Using nomophobia severity to predict illegal smartphone use while driving

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ABSTRACT

The fear of being without a mobile phone has emerged as a global psycho-social phenomenon impacting smartphone users and their behaviour. Determining whether higher levels of nomophobia are associated with an increased likelihood of illegal smartphone use in vehicles may provide driver licencing authorities with avenues to reduce risk by developing programs and training aimed at mitigating nomophobia. This study builds upon a previous analysis that revealed only one of nomophobia’s four factors—the fear of being without access to information—predicted the likelihood of illegal smartphone use while driving. By measuring total nomophobia scores in terms of severity, not factors, this study identified a stronger relationship than previously thought between driver’s illegal smartphone use and the fear of being without a mobile phone. Indeed, using a sample of 2773 Australian smartphone users from the state of Victoria, individuals with ‘severe’ nomophobia were 85% more likely to engage in illegal use while driving. In other words, the odds of engaging in illegal smartphone use among those with severe nomophobia increased by a factor of 6.6. Given the global prevalence of severe nomophobia is over 20%, these findings become significant for road users around the world, especially in low to middle income countries where 90% of road traffic deaths occur. Developing educational and/or behavioural programs reducing nomophobia may reduce road traffic deaths.

1. Introduction

1.1. Smartphone use while driving

With over 1.3 million deaths and 20-50 million road users injured annually (World Health Organization, 2018), road safety is a challenge that impacts most developed and developing countries. In Australia, federal, state, and local governments utilise evidence-based road safety initiatives, with independent studies demonstrating their success in reducing road trauma (Australian Transport Council, 2011). During the 12 months prior to February 2021, there were 211 road deaths in the Australian state of Victoria, down from 266 the previous year (this may be a result of COVID-19 impacting road user behaviour) (Bureau of Infrastructure and Transport Research, 2021). The Victorian Road Safety Strategy for 2021–2030 (Department of Transport, 2020) aims to half this road toll by 2030.

Studies demonstrate smartphone use while driving reduces overall performance (Caird, Simmons, Wiley, Johnston, & Horrey, 2018): reaction times are slower (Strayer & Johnston, 2001), maintaining lateral vehicle control more difficult, and keeping correct following distances less likely (Caird, Willness, Steel, & Scialfa, 2008). Handheld and hands-free phones have been found to produce similar performance decrements in simulated driving environments (Lipovac, Đerić, Tasić, Andrić, & Marić, 2017). Smartphone use while driving, however, has shifted from calling and texting distractions (Caird, Johnston, Willness, Asbridge, & Steel, 2014) to engaging with social media applications such as Facebook, Instagram, Snapchat, YouTube, and email (Rowden & Watson, 2013). In the Australian state of Victoria, these behaviours are also illegal: “using a mobile phone while driving is prohibited, except to make or receive a phone call or to use its audio/music functions provided the phone is secured in a commercially designed holder fixed to the vehicle; or can be operated by the driver without touching any part of the phone, and the phone is not resting on any part of the vehicle; or can be operated by the driver without touching any part of the phone, and the phone is not resting on any part of the driver’s body” (VicRoads, 2017). Despite these restrictions, 31% of 1736 Victorian drivers admitted in 2019 to illegally using their mobile phone while driving in the three months prior (Transport Accident Commission, 2019).

Much research has been conducted to explore factors impacting the likelihood a driver will engage with their devices illegally. For instance, the severity of fines, certainty of apprehension, and swiftness of

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2451-9588/© 2022 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by-nc-nd/4.0/).
finding companionship, looking for employment, paying bills, engaging with new mobile social applications and technologies, and the insatiable driving (World Health Organization, 2010). The social and cultural experiences are increasingly becoming digitised; collecting takeout, odds with the attention required to drive safely. Previously analogue stay connected, all create social conditions that are fundamentally at odds with the attention required to drive safely.

