $\beta = .307, p = .023$ ), and FOMI did not ( $\beta = -.001, p = .994$ ).

Students who experienced FOMO have a higher chance of experiencing FOMO-related stress. This finding was in line with Hypothesis 6. In addition, students who experienced FOMI do not have a higher chance of experiencing FOMO-related stress.

Table 9. Multiple regression analysis for testing the relation between FOMO and FOMO-related stress

Dependent variable = FOMO-related stress							
Variable	<i>B</i>	<i>B</i>	<i>SE</i>	<i>t</i>	<i>P</i>	<i>R</i> <sup>2</sup>	<i>F</i>
Both genders						.087	4.351*
FOMO	.310	.230	.142	2.177*	.032*		
FOMI	.196	.127	.163	1.201	.233		
Male						.121	2.073
FOMO	.097	.066	.264	.368	.170		
FOMI	.484	.321	.273	1.777	.343		
Female						.094	3.019
FOMO	.406	.307	.174	2.332*	.023*		
FOMI	-.002	-.001	.206	-.007	.994		

*n* = 94

\**p* < .05

\*\**p* < .01

*The relation between FOMO-related stress, FOMI-related stress and FOM stress (Hypothesis 7).*

Thereafter, a final multiple regression analysis was conducted in order to test the last hypothesis: ‘The relation between FOMO-related stress and FOM stress is stronger than the relation between FOMI-related stress and FOM stress’. In this analysis, FOMO-related stress and FOMI-related stress were used as the independent variables, and FOM stress was used as the dependent variable. In addition, a check for possible gender differences was conducted. The results of the multiple regression analysis are presented in Table 10.

FOMO-related stress and FOMI-related stress together explained 48.6% of the FOM stress; a significant regression equation was found ( $F(2, 91) = 43.013, p < .001$ ). FOMO-related stress had a significant effect on the equation ( $\beta = .335, p = .004$ ), as well as FOMI-related stress ( $\beta = .395, p = .014$ ).

The same analysis was done again with only the male population. FOMO-related stress and FOMI-related stress together explained 60.1% of the FOM stress; a significant regression equation was found ( $F(2, 30) = 22.593, p < .001$ ). In males, only FOMO-related stress had a significant effect on the equation ( $\beta = .829, p = .003$ ), FOMI-related stress did not ( $\beta = -.061, p = .811$ ).

The same analysis was done once again with only the female population. FOMO-related stress and FOMI-related stress together explained 45.0% of the FOM-related stress; a significant regression equation was found ( $F(2, 58) = 23.761, p < .001$ ). In females, only FOMI-related stress had a significant effect on the equation ( $\beta = .522, p < .001$ ), FOMO-related stress did not ( $\beta = .179, p = .255$ )

Table 10. Multiple regression analysis for predicting FOM stress

Variable	Dependent variable = FOM stress						
	<i>B</i>	<i>B</i>	<i>SE</i>	<i>T</i>	<i>P</i>	<i>R</i> <sup>2</sup>	<i>F</i>
Both genders						.486	43.013**
FOMO	.332	.335	.132	2.965**	.004**		
FOMI	.372	.395	.125	2.512*	.014*		
Male						.601	22.593**
FOMO	.767	.829	.235	3.369**	.003**		
FOMI	-.056	-.061	.234	-.242	.811		
Female						.450	23.761**
FOMO	.186	.179	.162	1.148	.255		
FOMI	.499	.522	.149	3.341**	.001**		

$n = 94$

FOMO = FOMO-related stress

FOMI = FOMI-related stress

\* $p < .05$

\*\* $p < .01$

Students who experienced more FOMI-related stress have a higher chance of experiencing FOM stress. Students who experienced FOMO-related stress have a somewhat higher chance of experiencing FOM stress. This means a student's general fear of missing is related to both their fear of missing out socially as well as to their fear of missing information.

## Discussion

### *General*

The present research used a variety of measurements to investigate the relation between FOMI and stress, as well as the relation between FOMO and stress. It was hypothesized that students who had a high personal need for information would experience more FOMI, and eventually experience FOMI-related stress. It was also hypothesized that students who have a high personal need to belong would experience more FOMO, and eventually experience more FOMO-related stress. Finally, on the basis of social comparison theory (Festinger, 1954) it was hypothesized that FOMO-related stress would be stronger related to FOM than FOMI-related stress.

### *Participation in e-groups to meet one's personal needs*

The findings of this research show that there is a relation between a high personal need for information and student's participation in e-groups to meet their personal need for information. This finding was in line with Hypothesis 1 – namely, 'The stronger the personal need for information, the more one participates in e-groups to meet the personal need for information'. The hypothesis is thus confirmed. In addition, there are no signs of a relation between students who had a high personal need to belong and their participation in e-groups to meet the personal need for information.

Moreover, the findings of this research show that there is a relation between a high personal need to belong and student's participation in e-groups to meet the personal need to belong. This finding was in line with Hypothesis 2 – namely, 'The stronger the personal need to belong, the more one participates in e-groups to meet the personal need to belong'. The hypothesis is thus confirmed.

