Event-Level Predictors of Alcohol-Impaired Driving Intentions

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ABSTRACT. Objective: Alcohol-impaired driving is a significant public safety concern and is highly prevalent among young adults. Considerable research has examined between-person predictors of alcohol-impaired driving, but there has been little research on factors that predict alcohol-impaired driving at the event level. This pilot/feasibility study was designed to identify within-person, event-level predictors of alcohol-impaired driving intentions in the natural environment using an ecological momentary assessment (EMA) design. **Method:** Thirty-six young adult, moderate drinkers (*M* age = 22.9 years; 72.2% female; *M* drinks per occasion = 3.2) were recruited from a university area to complete 2 weeks of EMA. They reported on their subjective levels of intoxication, perceived dangerousness of driving, and driving intentions during real-world drinking episodes. Breath alcohol concentrations were collected with a portable breath alcohol analyzer. **Results:** Event-level perceived danger and subjective intoxication most strongly predicted intentions to drive after drinking, such that higher perceived danger and intoxication predicted lower willingness to drive, after adjusting for baseline alcohol-impaired driving attitudes ($ps < .001$). When we accounted for perceived danger during drinking episodes at the event and person level, baseline attitudes were no longer predictive of willingness to drive. Higher event-level breath alcohol concentration also predicted lower willingness to drive ($p = .003$). **Conclusions:** This study is the first to demonstrate that event-level risks of alcohol-impaired driving can be collected during drinking episodes in the natural environment. Findings indicate that subjective perceptions of intoxication and risk more strongly predict alcohol-impaired driving intentions than objective intoxication. Findings also suggest that event-level perceptions of intoxication and driving risk may be fruitful targets for interventions to reduce alcohol-impaired driving. (*J. Stud. Alcohol Drugs, 81,* 647–654, 2020)

ALCOHOL-IMPAIRED DRIVING is a significant public safety concern, responsible for 29% of all vehicle crash deaths annually. Although deaths caused by alcohol-impaired driving have declined substantially over the past four decades, rates have stagnated since the late 1990s (National Highway Traffic Safety Administration [NHTSA], 2017). Young adult drivers between ages 21 and 34 are involved in the majority of alcohol-impaired vehicle fatalities (NHTSA, 2016), and approximately 3 million individuals ages 21 to 25 endorse alcohol-impaired driving each year (Center for Behavioral Health Statistics and Quality [CBHSQ], 2018). Explicating the factors that lead young adults to make risky driving decisions when drinking is an important focus for research.

There is considerable evidence that variability in person-level traits is associated with an increased risk of alcohol-impaired driving. Trait risk factors include binge drinking (Flowers et al., 2008), delay discounting (Rossow, 2008), impulsivity (Pedersen & McCarthy, 2008), sensation seeking (Jonah, 1997), normative beliefs (Grube & Voas, 1996), and general attitudes toward alcohol-impaired driving (Turrisi & Jaccard, 1991). As the decision to engage in alcohol-impaired driving necessarily occurs while impaired by alcohol, studies have explored whether variability in these traits under intoxication better predicts decision making about alcohol-impaired driving. Alcohol intoxication increases impulsivity (Fillmore, 2003; Fillmore et al., 2008), and greater increases in impulsivity under intoxication may increase the risk for alcohol-impaired driving (McCarthy et al., 2012). Alcohol intoxication has also been shown to alter the perceived danger of risky behaviors (Davis et al., 2007; Fromme et al., 1997, 1999; Maisto et al., 2002), including alcohol-impaired driving (Morris et al., 2014). Importantly, laboratory studies have shown that individual differences in perceptions of alcohol-impaired driving assessed under intoxication are better predictors of alcohol-impaired driving intentions and behaviors than these same perceptions assessed when sober (Morris et al., 2014) or under placebo (Amlung et al., 2014).