Yet, in highlighting an increase in distraction-related fatalities on the road, the Victorian Road Safety Strategy (Department of Transport, 2020a) attributed the societal pressure to remain connected as a leading factor. This indicated a shift toward a socio-ecological understanding of illegal smartphone use while driving (Department of Infrastructure, 2021a; Department of Transport, 2020), meaning driver behaviour was not exclusively a product of the individual. Rather, illegal use was a product of systemic elements that created the environment for driver distraction (Parnell, Stanton, & Moutari, 2018) and younger drivers were more likely than older age groups to use their smartphones illegally while driving (Atchley, Atwood, & Boulton, 2011; Bates, Darvell, & Watson, 2017; Kaviani et al., 2020a).

To remain connected, all create social conditions that are fundamentally at odds with the attention required to drive safely. Previously analogue experiences are increasingly becoming digitised; collecting takeout, finding companionship, looking for employment, paying bills, engaging in education, finding community, hailing a taxi, or communicating with friends and family are all accessible anywhere and at any time, the instant gratification and convenience bleeding into moments often reserved for intimacy, reflection, quietude, or that demand full cognitive attention (Mendoza, Pody, Lee, Kim, & McDonough, 2018; Wilmer, Sherman, & Cinin, 2017). The way in which smartphones are embedded into daily routines and interactions means the attention afforded to physical space is increasingly rendered secondary to the mores of digital communication (Kaviani, Robards, Young, & Koppel, 2020). In a technologically saturated world there exists an expectation of perpetual availability (Gauld, Lewis, White, Feister, & Watson, 2017; Seiler & Kidwell, 2016), meaning road users are in possession of their devices while driving.

This has consequences for a driver’s attention. As such, to understand what may impact a driver’s choice to engage with their device, research and the development of evidence-based policy must also consider the nature of the relationship individuals have cultivated with their device.

### 1.3. Nomophobia as predictor

Being without a smartphone can be an unsettling experience (Tams, Legoux, & Léger, 2018), one that has come to be defined as nomophobia—the fear of being without a mobile phone (Yildirim & Correia, 2015). The term, an abbreviation of ‘no mobile phone phobia’, refers to the discomfort, nervousness, or anxiety caused by being out of contact with a mobile phone (Bragazzi & Puente, 2014). The silent allure of digital technology is purposefully attuned to exploit the user’s psycho-social vulnerabilities; the psychological determinants of nomophobia—anxiety, stress, fear, discomfort—are the same trigger emotions application developers leverage to encourage use and manufacture habitualisation (Eyal & Hoover, 2014). Indeed, the human mind is partial to rumination, so the instant relief smartphones provide become a positive reinforcement that drives smartphone overuse (Khoo & Yang, 2021). For smartphone users the device provides, or promises to provide, instant respite from thoughts and feelings. The inability to sit with negative emotions or intentionally direct our minds toward stimulation outside our digital worlds is further habitualising, and as reliance increases we come to depend on the existential security it drapes upon us (Hunter et al., 2018). By turning toward the curated and commodified experience our smartphones provide, our attention is captured rather than voluntarily proffered. Tellingly, 89% of smartphone interactions are actually initiated by users, with only 11% of pick-ups because of notifications (Heitmayer & Lahlou, 2021). The stronger our relationship with smartphones, the more likely endogenous distractions occur in spaces that demand or benefit from our attention, such as driving a vehicle.

