Understanding Nomophobia: A Modern Age Phobia Among College Students

Caglar Yildirim[1(✉)] and Ana-Paula Correia[2]

[1] Human Computer Interaction, Iowa State University, Ames, IA, USA
caglar@iastate.edu
[2] School of Education, Iowa State University, Ames, IA, USA
acorreia@iastate.edu

Abstract. Nomophobia, or no mobile phone phobia, is the fear of being out of mobile phone contact and considered a modern age phobia particularly common among young smartphone users. This qualitative study sought to identify the dimensions of nomophobia as described by college students and adopted a phenomenological approach to qualitative exploration. Semi-structured interviews were conducted with nine undergraduate students at a large Midwestern university in the U.S. Based on the findings, four dimensions of nomophobia were identified: not being able to communicate, losing connectedness, not being able to access information and giving up convenience. Given the widespread adoption of smartphones and integration of smartphones into educational settings, findings of this study can help educators better understand learners' inclination to use their smartphones at all times.

Keywords: Nomophobia · Dimensions of nomophobia · Smartphones · Phobia

1 Introduction

As the most recent evolution of mobile information and communication technologies [1], smartphones have been widely and rapidly adopted. 58 % of American adult population are reported to own a smartphone [2]. Of these smartphone users, 83 % are aged between 18 and 29. Thus, smartphones are particularly popular among young adults. As a matter of fact, college students are considered as the early adopters of smartphones [3].

While the proliferation of smartphones can be attributed to numerous benefits and features they provide, there are certain problems associated with mobile phone use in general and smartphone use in particular. One such problem is nomophobia. Nomophobia, or no mobile phone phobia, is "the fear of being out of mobile phone contact" [4]. It is considered a modern age phobia resulting from the interactions between people and new ICTs and is used to refer to the feelings of anxiety and/or discomfort caused by being out of reach of a smartphone [5].

Given the widespread use of smartphones by college students, it should come as no surprise that they are prone to nomophobia. However, nomophobia has received little attention and has not been thoroughly investigated as a theoretical construct.

Thus, the purpose of this qualitative study was to explore the dimensions nomophobia through the experiences of college students. Specifically, this study sought to address the following research question: What are the dimensions of nomophobia as described by college students?

2 Method

2.1 Design

To address the guiding research question, this study adopted a phenomenological approach to qualitative exploration because the purpose was to explore the dimensions of nomophobia by describing the lived experiences of college students about the phenomenon, nomophobia [6]. Phenomenology, as a qualitative inquiry approach, attempts to explore a phenomenon through participants' narrative descriptions of their own lived experience [7, 8]. Hence, semi-structured interviews were conducted with a sample from college students to better understand the dimensions of nomophobia based on the lived experiences of the interviewees.

2.2 Participants

Participants were recruited for the interviews using purposive sampling strategy, with the purpose of identifying the participants who had experienced the phenomenon and therefore who could provide the most accurate narrative description of the phenomenon. That is why a criterion sampling strategy was used for purposive sampling. For this purpose, a screening questionnaire was distributed through email messages, using snowballing strategies.

The screening questionnaire was composed of questions related to smartphone ownership, duration of ownership, and smartphone use. Also, the questionnaire included eight items from a previously developed and validated questionnaire, Test of Mobile Phone Dependence (TMD) [9]. The reason for the use of this questionnaire was to determine the respondents who heavily depended on their smartphones based on their dependence score obtained from the TMD items.

The selection of the respondents was based upon the following criteria: (1) the respondent owned a smartphone for a year or more, (2) the respondent had a mobile data plan providing access to the Internet via the smartphone, (3) the respondent spent more than an hour using his or her smartphone, and (4) the respondent had a dependence score, calculated using the responses to the TMD items, greater than the mean of the scores of all respondents.

Those respondents meeting these criteria were contacted and invited for an interview. As a result, nine undergraduate students (four males, five females), aged 19–24, were recruited as participants for the interviews.

2.3   Materials

Prior to the onset of the study, an interview guide was prepared to be reviewed by the Institutional Review Board at the university where this study was conducted. The interview guide contained a variety of questions, starting with general questions about college students' smartphone use habits (e.g., *for what purposes do you usually use your smartphone?*), and delving into the feelings associated with the availability and unavailability of the smartphone (e.g., *how would you feel if you left your smartphone at home and had to spend your day without it?*, and *would you feel anxious if you could not use your smartphone for some reason when you wanted to do so?*).