In contrast to this literature on trait-level predictors, relatively few studies have explored event-level predictors of alcohol-impaired driving. Several field studies have investigated event-level characteristics of alcohol-impaired driving decision making in the natural environment, examining characteristics of designated drivers' alcohol consumption at drinking venues (Barry et al., 2013; Voas et al., 2013) or using a one-time phone survey during a drinking event to identify predictors of driving attitudes and intentions (MacDonald et al., 1995). To our knowledge, only one event-level study on within-person predictors of alcohol-impaired driving has been published (Quinn & Fromme, 2012). Using retrospective daily diary reports, Quinn and Fromme (2012) found that drinking more alcohol than usual, coupled with feeling less subjectively intoxicated, predicted a greater likelihood of driving after drinking. Importantly, event-level

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predictors were significant after the researchers adjusted for person-level differences in drinking quantity (estimated blood alcohol concentration [BAC]) and sensation seeking. This research suggests that event-level consumption and subjective intoxication play a role in individuals' decisions to engage in alcohol-impaired driving. However, there is a clear need for additional studies that examine within-person, event-level predictors of alcohol-impaired driving prospectively.

The present study was designed to fill a critical gap in the literature on event-level predictors of alcohol-impaired driving, using a prospective design and ecological momentary assessment (EMA) to collect real-time assessments during drinking events in the natural environment. EMA offers a number of advantages over both field studies and laboratory designs, capturing drinking behavior under unconstrained conditions (Piasecki, 2019; Shiffman, 2009), using repeated assessments to examine within-person variability, and incorporating situational and contextual factors that likely influence alcohol-impaired driving decisions. In the current study, participants completed EMA assessments over a 2-week period and reported on their perceived levels of intoxication, dangerousness of driving, and willingness to drive (intentions) during real-world drinking episodes. A portable breath alcohol analyzer (BACtrack® Breathalyzers/KHN Solutions Inc., 2018) was used to collect information on alcohol consumption. This study served as a pilot study for a clinical trial designed to collect real-time data on individuals' alcohol-impaired driving intentions in the natural environment and to test the feasibility of a novel breath alcohol analyzer feedback intervention to reduce alcohol-impaired driving.

Based on previous laboratory studies (Amlung et al., 2014; Morris et al., 2014), we hypothesized that higher momentary perceived danger and subjective intoxication would be associated with lower willingness to drive after drinking. In addition, we hypothesized that momentary predictors would be incrementally predictive of real-world driving intentions over baseline predictors, given that momentary predictors were measured under the acute effects of alcohol and in contexts in which actual alcohol-impaired driving decisions are made.

Method

Participants

Participants were recruited from a midwestern university and the surrounding area via flyers and informational mass emails to students. Eligibility criteria were being ages 21–30, having consumed alcohol at least 2 days per week and at least four drinks on at least one occasion within the past month, having had access to a car and drove regularly, and having lived at least 1 mile away from their typical drinking locations.

Forty-six participants completed the study. The final sample (*N* = 36) included participants who achieved 50% or greater EMA compliance. (Results on the full sample were similar and are available in Supplementary Table A. Supplemental material appears as an online-only addendum to this article on the journal's website.) Participants were 72.2% female; 86.1% White, 5.5% Black, and 8.3% multiracial/other; and, on average, 22.9 years old (*SD* = 1.9). Sample characteristics are displayed in Table 1.

Baseline measures

Alcohol-impaired driving attitudes and behavior. Perceived dangerousness of driving after drinking was assessed separately for three consumption amounts (one, three, or five drinks within a 2-hour period) using a 1 (*not at all dangerous*) to 4 (*very dangerous*) visual analogue scale (Amlung et al., 2014; Grube & Voas, 1996). Past alcohol-impaired driving behavior was assessed with open-ended self-report items on the number of times in the past 3 months and in the past year that participants drove after consuming one, three, and five drinks within a 2-hour period.

EMA measures

Drink quantity. Participants reported on the number of standard drinks they had consumed up to the point of the assessment (evening reports) and the total number of drinks consumed the day prior (morning reports).

Breath alcohol concentration (BrAC). BrAC was assessed using the BACtrack® Mobile Pro portable breath alcohol analyzer (BACtrack® Breathalyzers/KHN Solutions Inc., 2018). This device has been shown to have good agreement with standard breath alcohol analyzer devices, with a slight bias toward overreporting BrAC (bias = .008 g/dl, 95% CI [.0062, .0096]; Riordan et al., 2017).