The proliferation and increased use of smartphones have contributed to what some define as a ‘pathological’ fear of being without the device (King, Valença, & Nardi, 2010) and a ‘disorder of the modern world’ (King et al., 2013), with Bragazzi and Puente (2014) suggesting it be added to the Diagnostic and Statistical Manual of Mental Disorders (DSM). Yet smartphones can be a channel for connection, learning, belonging, and inclusion, so the concept of ‘nomophobia’ is complex and worth unpacking. Describing the fear of being without a smartphone as a phobia is problematic; experiencing nomophobia may merely demonstrate the device’s usefulness than signify a pathology. To further complicate the experience, studies have found nomophobia’s psychological constellations overlap with other psycho-social conditions (Lee, Kim, Mendoza, & McDonough, 2018; Olivencia-Carrion et al., 2018), behavioural addictions (Salehan & Neglahan, 2013), and mental illnesses (Lee et al., 2018), encouraging perceptions of the experience as indicative of underlying treatable comorbidities (King et al., 2013; Mendoza et al., 2018; Yildirim & Correia, 2015) and associations with psychopathological conditions (Gonçalves, Dias, & Correia, 2020).

To go beyond these pathologising interpretations we conducted research to determine if nomophobia actually increased risks to an individual’s physical safety (Kaviani et al., 2020; Kaviani et al., 2020a). We identified the growing road safety issue of smartphone use while driving and sought to establish whether nomophobia could predict the likelihood a driver would engage in illegal use. In keeping with the desire to understand varying motivations of an individual’s need to be with their device, our primary focus was the respective associations of nomophobia’s four factors (i. The fear of not being able to communicate; ii. To remain connected, iii. To access information, iv. To maintain convenience) with age, gender, average daily smartphone use, and illegal use while driving, and to determine the interrelationships and relative value these variables may have on the likelihood of illegal use. The study revealed all four of nomophobia’s factors were significantly positively associated with gender (women were more likely to have higher levels across each factor), age (younger age groups i.e., 18-25-year-olds, had higher levels across each factor), daily use (use over 3 h per day increased levels across each factor), and illegal smartphone use (drivers breaking the law had higher levels of nomophobia across all four factors). When employing these same variables to determine their
predictive strength, we found being male increased the likelihood of illegal smartphone use while only factor iii, the fear of not being able to access information, significantly predicted illegal use. Every unit increase in the fear of not being able to access information, the likelihood of non-compliance while driving increased by 6%. The study demonstrated that some aspects of the relationship an individual has cultivated with their smartphone can predict compliance with driving law.

The study’s design, however, limited the extent of interpretation. The decision to focus on each factor and not in terms of overall severity as defined by the NMP-Q (≤20 = absence, 21–59 = Mild, 60–99 = Moderate, 100–140 = Severe) meant that the results only provided a partial impression of nomophobia’s impact on illegal use while driving. Despite the significant correlation with illegal smartphone use and factor iii’s independent predictive value, developing targeted interventions such as behavioural programs designed to mitigate smartphone engagement while driving requires an understanding of the aggregate impact one’s desire to be with their device may have on compliance. Therefore, using the same data set, this study specifically explored the impact of nomophobia’s total severity on illegal smartphone use while driving.

2. Method

2.1. Materials

This study formed part of a larger research program that examined illegal smartphone use while driving (Kaviani et al., 2020a), nomophobia and problematic mobile phone use (Kaviani et al., 2020), and the impact of formal and informal deterrence mechanisms on the likelihood of engaging in illegal use (Kaviani, Benier, et al., 2021; Kaviani et al., 2020b, 2021). The data used were collected from an online survey—the Smartphone Use and Driving Survey (SUDS)—administered through Qualtrics, an online survey tool, between June 2019 and August 2019 (pre-COVID).

2.1.1. Participants

The sample for this study consisted of 2773 respondents from the Australian state of Victoria. Participants were recruited from various online channels, such as the Facebook page of VicRoads—the Road Authority of Victoria, the State of Australia where the study was conducted, via RoadSafe Community Groups, and through the Royal Automobile Club of Victoria’s (RACV) online mailouts.

Participants were eligible if they owned a smartphone, drove at least once per week in the previous month, were 18 years or older, and held a current Victorian driver’s licence. Every participant was offered the chance to enter a draw to win one of four $100 gift cards upon completion.

Ethics approval was granted from the University Human Research Ethics committee.