Remarkably, the findings of the present research show that there also seems to be a relation between students who had a high personal need for information and their e-group participation to meet the personal need to belong. This means that student's participation in e-groups to meet the personal need to belong also satisfied student's participation in e-groups to meet the personal need for information.

### *Fear of missing information (FOMI) and fear of missing out (FOMO)*

Furthermore, the data show that there is a relation between student's participation in e-groups to meet their personal need for information and experiencing FOMI. This finding was in line with Hypothesis 3 – namely, 'The more one participates in e-groups to meet the personal need for information, the more FOMI one experiences'. The hypothesis is thus confirmed. There does not seem to be a relation between students who participate in e-groups to meet their personal need to belong and experiencing FOMI.

However, the data did not show a relation between student's participation in e-groups to meet their personal need to belong and experiencing FOMO. This finding was not in line with Hypothesis 4 – namely, 'The more one participates in e-groups to meet the personal need to belong, the more FOMO one experiences'. The hypothesis is thus rejected. This is an odd finding since one would expect that students who use their e-group participation to obtain social information in order to fulfil their personal need to belong, do not want to miss any of this social information. In addition, the data did show that there is a relation between one's personal need to belong and FOMO. Although FOMO cannot be predicted by student's participation in e-groups to meet the personal need to belong, it can be predicted by one's personal need to belong.

#### *FOMI-related stress and FOMO-related stress*

The data of this research show that there is a relation between experiencing FOMI and experiencing FOMI-related stress. This finding was in line with Hypothesis 5– namely, 'The more FOMI a student experiences, the higher the amount of FOMI-related stress'. The hypothesis is thus confirmed. This finding may be explained when one considers the fact that students who experience FOMI, fear not meeting their personal need for information, which eventually may be related to stress, i.e. FOMI-related stress (Beyens, Frison, & Eggermont, 2016; Kim, Conger, Elder, & Lorenz, 2011).

Furthermore, the data show that there is a relation between experiencing FOMO and experiencing FOMO-related stress. This finding was in line with Hypothesis 6 – namely, 'The more FOMO a student experiences, the higher the amount of FOMO-related stress'. The hypothesis is thus confirmed. This finding may be explained when one considers the fact that students who experience FOMO, fear not meeting their personal need to belong, which eventually causes them stress, i.e. FOMI-related stress (Alt, 2015).

#### *Stress related to the Fear of Missing (FOM)*

Lastly, the data suggest that there is a relation between experiencing FOMO-related stress and FOM stress, as well as a relation between experiencing FOMI-related stress and FOM stress. However, the relation between experiencing FOMO-related stress and FOM stress seems equally strong or slightly stronger than the relation between experiencing FOMI-related stress and FOM stress. This finding is in line with Hypothesis 7, namely, 'The relation between FOMO-related stress and FOM stress is stronger than the relation between FOMI-related stress and FOM stress'. The hypothesis is thus confirmed. This finding may be explained in light of social comparison theory, since human beings join groups and e-groups both to fulfil their personal need to belong as well as their personal need for information (Festinger, 1954). Both these needs are being jeopardized when one has to, for example, put their phone down. So, when a student experiences FOMO-related stress, in other words fear not

meeting the personal need to belong, they experience FOM stress, since it jeopardizes meeting the personal need for information. In addition, when a student experiences FOMI-related stress, in other words; fear not meeting the personal need for information, they experience FOM stress, since it jeopardizes the personal need to belong.

#### *Strengths, limitations, and further research*

The present study has a number of strengths. For example, no research has yet been done into the subject of FOMI, FOMI-related stress and FOM stress, and how these constructs relate to one another. In addition, a validation analysis has been conducted. Furthermore, no research has yet been done into the relation between FOMO-related stress and FOMI-related stress, and FOMO-related stress and FOM stress.

The present study also has some limitations. For example, this study has a cross-sectional research design. As a result, no cause-effect relationships can be drawn. In addition, the present study used a convenience sample: students could decide for themselves whether or not they want to fill out the questionnaire. The risk of this approach is that only a specific kind of group filled in the questionnaire. Maybe only the group of students who spend a lot of time on their smartphone filled out the questionnaire, since they are the ones who saw the add. When the data set only consists of these types of students, who are often on their phone, the present finding that students who participate in e-groups to meet their personal need for information seem to have a higher chance of experiencing FOMI, may not be representative for the overall student population. In addition, the distribution of males and females in the present sample was skewed, which made it difficult to conclude anything firmly about any gender differences. Lastly, the current research only conducted direct analyses. However, to get better insight into the model, a more advanced analysis must be done which also shows the underlying relations (for example, a structural equation model). When a more advanced analysis is done a total-analysis of the 'goodness of fit' of all the possible pathways between the constructs of the model can be done. However, doing such advanced analyses was outside the scope of this research.

Further research must be done to further explore how FOMI, FOMI-related stress, FOM and FOM stress are related, also with regard to possible gender differences, in order to eventually create a proper working intervention. A longitudinal study must be done into cause-effect relationships.