2.4   Procedures

One-on-one, semi-structured interviews were conducted with the nine participants individually in a university office on campus. Upon their arrival at the interview location, the participants were informed about the study. Then, they were given an informed consent form with all the information about the scope of the study and instructed to sign it if they agreed with the procedures outlined in the form. After the interviews' permission was granted, all the interviews were audio-recorded and the interviewees were assured about confidentiality of their information. During the interviews, the interview guide was followed to make sure that all the interviewees were given the same information about the study and were asked the questions. After the interviews, the recordings were transcribed verbatim and pseudonyms were used to protect the identity of the participants.

2.5   Data Analysis

To analyze the qualitative data from the interviews, phenomenological data analysis steps as described by Moustakas [8] were followed. In essence, phenomenological data analysis consists of three main steps: phenomenological reduction, imaginative variation, and construction of the essence of the experience [6, 8]. The initial step in phenomenological reduction is horizonalization, which basically encompasses identifying significant statements about the interviewees' experience while giving equal amount of importance to all the statements in regards to their contribution to understanding the interviewees' experience [6, 8]. This step is followed by the elimination of repetitive and overlapping statements [6] to divulge the interviewees' narrative description of their lived experience, which are commonly referred to as invariant constituents [8]. Later on, these invariant constituents are grouped into themes representing meaning units [6]. Incorporating these themes and interviewees' statements, a textural description of the experience is written.

Imaginative variation is a process in which a structural description of participants' experience with the phenomenon is constructed by using the textural descriptions from the phenomenological reduction [8]. The essence of experience is constructed through the synthesis of the textural descriptions and the structural description [6, 8].

After reading the transcriptions of all the interviews repeatedly and thoroughly, horizons were extracted from each interviewee's transcription. Then, these horizons, or significant statements about the participants' experience, were grouped into meaning units through thematic clustering. Consequently, the textural description of the experience for interviewees was obtained. Later, a structural description of the interviewees' experience was written, which was then used to construct the essence of the phenomenon, nomophobia, through the narrative descriptions of the interviewees [7].

2.6 Trustworthiness

In qualitative research, member-checking is important for the verification of the accuracy and trustworthiness of the findings by requesting input from participants [10]. Member checking was used to make sure that the findings of the phenomenological analysis reflected accurately the interviewees' experience. All interviewees were invited for member-checking through an email message explaining what they were requested to do. They were asked to read the descriptions of their experience and assess whether the descriptions reflected their experience. Also, they were asked to propose changes or corrections if anything was not accurate enough. Three out of nine interviewees were able to check the descriptions of their experience. They did not make any changes on the descriptions. They confirmed that the descriptions were accurate and valid, alluding to the credibility of the interpretations.

3 Findings

As a result of the phenomenological analysis of the interview transcripts, four dimensions of nomophobia were identified: (1) not being able to communicate, (2) losing connectedness, (3) not being able to access information and (4) giving up convenience.

3.1 Not Being Able to Communicate

This dimension refers to the feelings of losing instant communication with people and not being able to use the services that allow for instant communication. It also encompasses the feelings of not being able to contact people and to be contacted.

The interviews showed that the participants heavily relied on their smartphones and respective features for communication purposes. When asked in what ways he thought his smartphone affected his daily routines, Peter, a 21-year-old junior in Computer Engineering, said:

> It lets me keep in touch with… like my parents who live out of the state. We can text or talk all the day without like setting time aside to devote. We can just message each other as needed. For work and stuff, if someone has a question for me I can respond to them wherever I am.

For the same question, Olivia, who is a 21-year-old junior in Agricultural Education, responded as follows: "It lets me communicate with people more easily. So if my

schedule needs to change or I need to ask someone a question, I can do that more easily."

Lily, a 20-year-old sophomore in Elementary Education, said: "I think it enhances [my daily routines] actually. Obviously communication is so much easier. You can just text a group to tell them where to meet up…"

Ted, a 24-year-old senior in Mechanical Engineering, explained the importance of his smartphone as a communication tool as follows:

> It is like a good friend to me. It can help me solve many problems. Also, it is a very important way to connect to other people. For example, I am in the US right now, but most of my friends are in China or somewhere. I have to use my phone to communicate with them. It helps me feel better, feel I am not alone. For example, when I first came to the US, I just felt homesick but my phone helped me communicate with my family so I could feel better. Also, every morning when I wake up, my first thing is to get my phone and check what I got during the night. Since there is a time difference with where my friends live, they may send me something during the night. So every time I wake up I check my phone.