2.1.2. Nomophobia

Nomophobia was measured using the nomophobia questionnaire (NMP-Q) developed by Yildirim and Correia (2015). The questionnaire contained 20 items (Appendix A) that are related to: not being able to communicate, losing connectedness, not being able to access information, and giving up convenience. Responses were recorded on a 7-point Likert scale (where 1 = strongly disagree, and 7 = strongly agree). The 20 items of nomophobia had an excellent internal consistency (Cronbach’s Alpha = 0.96). Nomophobia can be measured on a continuous scale ranging from 20 to 140. Scores can also be divided into four severity categories (≤20 = absence, 21–59 = Mild, 60–99 = Moderate, 100–140 = Severe) as defined by the NMP-Q (Yildirim & Correia, 2015).

2.1.3. Illegal smartphone use while driving

The dependent variable, illegal smartphone use while driving, was measured by asking, “In the last 31 days, have you ever used your mobile phone in a manner that is not permitted by your licence type?” Responses were measured on a 5-point Likert scale (1 = Never; 2 = Sometimes; 3 = About half the time; 4 = Most of the time; 5 = Always). For this study the variable was dichotomized (i.e., 0 = No illegal smartphone use; 1 = Illegal smartphone use).

2.2. Data analysis

All statistical analyses were conducted using IBM SPSS v 28. Descriptive statistics were conducted (Table 1) to describe the sample. Bivariate correlations (Table 2) were conducted to explore the relationships between age groups, gender, nomophobia (as a continuous scale) and illegal smartphone use while driving.

A one-way between-groups analysis of variance (ANOVA) was conducted (Table 3) to explore the differences between frequency of illegal smartphone use while driving (1 = Never; 2 = Sometimes; 3 = About half the time; 4 = Most of the time; 5 = Always) and nomophobia severity as measured using a continuous scale ranging from 20 to 140.

A binomial logistic regression (Table 4) was conducted to explore the key factors associated with illegal smartphone use while driving, including age, gender, and nomophobia severity categories (≤20 = absence, 21–59 = Mild, 60–99 = Moderate, 100–140 = Severe).

3. Results

Table 1 contains participant demographics and nomophobia scores. The age groups were representative of Victoria’s total population demography as per March 2019 (Australian Bureau of Statistics, 2019). Gender was relatively evenly spread, with 1469 (53%) of respondents identifying as female. For illegal smartphone use while driving, 1027 (37%) participants self-reported engaging with their devices in a manner that their licence type did not permit, while 1746 (63%) reported they had not engaged with their devices illegally. Measuring the distribution of nomophobia across each of its four severity categories, most participants’ (n = 1347, 48.6%) nomophobia level was classified as ‘moderate’.

Looking to nomophobia as a continuous scale (20–140), the median score was 69 (SD = 25.1, Range = 120). Nomophobia was unevenly distributed (tests of normality returned a significant Kolmogorov-Smirnov value, suggesting a violation of the assumption of normality; Skewness 0.27, Kurtosis -0.50). Therefore, in addition to determining the correlation between illegal use and nomophobia as a continuous scale (Table 2), bivariate analyses were conducted and the Pearson product-moment correlation coefficient (r) was presented on age, gender, nomophobia as a scale, and illegal use.

All variables were significantly correlated. There was a strong negative correlation between illegal use while driving and age, meaning that younger age groups were more likely to report that they had
engaged in illegal use while driving. There was a strong positive correlation between nomophobia and illegal use, meaning drivers engaging in illegal use tended to have higher levels of nomophobia. There was also a small negative relationship between nomophobia and gender, meaning that women tended to have higher levels of nomophobia. Table 2 shows the basic assumption for a binomial logistic regression was met.