## **Conclusion**

Possible stressors for students are FOMO-related stress, FOMI-related stress, and FOM stress. The present study suggests that students who have a strong personal need for information are more susceptible to FOMI. Besides, students who have a strong personal need to belong are more susceptible to FOMO. In addition, students who experience FOMO-related stress, as well as students who experience FOMI-related stress experience FOM stress. This finding shows that both experiencing FOMO-related stress, as well as experiencing FOMI-related stress is stressful, but experiencing FOMO-related stress is slightly more stressful. These finding may imply that putting away your smartphone in order to deal with smartphone stress is not effective since it enhances FOMO-related stress, FOMI-related stress, and FOM stress.

## Reference list

- Aalbers, G., McNally, R. J., Heeren, A., Wit, S. de, & Fried, E. I. (2019). Social media and depression symptoms: A network perspective. *Journal of Experimental Psychology: General*, 148(8), 1454-1462.
- Agbaria, Q, Ronen, T, & Hamama, L. (2012). The link between developmental components (age and gender), need to belong and resources of self-control and feelings of happiness, and frequency of symptoms among Arab adolescents in Israel. *Children and Youth Services Review*, 34(10), 2018-2027.
- Alt, D. (2015). College students' academic motivation, media engagement and fear of missing out. *Computer in Human Behavior*, 49, 111-119.
- Asch, S. E. (1956). Studies of independence and conformity: A minority against a unanimous majority. *Psychological Monographs*, 70(9), 1-70.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117, 497-529.
- Beyens, I., Frison, E., & Eggermont, S. (2016). "I don't want to miss a thing": Adolescents' fear of missing out and its relationship to adolescents' social need, Facebook use, and Facebook related stress. *Computer in Human Behavior*, 64, 1-8.
- Bockarova, M. (2016). Does one truly need to belong?: A case for the need to meaningfully exist. *Semiotica*, 210, 251-257.
- Buunk, A. P., & Gibbons, F. X. (2007). Social comparison: The end of a theory and the emerge of a field. *Organizational Behavior and Human Decision Processes*, 102, 3-21.
- Carvallo, M., & Gabriel, S. (2006). No man is an island: The need to belong and dismissing avoidant attachment style. *Personality and Social Psychology Bulletin*, 32(5), 697-709.
- Cheever, N. A., Rosen, L. D., Carrier, L. M., & Chavez, A. (2014). Out of sight is not out of mind: The impact of restricting wireless mobile device use on anxiety levels among low, moderate and high users. *Computers in Human Behavior*, 37, 290-297.
- Chotpitayasunondh, V., & Douglas, K. M. (2016). How "phubbing" becomes the norm: The antecedents and consequences of snubbing via smartphone. *Computers in Human Behavior*, 63, 9-18.
- Cialdini, R. B. (2009). *Influence: Science and practice*. Boston: Allyn and Bacon.
- Deci, E., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Press.
- Dusselier, L., Dunn, B., Wang, Y., Shelley, M. C., & Whalen, D. F. (2010). Personal, health, academic, and environmental predictors of stress for residence hall students. *Journal of American*

- College Health*, 54(1), 15-24.
- Eck, J., Schoel, C., & Greifeneder, R. (2017). Belonging to a majority reduces the immediate need threat from ostracism in individuals with a high need to belong. *European Journal of Social Psychology*, 47, 273-288.
- Enochsson, A. B. (2005). A gender perspective on internet use: Consequences for information seeking. *Information Research*, 10(4).
- Esterling, B. A., Kiecolt-Glaser, J. K., Bodnar, J. C., & Glaser, R. (1994). Chronic stress, social support, and persistent alterations in the natural killer cell response to cytokines in older adults. *Health Psychology*, 13(4), 291-298.
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, 1, 117-140.
- Fox, J., & Moreland, J. J. (2015). The dark side of social networking sites: an exploration of the relational and psychological stressors associated with Facebook use and affordances. *Computers in Human Behavior*, 45, 168-176.
- Franchina, V., Vanden Abeele, M., van Rooij, A., Lo Coco, G., & De Marez, L. (2018). Fear of missing out as a predictor of problematic social media use and phubbing behavior among Flemish adolescents. *International journal of environmental research and public health*, 15(10), 2319.
- Hop, L., & Delver, B. (2012). Jongeren lijden aan Sociale Media Stress (SMS) Jongeren in de greep van sociale media. Nationale Academie voor Media & Maatschappij, 1-21.
- Hunt, M. G., Marx, R., Lipson, C., & Young, J. (2018). No more FOMO: Limiting social media decreases loneliness and depression. *Journal of Social and Clinical Psychology*, 37(10), 751-768.
- Jarvenpaa, S. L., & Leidner, D. E. (1999). Communication and trust in global virtual teams. *Organization Science*, 10(6), 791-815.
- Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of social media. *Business Horizons*, 53(1), 59-68.
- Kim, K. J., Conger, R. D., Elder, G. H., & Lorenz, F. O. (2011). Reciprocal influences between stressful life events and adolescent internalizing and externalizing problems. *Child Development*, 74, 127-143.
- Kipling, D. W. (2007). Ostracism. *Annual Review of Psychology*, 58, 425-452.
- Kuhlthau, C. C. (1991). Inside the search process: Information seeking from the user's perspective. *Journal of the Association for Information Science and Technology*, 42(5), 361-371.
- Leary, M. R., Kelly, K. M., Cottrell, C. A., & Schreindorfer, L. S. (2012). Individual differences in the need to belong: Mapping the nomological network. Unpublished manuscript, Duke University.
- Mellor, D., Stokes, M., Firth, L., Hayashi, Y., & Cummins, R., (2008). Need for belonging, relationship