These quotations demonstrate the importance of smartphones as a communication tool for young adults. Owing to the place of smartphones in their lives, the participants expressed that they would feel anxious when they could not use their smartphones as illustrated by the following quotations.

> The part that would be unfortunate is like I can't receive any messages or email. I can't contact people I need to contact. That's not like a nice feeling. (Peter)

Peter's statement about not being able to contact people was recurrently pointed out by other participants, as well. When asked how she would feel if she had left her smartphone at home, Lily said she had forgotten her smartphone at home the day before the interview. She described her experience as follows:

> It is funny I did that yesterday [laughing]. I left it at home. Umm it was kind of weird because I couldn't text my roommate and say "when are you riding the bus home?" I couldn't communicate. For that instant communication, I had to wait until I opened my computer on Wi-Fi and typed out a message. [] The communication one was the hardest for me. [] Not being able to get a hold of people…

Lily's experience provides insight into the importance of instant communication for young adults. To her, instant communication meant being able to get a hold of someone through text messaging.

Similarly, another problem was related to being out of contact. Tracy, a 22-year-old senior in Kinesiology, said that she would feel anxious if she could not use her smartphone based on a recent experience: "I just blew through my first 300 min a couple of days ago. I was like "Now how are people gonna call me?" Even that makes me have a feeling of anxiety."

Tracy also explained how she felt when her smartphone was broken. She said she hated the fact that she depended on her smartphone too much and added:

> The losing of contacts, connection and the losing of information too. Pictures are not a big deal. But I don't have the contacts anywhere else so I was like "how am I gonna contact people to let them know my phone is dead."

Thus, Tracy's statements highlight the value and importance young adults put on both contacting and being contactable by their family and/or friends.

While calls and text messages were highlighted in the participants' statements, email messages were another medium of communication for Astrid, a 22-year-old senior in Microbiology:

> I think I am too attached to my email like I get back to emails really quickly, which is great for some things, but sometimes I feel too plugged in to the email. [] I think that not being able to check my email would probably make me a little anxious just because I know at the end of the day I probably would have a full inbox. I wouldn't be able to check it. If someone like needed me for something, I wouldn't be able to respond right away.

To Astrid, email messages were just as important as calls and text messages. Her statement also shows her desire to respond to people immediately when they try to contact her.

3.2 Losing Connectedness

This dimension is related to the feelings of losing the ubiquitous connectivity that smartphones provide, and being disconnected from one's online identity (especially on social media).

The interviews revealed that connectedness was a driving force for young adults to use a smartphone. Astrid stated that one of the benefits of her smartphone was that it helped her stay connected. She said:

> I think it allows me to stay up-to-date with my friends and all of that. I also have this app that allows me… I went abroad this past summer so I have a lot of friends in Africa that I can't text. So it helps me stay connected to them because there is like this free texting app so I can text them for free through that. And then I think it facilitates my ability to stay connected to my classes like I have a Blackboard app that I check for updates and lecture notes and all of that.

Another important point raised by the participants was related to how they ensured that they saw the notifications from their smartphones. For instance, Peter said:

> When I am on my computer or something, I would leave my phone like facing this way [showing his smartphone facing up so he can see the screen when it is on the desk] and then there is a light here [showing the place of the light]. It would change like if it is olivine, it is a text from my girlfriend. If it is like blue, it is like a friend. If it is purple, it is an email. That way if I notice it and I can decide. If it is purple, I don't care about email right now so I can just work on.

Astrid stated:

> I have my smartphone like next to me on my desk like at home. So if it buzzes because someone like Facebooked me or whatever, I will check that and go back to what it is I am doing. I guess I don't like seeking out to check it while doing something but if I see that someone is like contacting me I will check it.

Lily said:

> If it is just sitting here and I know nothing has happened with it, I don't need to check it. Or if I don't hear it ring, or if it is just in a bag somewhere but if I hear it go off then I had that need of

"what is it? what is the notification?" If I could, I would check. I wouldn't if I am having a meeting with a professor. I wouldn't check it; I would just wait. But if I am just doing something on my own, I would check it.

Ted recurred: "If there is a notification, I would check it as soon as possible. If it is nothing important, I would continue what I was doing."