To explore the differences between frequency of illegal smartphone use while driving and nomophobia severity, a one-way between-groups ANOVA was conducted (Table 3). The results showed statistically significant differences between nomophobia levels across each category of illegal smartphone use while driving: $f(4, 2768) = 87.13, p < 0.001$. The effect size was calculated using eta squared: 0.11. Post-hoc comparisons using the Tukey HSD test revealed the nomophobia scores of those who ‘Never’ use their device were significantly lower than all other frequencies of use. Similarly, those who ‘Sometimes’ use their device had significantly lower nomophobia scores than all other frequencies. For those using their devices ‘About Half the Time’, ‘Most of the Time’, and ‘Always’, differences in nomophobia means were only statistically significant when compared to ‘Never’ and ‘Sometimes’.

A binomial logistic regression was conducted (Table 4) which explored the key factors associated with illegal smartphone use while driving. The model was statistically significant, $X^2(7) = 543.051, p < 0.001$, explaining 24.3% (Nagelkerke $R^2$) of the variance in illegal use, and correctly classified 63% of cases.

The results showed all predictors were statistically significant. When compared to younger drivers (18–25 years), older drivers (60+) were 92% less likely to engage in illegal smartphone use while driving, 40-59-year-olds were 70% less likely, and 26-39-year-olds were 42% less likely than 18-25-year-olds to engage in illegal smartphone use.

Gender was also a significant predictor, with men 20% more likely to engage in illegal use while driving compared to women.

Nomophobia severity was a significant predictor of illegal use while driving. When compared to participants reporting ‘severe’ nomophobia, participants with an absence of nomophobia were 85% less likely to engage in illegal smartphone use while driving. Those with mild nomophobia were 69% less likely, and those with moderate nomophobia were 45% less likely. In other words, when compared with participants that did not have nomophobia, the odds of engaging in illegal use among those with severe nomophobia increased by a factor of 6.6. When compared with mild nomophobia, the odds of engaging in illegal use among those with severe nomophobia increased by a factor of 3.2, and when compared to moderate nomophobia, the odds of engaging in illegal use among those with severe nomophobia increased by a factor of 1.8.

### Table 2

Pearson product-moment correlation coefficient ($r$) matrix between age, gender, nomophobia scale, and illegal smartphone use while driving ($n = 2773$).

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender</th>
<th>Nomo (scale)</th>
<th>Illegal Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25</td>
<td>.32**</td>
<td>-.33**</td>
<td>-.39**</td>
</tr>
<tr>
<td>26-39</td>
<td>.23*</td>
<td>-.153*</td>
<td>-.067*</td>
</tr>
<tr>
<td>40-59</td>
<td>-.33**</td>
<td>-.153*</td>
<td>-.304*</td>
</tr>
<tr>
<td>60+</td>
<td>-.39**</td>
<td>-.067*</td>
<td>.304*</td>
</tr>
</tbody>
</table>

*p < 0.001.

### Table 3

ANOVA Frequency of illegal smartphone use and nomophobia level ($n = 2772$).

<table>
<thead>
<tr>
<th>Freq. of Use</th>
<th>Nomo (Scale) (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>63.29 (23.50)</td>
</tr>
<tr>
<td>Sometimes</td>
<td>75.60 (24.06)</td>
</tr>
<tr>
<td>About Half the Time</td>
<td>87.45 (20.63)</td>
</tr>
<tr>
<td>Most of the Time</td>
<td>86.80 (23.02)</td>
</tr>
<tr>
<td>Always</td>
<td>90.20 (25.61)</td>
</tr>
</tbody>
</table>

### Table 4

Binomial regression using nomophobia severity categories to predict the likelihood of illegal smartphone use while driving ($n = 2773$).