- satisfaction, loneliness and life satisfaction. *Personality and Individual Differences*, 45, 213-218.
- Morrison V. & Bennet P. (2016). *An Introduction to Health Psychology*. Pearson education, Prentice Hall, Harlow.
- Nezlek, J. B., Wesselmann, E. D., Wheeler, L., & Willimans, K. D. (2015). Ostracism in everyday life: The effects of ostracism on those who ostracize. *The Journal of Social Psychology*, 155, 432-451.
- Przybylski, A. K., Murayama, K., DeHaan, C. R., & Gladwell, V. (2013). Motivational, emotional, and behavioral correlates of fear of missing out. *Computers in Human Behavior*, 29(4), 1841-1848.
- Riordan, B. C., Flett, J. A. M., Hunter, J. A., Scarf, D., & Conner, T. S. (2015). Fear om missing out (FOMO): The relationship between FOMO, alcohol use, and alcohol-related consequences in college students. *Journal of Psychiatry and Brain Functions*, 2 (9), 1-7.
- Rogers, A. P., & Barber, L. K. (2019). Addressing FOMO and telepressure among university students: Could a technology intervention help with social media use and sleep disruption? *Computers in Human Behavior*, 93, 192-199.
- Rosen, L., Carrier, L. M., Miller, A., Rokkum, J., & Ruiz, A. (2016). Sleeping with technology: Cognitive, affective, and technology usage predictors of sleep problems among college students. *Sleep Health*, 2(1), 49-56.
- Saleem, S., Mahmood, Z., & Naz, M. (2013). Mental health problems in university students: A prevalence study. *Journal of Social Sciences*, 7(2), 124-130.
- Schmidt, C., Muench, R., Schneider, F., Breitenbach, S., & Carolus, A. (2018). Generation "Always On" turned off. Effects of smartphone separation on anxiety mediated by the fear of missing out. *International Conference on Human-Computer Interaction*, 851, 436-443.
- Swar, B., & Hameed, T. (2017). Fear of missing out, social media engagement, smartphone addiction and distraction: Moderating role of self-help mobile apps-based interventions in the youth. *Biomedical Engineering Systems and Technologies*, 5, 139-146.
- Weiler, A. (2005). Information-seeking behavior in generation Y students: Motivation, critical thinking, and learning theory. *The Journal of Academic Librarianship*, 31(1), 46-53.
- Whitworth, J. A., Williamson, P. A., Mangos, G., & Kelly, J. J. (2005). Cardiovascular consequences of cortisol excess. *Vascular Health and Risk Management*, 1(4), 29-299.
- Williams, K. D., & Nida, S. A. (2011). Ostracism: Consequences and coping. *Current Directions in Psychological Science*, 20(2), 71-75.

## Appendix A – Advertisement

Bent u een MBO, HBO, of WO student tussen de 16 en 35 jaar? Bent u altijd al nieuwsgierig geweest naar uw deelname aan e-groepen en wat dit betekent voor uw welbevinden? Dan zijn wij op zoek naar u! Klik op de link, vul de 10-minuten durende vragenlijst in, en maak kans op een mooie cadeaubon ter waarde van 15 euro!

[https://leidenuniv.eu.qualtrics.com/jfe/form/SV\\_cTMV48jHstTRyzr](https://leidenuniv.eu.qualtrics.com/jfe/form/SV_cTMV48jHstTRyzr)

Mocht het aanklikken van de link niet werken, kopieer dan de volledige URL in de adresbalk van uw browser en druk op Enter.

Heeft u vragen over dit onderzoek voordat u wilt beginnen? Dan kunt u contact opnemen met ons door een e-mail te sturen naar [masterthesisul2019@gmail.com](mailto:masterthesisul2019@gmail.com)

## **Appendix B – Information letter**

Beste student(e),

In het kader van onze master Psychologie, aan de Universiteit Leiden, doen wij onderzoek naar deelname aan e-groepen onder studenten in het middelbaar en hoger onderwijs. Hierbij willen wij u vragen een korte vragenlijst in te vullen. Hieronder vindt u meer informatie over het onderzoek.

### *Aanleiding van het onderzoek*

Wij zijn geïnteresseerd in uw deelname in e-groepen, bijvoorbeeld WhatsApp en Facebook. Wat vindt u belangrijk in e-groepen? Wat zou u niet willen missen in uw e-groepen? Wordt u soms onrustig van uw e-groepen? Waar wordt u blij van in uw e-groepen?

### *Belang van deelname aan het onderzoek*

Wanneer u deelneemt aan het onderzoek, kunnen wij een zo veelzijdig mogelijk beeld schetsen van de relatie tussen deelname aan e-groepen en het welbevinden van studenten.