These quotations illustrate the importance young adults attach to making sure that they notice the notifications they receive from their smartphones and their desire to check their smartphones for notifications. They appear to view notifications as a way of ensuring connectedness: if they have notifications, it means they stay connected to their online identity and networks.

Connectedness seems not only related to their online identity but also to the smartphone itself. Tracy's comment provides an exemplar of this point: "[*my smartphone*] is very important because of that connectedness and I got used to it. So it is hard to go backwards."

It is worth noting that Tracy brought up a recurrent point - being used to having a smartphone. When asked how she would feel if she did not have her smartphone with her, Olivia said:

Because you are used to having it in your pocket or in your hand and it is like you are always touching your pockets, looking for it and like situations like on the bus or if I am sitting outside the classroom, waiting for the class to start, I don't know what to do with myself cause in that situation I'd be probably on my phone.

Furthermore, Peter commented: "Once you are used to having a smartphone, you don't want to go back to having like an old phone."

These statements suggest an interesting point: not only do young adults, via their smartphones, feel connected to their online connections and networks but they do feel connected to their smartphones, as well.

When asked how she would feel if she had left her phone at home, Olivia said: "Umm I have done that before and I just feel kind of like naked."

For the same question, John said he would feel awful. He added:

Pretty much for me it is just like it becomes twined with your everyday routine and everything. I mean it is just like it is not comfortable to have a day without it. If you went all day without, uhh…, get rid of your backpack and pencils and stuff. Imagine going to a class and it would be just weird. For me, I lost my cell phone in a classroom one day. I couldn't find for like four hours. In that four hours, I was like I just lost power instead of cost, you know. So I guess losing it versus forgetting it is different but yeah I mean going without it is a huge drawback 'cause it is entwined with everything today. It is also kind of an expectation. I guess for the most part society just kind of expects everybody to have a smartphone. So it is like "yeah, I will send an email. Reply once you get it." You know it is not like five hours later when you get home. They want responses quick.

John's portrayal of his smartphone as being entwined with his daily routine shows how important connectedness is in his life. He brings up a very important point that having a smartphone is an expectation in society. To further explain his point, he added:

It pretty much is considered mandatory in society now. People will complain about people who are on their smartphones too much but if you look around at what everybody else is doing if you

didn't have a smartphone or you weren't on your smartphone, that's a lot of less productivity. It is just away from the norm.

Thus, he viewed not having a smartphone as an aberration from the norm.

3.3 Not Being Able to Access Information

The dimension of not being able to access information reflects the discomfort of losing pervasive access to information through smartphones, being unable to retrieve information through smartphones and search for things on smartphones.

The interviews showed that accessing information on smartphones was of great importance for young adults. As a benefit of having a smartphone, Peter said:

> I like the ability of… if you are walking around, and you are like "oh, what is this song?" you can pull out an app that figures out what song is playing. If you are thinking about "what did I just learn in the lecture today?" you just pull out and google what the lecture note was and like no matter where you are, if you have a question you don't have to set that question aside. You can just figure out the answer like immediately. Things there most of the Internet, I guess.

Robin, a 21-year-old junior in Elementary Education, described the benefits of her smartphone in terms of how it facilitates access to information as follows:

> Benefits would be like I check the weather and check like if I have a question like about I didn't know when the [football] game was, so I could check when that was or questions like someone says something and I am like "what does that mean?" so I check it on my phone. Or "what actor was in that movie?" So that's kind of how I use it for that.

Similarly, Lily said her smartphone was very beneficial for accessing information and added:

> I use it for my news. I use CNN and BBC apps to like get the world news. I am constantly googling things, looking things up. So instant gratification in a way. Like I can find things right away if I wanna find or know something.

Ted said:

> It benefits me a lot. Just like with a smartphone I can get as much information as I want. Because I am an international student, when I have trouble reading something or I don't know what a word means I can look it up on the Internet. It provides me with a lot of information. Also, it has many features. It has a camera. It can work like an iPod or something. I can listen to music. I can take pictures. It also has GPS or navigation. It is very useful.

Barney, a 22-year-old senior in Aerospace Engineering, described the benefits of his smartphone as follows:

> Especially with class projects and stuff like that, it is really nice because I like to be able to look things up. That has come in handy a couple times, as I have been talking about. School projects with other friends.