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>p</th>
<th>Odds Ratio</th>
<th>95% CI for Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-25 (ref)</td>
<td>–</td>
<td>–</td>
<td>286.37</td>
<td>3</td>
<td>&lt;.001</td>
<td>1</td>
<td>1.000–1.000</td>
</tr>
<tr>
<td>26-39</td>
<td>–.54</td>
<td>.13</td>
<td>17.25</td>
<td>1</td>
<td>&lt;.001</td>
<td>.58</td>
<td>.45–.75</td>
</tr>
<tr>
<td>40-59</td>
<td>–1.2</td>
<td>.12</td>
<td>92.37</td>
<td>1</td>
<td>&lt;.001</td>
<td>.30</td>
<td>.24–.40</td>
</tr>
<tr>
<td>60+</td>
<td>–2.47</td>
<td>.16</td>
<td>252.46</td>
<td>1</td>
<td>&lt;.001</td>
<td>.08</td>
<td>.06–.12</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>.22</td>
<td>.09</td>
<td>5.64</td>
<td>1</td>
<td>&lt;.05</td>
<td>1.2</td>
<td>1.04–1.48</td>
</tr>
<tr>
<td>Female (ref)</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Nomophobia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absence</td>
<td>–1.88</td>
<td>.76</td>
<td>6.12</td>
<td>1</td>
<td>&lt;.05</td>
<td>.15</td>
<td>.034–.68</td>
</tr>
<tr>
<td>Mild</td>
<td>–1.16</td>
<td>.14</td>
<td>67.33</td>
<td>1</td>
<td>&lt;.001</td>
<td>.31</td>
<td>.24–.41</td>
</tr>
<tr>
<td>Moderate</td>
<td>–.59</td>
<td>.13</td>
<td>20.45</td>
<td>1</td>
<td>&lt;.001</td>
<td>.55</td>
<td>.43–.71</td>
</tr>
<tr>
<td>Severe (ref)</td>
<td>–</td>
<td>–</td>
<td>74.87</td>
<td>3</td>
<td>&lt;.001</td>
<td>3.23</td>
<td>––</td>
</tr>
<tr>
<td>Constant</td>
<td>1.17</td>
<td>.14</td>
<td>66.98</td>
<td>1</td>
<td>&lt;.001</td>
<td>3.23</td>
<td>––</td>
</tr>
</tbody>
</table>
women, the social and cultural paradigm may contribute to normative pressures to be available and sociable, while and the usefulness of the device for functions we will discuss contribute to their higher daily use times, a factor that significantly increases the likelihood of nomophobia (Kara, Baytemir, & Inceman-Kara, 2021).

This current study found that severe nomophobia renders drivers 85% more likely than drivers without nomophobia to break smartphone laws while driving. Our study found 13% of smartphone users with a valid Victorian driver’s licence experienced severe nomophobia. Smartphone use while driving negatively impacts road safety (Stavrinos et al., 2013), therefore, given the results of a recent meta-analysis found the prevalence of severe nomophobia globally was 20.81% (Humood et al., 2021), our findings become significant for road users around the world, especially in low to middle income countries where 90% of road traffic deaths occur (World Health Organization, 2018). Younger people (17-25-years-old) are over-represented in road trauma statistics (Department of Infrastructure, 2021b). They are also more likely than any other age group to engage with their devices illegally while driving (Kaviani et al., 2020a; Transport Accident Commission, 2019). Developing educational and/or behavioural programs that address nomophobia may contribute to reducing the annual 1.35 million road traffic deaths (World Health Organization, 2018). This issue is ever more pressing as new studies are revealing strong associations between COVID-19 and increased smartphone use and dependency (David & Roberts, 2021; Parent, Dadgar, Xiao, Hesse, & Shapka, 2021; Yam, Korkmaz, & Griffiths, 2021). Several approaches have been successful in reducing nomophobia. Mindfulness, a process of being attentive and present in the moment (Baer, 2003), can reduce nomophobia (Arpaci, Baloglu, & Kesici, 2019) and the likelihood of nomophobia becoming problematic (Arpaci & Gundogan, 2020; Fletcher & Sarkar, 2013; Regan et al., 2020). Mindfulness has also been shown to reduce distracted driving (Young et al., 2019) and increase road safety more broadly (Kass, VanWormer, Mikulas, Legan, & Bumgarner, 2011; Koppel et al., 2019). But our findings should be considered with prudence.