### *De vragenlijst*

Het invullen van de vragenlijst neemt ongeveer 10 minuten in beslag. Na het volledig invullen van de vragenlijst kunt u kans maken op één van de 10 cadeaubonnen, elk ter waarde van 15 euro, die onder de 100 deelnemers verloot zullen worden. Als u wilt meedoen aan de verloting vult u aan het einde van de vragenlijst uw e-mailadres in. Als u een korte samenvatting van de onderzoeksresultaten van ons wilt ontvangen vult u ook uw e-mailadres in. Wanneer wij uw ingevulde vragenlijst ontvangen, is uw e-mailadres reeds losgekoppeld van uw overige antwoorden op de vragenlijst. Dat doen wij door u te verzoeken uw e-mailadres, indien u dat zelf wilt, aan het eind van de vragenlijst afzonderlijk in te vullen, los van uw antwoorden op de overige vragen. Na de loting en de verzending van de cadeaubonnen en/of de samenvatting van de onderzoeksresultaten zullen alle (afzonderlijk opgeslagen) e-mailadressen door ons vernietigd worden.

Dit onderzoek is goedgekeurd door de Commissie Ethiek van het Instituut Psychologie, Universiteit Leiden. Wij wijzen u erop dat deelname geheel vrijwillig is en u op elk moment uw invulling van de vragenlijst kunt beëindigen zonder verdere gevolgen.

Let op, bij het afsluiten en opnieuw opstarten van de vragenlijst is het niet mogelijk verder te gaan waar u gebleven was. Wij verzoeken u dan ook de vragenlijst in één keer in te vullen.

*Vragen?*

Heeft u vragen over dit onderzoek? Dan kunt u contact opnemen met ons door een e-mail te sturen naar [masterthesisul2019@gmail.com](mailto:masterthesisul2019@gmail.com)

Mocht u eventueel rechtstreeks contact willen opnemen met de universitaire projectleider dr. A. P. Wit, dan kunt u een e-mail sturen naar [wit@fsw.leidenuniv.nl](mailto:wit@fsw.leidenuniv.nl)

Met vriendelijke groet,

Daphne van den Heuvel

Ismail Khalid

## Appendix C – Informed Consent

### Toestemmingsverklaring

Voor deelname aan het wetenschappelijk onderzoek

“deelname aan e-groepen en het welbevinden van studenten”

Ik bevestig hierbij:

- dat ik een student ben tussen de 16 en 35 jaar oud
- dat ik voldoende geïnformeerd ben omtrent bovenvermelde studie
- dat ik vrijwillig deelneem aan deze studie
- dat ik voldoende tijd gehad heb om een beslissing te nemen aangaande mijn deelname
- dat ik er van op de hoogte ben dat mijn gegevens anoniem verwerkt zullen worden in deze studie
- dat de gegevens van de door mij ingevulde vragenlijst uitsluitend gebruikt mogen worden voor wetenschappelijk onderzoek, waarbij ik als individu niet herkenbaar zal zijn
- dat ik op elk moment de vragenlijst kan afsluiten zonder verdere negatieve gevolgen

*Indien akkoord, bevestig hieronder*

Hierbij ga ik akkoord met deelname aan het onderzoek

Ja

Nee

## Appendix D – Questionnaire

### Deel A: Personalia

Ik ben een...

- man.
- vrouw.
- zeg ik liever niet.

Ik ben \_\_\_\_ jaar oud.

Dit onderzoek richt zich op het welzijn van studenten.

Ben jij een student?

- Ja
- Nee

### Deel B: Wat vindt u belangrijk in groepen?

Mensen vinden verschillende dingen binnen groepen belangrijk. Wat vindt u belangrijk in groepen waar u deel van uitmaakt? LET OP: het gaat hier om zowel online als offline groepen.

	<b>Binnen mijn groepen vind ik het belangrijk dat...</b>	<b>Nooit</b>	<b>Meestal niet</b>	<b>soms niet / soms wel</b>	<b>Meestal wel</b>	<b>Altijd</b>
1	...informatie die ik deel gewaardeerd wordt.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	...de anderen mij er sociaal bij betrekken.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	...er duidelijke informatie is over wat we willen bereiken.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	...er duidelijke informatie is over hoe we dat willen bereiken.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	...we regelmatig onderling sociaal contact hebben.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	... de anderen om mij geven.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	...we regelmatig onderling informatie uitwisselen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	...de anderen mij kunnen steunen wanneer ik dat nodig heb.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	...mijn eventuele vragen om informatie niet genegeerd worden.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	...ik informatie kan checken bij de anderen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11	... de anderen mij accepteren om wat ik doe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	...ik word uitgenodigd voor sociale activiteiten.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	....ik aan de informatie kan komen die ik nodig heb.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	... de anderen mij niet afwijzen om wie ik ben.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### **Deel C: Uw deelname aan e-groepen.**

Vanaf nu gaan we specifiek in op uw deelname aan e-groepen. Geef hieronder aan aan hoeveel e-groepen u deelneemt bestaande uit **twee personen of meer, INCLUSIEF uzelf**. Hierbij kunt u bijvoorbeeld denken aan WhatsApp groepen, losse Whatsapp contacten, Facebookgroepen, E-mail groepen, online game groepen, chatgroepen, Discord, etc.

we zijn geïnteresseerd in uw deelname aan e-groepen van twee personen of meer inclusief uzelf.