To further explain how he uses his smartphone to access information, Barney also added:

> It is especially nice if I have a test coming up. Sometimes I take my study notes on Evernote. From there I can pull out my notes and just look at them quick. Sometimes I make some study

notes. If I don't wanna pull out a bunch of sheets, I can like quick search through them to find different things. So many of my classes have like online stuff. For a good example, I had a German test yesterday. When I was on my way to the class, I just pulled out my smartphone, loaded up the PowerPoint and just started reviewing it while I was walking.

These quotations exemplify the importance put on accessing information through smartphones. Since it is a very essential component of their smartphone use, young adults report problems when they cannot access information through their smartphones. The following statements by Olivia provide an insight into this issue:

I like having information at my fingertips like if I don't know the answer of something, I wanna know it right away. So I'm gonna use my smartphone to look it up. [] And if I couldn't answer a question right away, without that access to the Internet I feel like that would make me uncomfortable.

The same concern was pointed out by Peter, too. He said: "I would feel anxious if I can't google information."

3.4   Giving up Convenience

This dimension is pertinent to the feelings of giving up the convenience smartphones provide and reflects the desire to utilize the convenience of having a smartphone.

The interviews revealed that the participants found their smartphones convenient. When describing his use of his smartphone, John said:

[My smartphone use] has probably been excessive. I mean just because it is so convenient, I mean you have literally everything you need in your pocket. If I didn't have to type papers or play Legal Legend, I probably wouldn't need a laptop. I mean there is research, I suppose too. It is just convenient; you always have everything you need right there. [] I mean having like a 4G LT like everywhere here and having the convenience is really nice to have. Especially being able to drive anywhere now. We don't have like dead spots for the most part. I mean besides like a few spots you have pretty much Internet anywhere, which three years ago even you drive out of a city and there is nothing.

Although John believed that he was using his smartphone excessively, he did not seem to be worried about it because of the convenience it provides. When asked how he would feel if he could not use his smartphone, John stated:

I would say it is kind of situational. For the most part, I would definitely feel anxious. I mean if you are in the middle of the day and if it is 2 o'clock and your class is until 4 or something, you know. It is like snowing outside. You know there is always stuff that can happen. Just being out of the loop completely and not having that right here you know… It is almost like a comfort that you carry around with you. It is like a peace of mind, I guess.

John appeared to associate having a smartphone with relaxing or relieving the stress of "being out of the loop." Barney was also pleased with the convenience his smartphone provided. He described it even further:

It is kind of a freedom. It is the same thing as moving from a desktop to a laptop computer. With desktop, obviously you are stuck wherever that is but with laptop you can freely move about the house or move to a friend's location. The same thing with the smartphone is now suddenly you don't even need the Internet. You can kind of move wherever then and you get access to the

Internet and get access to anything. So it is kind of the same way of freedom. If I wanted to, I could access anything at any time.

These quotations demonstrate that having access to the Internet one of the most convenient commodities smartphones allow for. Both John and Barney touched upon the convenience of constant and instant access to the Internet anywhere and anytime. If this convenience of having constant access to the Internet is not provided, then the feelings of discomfort emerge, as demonstrated by the following statements. Robin said:

> It would be kind of annoying because it is just I am used to it again. If I don't have service for the Internet, then I would be like always keep trying to see if I do have service or something like that. If I am in a different state, it doesn't always work out and so that's really annoying. I am always like "oh, I wish I was back in Iowa so I could use my smartphone again." One time my smartphone broke, then I got a non-smartphone to use and then it wasn't as big of a deal because I knew it didn't have those capabilities. But I already knew that. If this one [showing her smartphone] wasn't working, again that would be annoying because I am paying for it and I know that I should be able to use it.

As Robin's statements show, when she knows she should be able to use her smartphone and utilize the convenience it offers, she expects to have it available all the time. If not, she feels annoyed. Based on her experience with the "non-smartphone", it might be that as the expectations from the smartphone increase, the feelings of annoyance and/or anxiety tend to be more severe.

Moreover, Ted stated:

> Sometimes I feel anxious but mostly if there is not internet connection, I would try to go somewhere else to get access to the Internet. If my battery goes dead, I would try to charge my phone. I would try to make it alive.

Likewise, Ted, who was an international student, said:

> Actually, when I am with my family and friends, I would not feel uncomfortable if my battery is low or dead. I think when I am lonely, I feel my phone is a very important thing. But when I am not alone, or I have something to do, I don't feel the same.