Several factors exist that may be confounding the relationship between, and disproportionate representation of, young people’s nomophobia severity and illegal smartphone use while driving. As with many psychological scales, the NMP-Q was designed to measure a participant’s fear of being without their smartphone but does advance knowledge in explaining the social pressures or antecedents of an individual’s need to always be with their device (Sallis, Owen, & Fisher, 2008). The results of this study, however, demonstrated the usefulness of employing the NMP-Q’s categories to explore nomophobia’s relationship with dangerous smartphone behaviours such as illegal smartphone use while driving.

As our previous study cautioned, the need to be with a smartphone can be a rational response to the expectations associated with living in a networked society, where specific social and structural demands increase the need to be perpetually available (Kaviani et al., 2020). We showed how merely increasing one factor of nomophobia—the fear of being without information—could predict the likelihood of illegal use while driving (Kaviani et al., 2020a). The desire for information arises from instances of uncertainty; increasing uncertainty increases the need for information (Carleton, 2016). Indeed, recent research has shown that an intolerance to uncertainty increases nomophobia (Ercengiz, Yildiz, Savci, & Griffiths, 2020). Therefore, managing precarities or fostering a greater tolerance to uncertainty should be part of any mechanism to mitigate nomophobia or illegal smartphone use. Reducing the fear of being without required reducing increasing pressures to be with, pressures that are often imbued and entangled throughout the scaffolding of society that also disproportionately impact women and younger people. Interventions should engage the socio-ecological model as advocated by road safety authorities that recognises all factors within the

1 As of 2016.

5 Conclusion

This study found that nomophobia severity predicted the likelihood of illegal smartphone use while driving. The impact, measured by category (mild, moderate, severe), was a useful measure, the results of
which should be considered in unison with our previous research into the predictive value of each nomophobia factor. The fear of being without a smartphone is a risk to road safety. Because nomophobia permeates and is impacted by individual, social, cultural, and structural factors, the development of programs aimed toward encouraging healthy and safe smartphone use should align with the socio-ecological model. Interventions should exercise caution by focusing less on individual pathologies and more on external social and structural factors impacting need to be with smartphone.

Appendix A

The 20 items in the NMP-Q.

Factor I – Not being able to communicate
If I did not have my smartphone with me,
10. I would feel anxious because I could not instantly communicate with my family and/or friends
11. I would be worried because my family and/or friends could not reach me
12. I would feel nervous because I would not be able to receive text messages and calls
13. I would be anxious because I could not connect in touch with my family and/or friends
14. I would be nervous because I could not know if someone had tried to get a hold of me
15. I would feel anxious because my constant connection to my family and friends would be broken

Factor II – Losing connectedness
If I did not have my smartphone with me,
16. I would be nervous because I would be disconnected from my online identity
17. I would be uncomfortable because I could not stay up-to-date with social media and online networks
18. I would feel awkward because I could not check my notifications for updates from my connections and online networks
19. I would feel anxious because I could not check my email messages
20. I would feel weird because I would not know what to do

Factor III – Not being able to access information
1. I would feel uncomfortable without constant access to information through my smartphone
2. I would be annoyed if I could not look information up on my smartphone when I wanted to do so
3. Being unable to get the news (e.g., happenings, weather, etc.) on my smartphone would make me nervous
4. I would be annoyed if I could not use my smartphone and/or its capabilities when I wanted to do so

Factor IV – Giving up convenience
5. Running out of battery in my smartphone would scare me
6. If I were to run out of credits or hit my monthly data limit, I would panic
7. If I did not have a data signal or could not connect to Wi-Fi, then I would constantly check to see if I had a signal or could find a Wi-Fi network
8. If I could not use my smartphone, I would be afraid of getting stranded somewhere
9. If I could not check my smartphone for a while, I would feel a desire to check it

References