1. Aan hoeveel e-groepen, van twee personen of meer, neemt u deel?

Geef hieronder aan hoeveel uur u de afgelopen 3 dagen in **totaal** besteed heeft aan al deze e-groepen **tezamen**? Wanneer dit minder dan 1 uur is, schrijf dan een 1 op. LET OP: 3 dagen bestaat in totaal uit 72 uur.

2. Hoeveel uur heeft u de afgelopen 3 dagen in **totaal** besteed aan al deze e-groepen **tezamen**?

### **Deel D: Waar hecht u waarde aan binnen e-groepen?**

Sommige mensen hechten vooral waarde aan het sociale aspect in e-groepen. Andere mensen hechten vooral waarde aan het informatieve aspect in e-groepen. Hoe zit dat bij u?

Binnen mijn e-groepen hecht ik waarde aan...	Helemaal niet	Meestal niet	soms niet / soms wel	Meestal wel	Helemaal wel
1 ...sociale binding.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 ...informatie-uitwisseling.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 ...vriendschappen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4 ...dat we allemaal over accurate informatie beschikken.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5 ...erbij horen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- 6 ...het bespreken van studie/werk-gerelateerde zaken.

### **Deel E: Mis ik iets?**

Sommige dingen in uw e-groepen vindt u misschien erger om te missen dan andere dingen. Wat is voor u belangrijk om niet te missen?

	<b>Binnen mijn e-groepen vind ik het belangrijk dat...</b>	<b>Nooit</b>	<b>Meestal niet</b>	<b>soms niet / soms wel</b>	<b>Meestal wel</b>	<b>Altijd</b>
1	...het niet aan me voorbij gaat wanneer de anderen het moeilijk hebben.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	...ik op de hoogte ben van details van wat we met elkaar afspreken.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	...ik meedoe wanneer de anderen iets sociaals organiseren.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	...ik word geïnformeerd over wijzigingen van wat we met elkaar afspreken.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	...ik kan zien wanneer de anderen plezier hebben.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	... ik meedoe wanneer de anderen informatie uitwisselen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	...ik op de hoogte van van sociale plannen van de anderen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	...ik uitleg kan krijgen wanneer ik iets niet snap.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	...ik de 'onderonsjes' van de anderen begrijp.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	...ik weet over welke informatie de anderen beschikken.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### **Deel F: Onrust / stress**

Sommige mensen worden wel eens onrustig/gestrest van hun e-groepen. Andere hebben hier minder last van. Hoe zit dat bij u?

	<b>Ik voel me onrustig/gestrest wanneer...</b>	<b>Nooit</b>	<b>Meestal niet</b>	<b>soms niet /</b>	<b>Meestal wel</b>	<b>Altijd</b>
--	--	--------------	---------------------	--------------------	--------------------	---------------

		<b>soms wel</b>				
1	...ik het gevoel heb dat ik niet genoeg tijd heb voor sociale binding met mijn e-groep.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	...ik niet genoeg heb bijgedragen aan de informatie-uitwisseling in mijn e-groep.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	...het scherm van mijn smartphone niet zichtbaar naar boven ligt, zodat ik het scherm niet kan zien.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	...ik het gevoel heb dat ik niet genoeg meegedaan aan sociale activiteiten met de e-groep.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	...ik geen uitleg kan vragen aan mijn e-groep als ik iets niet snap.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	...de push-berichten op mijn smartphone uit staan, waardoor ik niet direct merk wanneer ik berichten binnenkrijg.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	... ik het gevoel heb dat ik buitengesloten word.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	...ik niet kan deelnemen aan informatie uitwisseling in de e-groep.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	...het geluid/trillen van mijn smartphone uit staat, waardoor ik niet direct merk wanneer ik berichten binnenkrijg.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	... de anderen in mijn e-groep niet reageren op sociale voorstellen die ik doe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	...de anderen in mijn e-groep niet reageren op de informatie die ik met hen deel.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	... ik merk dat er een bericht binnenkomt dat ik niet direct kan bekijken.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	...ik niet snel een reactie krijg op een vraag die ik de andere in de e-groep heb gesteld.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	...ik onvoldoende op de hoogte ben van de informatie die anderen uitwisselen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	...ik mijn smartphone niet bij me heb.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	...ik niet op de hoogte ben van sociale activiteiten van mijn e-groep.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- |    |   |                          |                          |                          |                          |                          |
|----|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 17 | ...ik niet op de hoogte ben van de details dat we met elkaar afspreken. | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 18 | ... ik merk dat ik niet alles in e-groepen kan bijhouden.               | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
- 

**Deel G: Hoe gaat u om met eventuele onrust / stress?**

Soms kan de stroom berichten op uw smartphone u even teveel worden. Wat doet u als u zich hierdoor onrustig/gestrest voelt?