Ted's comment is an exemplar of the effect of loneliness and being with family and friends on the feelings attached to the smartphone.

The importance of having battery in the smartphone was pointed out by another participant, as well. John, who was previously reported to believe that his smartphone was a peace of mind for him, expressed his desire for having a charged battery in his smartphone as follows:

> [] If it does go dead, that's the sort of thing when it is like "I need to charge my phone right now". Especially, if I'm not at home and it dies, it is just an uncertainty of like what if I forgot my keys? [] If it does die, you lose a peace of mind.

This statement exemplifies how important it is for young adults to have a charged battery so that their smartphone will be "alive". John appeared to attach the same value to having his smartphone with him as the value to having his keys with him.

Another important point was made by Tracy when asked to describe her smartphone use. She said:

Ummm, I would probably say that I am addicted to my phone based on when my phone died a couple of weeks ago and I had to get a new one and I was like "Oh my Gosh what am I gonna do?". And then within 24 h I had a new phone, just real quick. [] I felt like I was gonna get stranded somewhere [laughing]. [] Like "well, I don't have phone now. What do I do?" Like Dark Ages. Just kidding but yeah [laughing]"

Tracy described herself as being addicted to her smartphone. She appeared to count on her smartphone as a means of ensuring safety.

4   Conclusions

This study provided greater insight into nomophobia and enhanced our understanding of the phenomenon by identifying the dimensions of nomophobia as described by college students. In this study, nomophobia is defined as the fear of not being able to use a smartphone or a mobile phone and/or the services it offers. It refers to the fear of not being able to communicate, losing the connectedness that smartphones allow, not being able to access information through smartphones, and giving up the convenience that smartphones provide.

Owing to the advances in mobile ICTs, smartphones have infiltrated into every aspect of our lives, including teaching and learning environments. Given their endless features, mobile ICTs, especially smartphones and tablet PCs, have been closely integrated into teaching and learning. Thus, it is almost inevitable to think of a classroom setting in which smartphones and tablet PCs are not used. That being said, smartphones are sometimes reported to be counterproductive to instructional practices because of their distractive nature: as the students have constant access to the Internet and thus to their online identity on social media, it becomes challenging for instructors to keep their students engaged in instructional activities, in lieu of their smartphones. In that sense, having a better understanding of why students are so attached to their smartphones can help instructors find better solutions to address the problem of engagement and distraction from the learning activities.

This study contributes to the nomophobia research literature by identifying the dimensions of nomophobia through the experiences of college students. Because smartphones have become an integral part of classrooms and have been extensively used as an instructional technology, it is of great importance for educators to consider the unintended consequences and implications of smartphones in regards to teaching and learning. Future research is warranted to investigate the relationship between nomophobia, and academic success and motivation.

References

1. Oulasvirta, A., Rattenbury, T., Ma, L., Raita, E.: Habits make smartphone use more pervasive. Pers. Ubiquit. Comput. **16**, 105–114 (2012)
2. Pew Research Center. http://www.pewinternet.org/fact-sheets/mobile-technology-fact-sheet/
3. Lee, S.Y.: Examining the factors that influence early adopters' smartphone adoption: the case of college students. Telematics Inform. **31**, 308–318 (2014)

4. SecurEnvoy. http://www.securenvoy.com/blog/2012/02/16/66-of-the-population-suffer-from-nomophobia-the-fear-of-being-without-their-phone/
5. King, A.L.S., Valença, A.M., Nardi, A.E.: Nomophobia: the mobile phone in panic disorder with agoraphobia: reducing phobias or worsening of dependence? Cogn. Behav. Neurol. **23**, 52–54 (2010)
6. Creswell, J.W.: Qualitative Inquiry and Research Design: Choosing Among Five Traditions. Sage, Thousand Oaks (2012)
7. Miles, M.B., Huberman, A.M.: Qualitative Data Analysis: An Expanded Sourcebook, 2nd edn. Sage, Thousand Oaks (1994)
8. Moustakas, C.: Phenomenological Research Methods. Sage Publications, Thousand Oaks (1994)
9. Chóliz, M.: Mobile-phone addiction in adolescence: the Test of Mobile Phone Dependence (TMD). Prog. Health Sci. **2**, 33–44 (2012)
10. Rager, K.B.: Self-care and the qualitative researcher: when collecting data can break your heart. Edu. Res. **34**, 23–27 (2005)