Subjective intoxication. Perceived level of intoxication was assessed by asking participants to indicate how intoxicated they felt "right now" on a 1 (*not at all intoxicated*) to 10 (*more intoxicated than you've ever been*) visual analogue scale.

Perceived danger. Perceived dangerousness of driving was assessed by asking participants to indicate how dangerous they felt it was for them to drive "right now" on a 1 (*not at all dangerous*) to 10 (*extremely dangerous*) visual analogue scale.

Driving intentions. Driving intentions were assessed by asking participants whether they would be willing to drive based on how they felt "right now," using a dichotomous response scale (0 = *no;* 1 = *yes*).

Driving behavior. Morning reports collected information on how participants returned home after drinking, including driving, riding with someone else, walking, biking, or using a taxi/ride service or public transit.

TABLE 1. Participant and drinking characteristics at baseline and during EMA period

Participant characteristics	*M* (*SD*)	Range
Drinking in past 30 days		
Number of drinking days	11.09 (6.21)	2–30
Number of drinks per day	3.24 (1.35)	1–6
Number of binge drinking days	4.23 (4.13)	0–20
Maximum number of drinks in a single day	7.09 (2.86)	3–14
Age obtained driver's license, in years	16.17 (0.75)	14–18
Years driving	6.74 (2.17)	3–12
Baseline perceived danger of driving after drinking	2.67 (0.74)	1.04–4.00
Past 3 months, times driven after drinking		
1 drink	5.54 (3.95)	0–15
3 drinks	1.51 (2.17)	0–10
5 drinks	0.49 (1.77)	0–10
Past year, times driven after drinking		
1 drink	20.03 (17.54)	3–72
3 drinks	4.14 (5.69)	0–25
5 drinks	1.23 (3.29)	0–15
EMA period	*M* (*SD*)	Range
Number of drinking days	4.94 (2.79)	1–12
Subjective intoxication	2.75 (1.22)	1.00–5.39
Perceived danger of driving	3.28 (1.74)	1.00–8.17
BrAC	0.042 (0.033)	0.001–0.156

Notes: EMA = ecological momentary assessment; BrAC = breath alcohol concentration. EMA variables reported are between-person averages for drinking moments only (e.g., average subjective intoxication across drinking moments).

Procedure

Because of the sensitive information collected in this study, participants were informed about measures to protect their confidentiality (secure data storage, code numbers to de-identify data) before completing a phone screening and again during informed consent. All procedures were approved by the university Institutional Review Board.

Laboratory sessions. Participants visited the laboratory for a 3-hour baseline session. Participants completed baseline measures, demographics, and other measures not relevant to the present study. Experimenters then oriented participants to the EMA protocol. Participants were issued an iPhone 5SE with the TigerAware application, a customizable survey application designed at the University of Missouri (Morrison et al., 2018), and a portable breath alcohol analyzer. Experimenters provided demonstrations on how to respond to survey prompts, initiate prompts, and use the breath alcohol analyzer. After completing the EMA period, participants returned to the laboratory and were debriefed. Participants were compensated $15/hour for laboratory sessions and $30/week for EMA.

Ecological momentary assessment protocol. Participants completed EMA for 14 days. They were instructed to complete morning reports daily and evening reports four times daily when prompted at 6:00 P.M., 8:00 P.M., 10:00 P.M., and 12:00 midnight. Participants had flexibility to self-initiate drinking reports if they occurred before 6:00 P.M. and to put devices to sleep when going to bed before 12:00 midnight. Participants were instructed to initiate morning reports when they woke up and were prompted at 12:00 noon if they had not yet completed their morning report.

Evening report questionnaires varied depending on whether participants reported drinking. When participants reported drinking, their drink quantity, subjective intoxication, perceived driving danger, and driving intentions were assessed. When participants denied drinking, they completed filler items on mood to equate the length of assessment time. Participants were prompted to provide breath alcohol analyzer samples at all evening/drinking reports. Instructions were to rinse with water and not drink for 15 minutes before sampling (to minimize residual mouth alcohol). Participants did not have access to their BrAC readings.