	Als ik me gestrest voel door mijn e-groepen...	Nooit	Meestal niet	soms niet / soms wel	Meestal wel	Altijd
1	... zet ik mijn smartphone uit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	... zet ik mijn smartphone op stil.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	... zet ik de notificaties van smartphone uit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	... beperk ik het gebruik van mijn smartphone.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	... zet ik, voordat ik naar bed ga, mijn smartphone uit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	... zet ik, tijdens het eten, mijn smartphone uit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	... zet ik, tijdens familiebijeenkomsten, mijn smartphone uit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	... zet ik, op vakantie, mijn smartphone uit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	... zet ik notificaties van sommige e-groepen uit, maar laat ik deze voor andere e-groepen aan staan.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	... geef ik in sommige e-groepen aan dat ik even niet meer meedoe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	... stap ik uit sommige e-groepen die mij stress opleveren.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

---

### Deel H: Waar wordt u blij van in e-groepen?

Mensen worden van verschillende dingen blij. Waar wordt u blij van binnen e-groepen?

	<b>Binnen mijn e-groepen word ik blij wanneer...</b>	<b>Nooit</b>	<b>Meestal niet</b>	<b>soms niet / soms wel</b>	<b>Meestal wel</b>	<b>Altijd</b>
1	...de anderen voor me klaar staan als ik ze nodig heb voor sociale steun.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	...ik op de anderen kan rekenen voor goede informatie.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	...ik het gevoel heb dat ik ertoe doe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	... de anderen voor me klaar als ik ze nodig heb voor studie/werk-gerelateerde zaken	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	...er mensen zijn om iets leuks mee te doen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	... ik antwoorden kan krijgen als ik iets niet snap.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	... ik mezelf kan zijn.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	...ik anderen goede informatie kan verschaffen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Appendix E – Debriefing

**Tot zover de vragenlijst. Hartelijk dank voor uw deelname!**

*Wat is het doel van dit onderzoek?*

In de omgang met anderen hebben mensen twee basisbehoefte, namelijk sociale binding en informatie-uitwisseling. Vandaag de dag gaat een groot deel van deze omgang met anderen via sociale media. Sommige mensen vinden sociale binding belangrijker dan informatie-uitwisseling, voor andere mensen geldt dit andersom. Bij veelvuldig gebruik van sociale media kunnen mensen toch soms het gevoel hebben sociale verbondenheid of bepaalde informatie te missen. Het gevoel iets te missen kan onrust of stress opleveren. Wij onderzoeken of het gevoel iets te missen aan sociale verbondenheid meer stress oplevert dan het gevoel iets te missen in de uitwisseling van informatie. Om met stress om te gaan wordt wel eens geadviseerd je mobiele telefoon dan maar helemaal uit te zetten. Deze "oplossing" kan echter meer problemen opleveren. Als zou blijken dat het één meer stress oplevert dan het ander, is het misschien geen goed idee de mobiele telefoon helemaal uit te zetten. Misschien kan stress beter voorkomen worden door mensen te leren om binnenkomende berichten minder op te vatten als sociaal verplichtend en meer op te vatten als puur informatief. Door dit onderzoek proberen wij bij te dragen aan de kennis over het ontstaan van sociale media stress. Deze kennis is nuttig bij het ontwikkelen van oplossingen ter bevordering van studentenwelzijn.

Tijdens het onderzoek hebben wij u onder andere gevraagd hoe u uw online sociale contacten ervaart en hoe u zich daarbij voelt. Mocht het zo zijn dat u zich na het invullen van de vragenlijst zorgen maakt over uw eigen deelname aan e-groepen, dan kunt u de onderstaande bronnen raadplegen voor verdere informatie en mogelijke tips.

*Extra informatie*

Links naar kennis, media, blogs en tips tegen FOMO en stress die kan voortkomen vanuit e-groepen;

[www.samentegeneenzaamheid.nl](http://www.samentegeneenzaamheid.nl)

[www.eenzaam.nl](http://www.eenzaam.nl)

[www.nrc.nl/nieuws/2016/11/04/eerste-hulp-bij-fomo-5124381-a1530257](http://www.nrc.nl/nieuws/2016/11/04/eerste-hulp-bij-fomo-5124381-a1530257)

[www.gezondheidsnet.nl/psychische-klachten/heb-jij-last-van-fomo-fear-of-missing-outh](https://www.gezondheidsnet.nl/psychische-klachten/heb-jij-last-van-fomo-fear-of-missing-outh)

[www.gezondheidenco.nl/297621/zo-kick-je-af-van-je-verslaving-aan-sociale-media/](http://www.gezondheidenco.nl/297621/zo-kick-je-af-van-je-verslaving-aan-sociale-media/)

*Vragen?*

Heeft u nog vragen over dit onderzoek? Dan kunt u contact met ons opnemen door een e-mail te sturen naar [masterthesisul2019@gmail.com](mailto:masterthesisul2019@gmail.com)

Mocht u eventueel rechtstreeks contact willen opnemen met de universitaire projectleider dr. A. P. Wit, dan kunt u een e-mail sturen naar [wit@fsw.leidenuniv.nl](mailto:wit@fsw.leidenuniv.nl)

*Wanneer u te zijner tijd een kort verslag wilt ontvangen over de resultaten van dit onderzoek en/of u wilt kans maken op één van de tien cadeaubonnen, klikt u dan op de onderstaande link. LET OP: een nieuw venster wordt geopend, u kunt naderhand dit huidige venster zonder enig probleem sluiten.*

[https://leidenuniv.eu.qualtrics.com/jfe/form/SV\\_bEhnpW51NXaGbZz](https://leidenuniv.eu.qualtrics.com/jfe/form/SV_bEhnpW51NXaGbZz)

**Nogmaals bedankt voor uw deelname!**

## Appendix F – Scales

The 'need to belong scale' consists of the following 7 items: "**Binnen mijn groepen vind ik het belangrijk dat de anderen mij er sociaal bij betrekken**", "*we regelmatig onderling sociaal contact hebben*", "*de anderen om mij geven*", "*de anderen mij kunnen steunen wanneer ik dat nodig heb*", "*ik word uitgenodigd voor sociale activiteiten*", "*de anderen mij accepteren om wat ik doe*" and "*de anderen mij niet afwijzen om wie ik ben*".

The 'need for information scale' consists of the following 7 items: "**Binnen mijn groepen vind ik het belangrijk dat informatie die ik deel gewaardeerd wordt**", "*er duidelijke informatie is over wat we willen bereiken*", "*er duidelijke informatie is over hoe we dat willen bereiken*", "*we regelmatig onderling informatie uitwisselen*", "*mijn eventuele vragen om informatie niet genegeerd worden*", "*ik informatie kan checken bij de anderen*", and "*ik aan de informatie kan komen die ik nodig heb*".

The 'importance to derive social bondingness from e-groups scale' consists of the following 3 items: "**Binnen mijn e-groepen hecht ik waarde aan sociale binding**", "*vriendschappen*" and "*erbij horen*".

The 'importance to derive accurate information from e-groups scale' consists of 2 items: "**Binnen mijn e-groepen hecht ik waarde aan informatie-uitwisseling**" and "*dat we allemaal over accurate informatie beschikken*".

The 'FOMO scale' consists of the following 5 items: "**Binnen mijn e-groepen vind ik het belangrijk dat het niet aan me voorbij gaat wanneer de anderen het moeilijk hebben**", "*ik meedoe wanneer de anderen iets sociaals organiseren*", "*ik kan zien wanneer de anderen plezier hebben*", "*ik op de hoogte van van sociale plannen van de anderen*" and "*ik de 'onderonsjes' van de anderen begrijp*".

The FOMI scale consists of the following 5 items( $\alpha = .62$ ): "**Binnen mijn e-groepen vind ik het belangrijk dat ik op de hoogte ben van details van wat we met elkaar afspreken**", "*ik word geïnformeerd over wijzigingen van wat we met elkaar afspreken*", "*ik meedoe wanneer de anderen informatie uitwisselen*", "*ik uitleg kan krijgen wanneer ik iets niet snap*" and "*ik weet over welke informatie de anderen beschikken*".

The 'FOMO-related stress scale' consists of the following 6 items: "**Ik voel me onrustig/gestrest wanneer ik het gevoel heb dat ik niet genoeg tijd heb voor sociale binding met mijn e-groep**", "ik het gevoel heb dat ik niet genoeg meegedaan aan sociale activiteiten met de e-groep", "ik het gevoel heb dat ik buitengesloten word", "de anderen in mijn e-groep niet reageren op sociale voorstellen die ik doe", "ik niet snel een reactie krijg op een vraag die ik de andere in de e-groep heb gesteld" and "ik niet op de hoogte ben van sociale activiteiten van mijn e-groep".

The 'FOMI-related stress scale' consists of the following 6 items: "**Ik voel me onrustig/gestrest wanneer ik niet genoeg heb bijgedragen aan de informatie-uitwisseling in mijn e-groep**", "ik geen uitleg kan vragen aan mijn e-groep als ik iets niet snap", "ik niet kan deelnemen aan informatie uitwisseling in de e-groep", "de anderen in mijn e-groep niet reageren op de informatie die ik met hen deel", "ik onvoldoende op de hoogte ben van de informatie die anderen uitwisselen" and "ik niet op de hoogte ben van de details dat we met elkaar afspreken".

The 'FOM-related stress scale' consists of the following 6 items: "**Ik voel me onrustig/gestrest wanneer het scherm van mijn smartphone niet zichtbaar naar boven ligt, zodat ik het scherm niet kan zien**", "de push-berichten op mijn smartphone uit staan, waardoor ik niet direct merk wanneer ik berichten binnenkrijg", "het geluid/trillen van mijn smartphone uit staat, waardoor ik niet direct merk wanneer ik berichten binnen krijg", "ik merk dat er een bericht binnenkomt dat ik niet direct kan bekijken", "ik mijn smartphone niet bij me heb" and "ik merk dat ik niet alles in e-groepen kan bijhouden".