Breath alcohol analyzer intervention. This study was preregistered with ClinicalTrials.gov (NCT03503396) to (a) assess momentary predictors of driving intentions after drinking and (b) pilot feasibility of a novel breath alcohol analyzer feedback intervention. The current study reports on the first aim of the study. For the second aim, participants were randomly assigned to one of two BrAC feedback conditions. Findings for the current study did not differ based on feedback condition, and, therefore, condition was dropped from analyses.

Data analytic strategy

Drinking moments (assessed in evening reports) were nested within participants[1] and were analyzed using general-

[1]Modeling a 3-level model with drinking events nested within days, nested within participants, indicated too little variability at the day-level (ICC = .433 vs. 2-level ICC = .390), and therefore a 2-level nesting structure was selected.

TABLE 2. Predictors of alcohol-impaired driving intentions during drinking events (GLMMs)

Model	BrAC			Subjective intoxication			Perceived danger		
Predictor	*b*	[95% CI]	*t*	*b*	[95% CI]	*t*	*b*	[95% CI]	*t*
Female sex	0.06	[-1.81, 1.92]	0.06	-0.02	[-1.96, 1.91]	0.02	-0.54	[-3.33, 2.25]	0.40
Baseline driving attitudes	-2.01*	[-3.49, -0.53]	2.76	-2.25*	[-3.79, -0.72]	2.99	-0.34	[-2.33, 1.64]	0.35
Person-level predictor	-0.09	[-0.34, 0.17]	0.71	-0.66	[-1.47, -0.15]	1.65	**-2.27***	[-3.60, -0.94]	3.48
Momentary predictor	**-0.43***	[-0.72, -0.14]	2.96	**-1.49****	[-2.01, -0.98]	5.70	**-1.83****	[-2.87, -0.79]	3.47

Notes: Table displays unstandardized betas for predictors of intentions to drive after drinking during real-world drinking events (1 = *willing to drive;* 0 = *unwilling to drive*). Generalized linear mixed models (GLMMs) included person-level (between-subjects) and momentary (within-subjects) breath alcohol concentration (BrAC), subjective intoxication, and perceived dangerousness of driving, modeled separately. Significant slopes denoted in **bold** indicate variables that were incrementally predictive of driving intentions after adjusting for sex and baseline driving attitudes.
*$p \leq .01$; **$p \leq .001$.

ized linear mixed models (GLMMs) with PROC GLIMMIX in SAS Version 9.4 (SAS Institute Inc., College Station, TX). Logistic mixed models predicting willingness to drive were estimated via maximum likelihood (with Laplace approximation) and included empirical sandwich estimates for small sample bias correction. Because of multicollinearity among momentary predictors (rs $\geq$ .60), BrAC, subjective intoxication, and perceived danger were examined in separate models. BrAC was transformed to an interpretable scale by multiplying raw values by 100 so that slope values corresponded to 0.01% increases in BrAC (x-value) from the mean.

Baseline alcohol-impaired driving attitudes (perceived dangerousness of driving after consuming three drinks[2]) and biological sex were entered as level-2 predictors of driving intentions into a random-intercept model. Person-centered (within-subjects) and sample-centered (between-subjects) predictors were entered to examine whether they predicted real-world driving intentions after adjusting for baseline driving attitudes. Random slopes for momentary subjective intoxication or perceived danger did not significantly improve model fit, Δ-2 log likelihood χ^2s(2) $\leq$ 3.69, ps $\geq$ .16, and were dropped for parsimony. A random slope for BrAC was retained due to improved model fit, $\Delta\chi^2(2) = 13.75$, $p = .001$. Driving intentions were modeled such that an odds ratio less than 1 indicated lower willingness to drive. Odds ratios with 95% CIs were used as measures of effect sizes.

We also conducted exploratory analyses on associations between the frequency of actual driving after drinking during the EMA period and average (between-person) levels of BrAC, subjective intoxication, and perceived danger. Although these analyses were underpowered in the pilot study, they were outlined as exploratory analyses in the clinical trial preregistration. Between-subjects predictors were entered into separate Poisson regressions as predictors of the total number of times participants drove home after drinking during the EMA period. Analyses were conducted using PROC GENMOD.

[2]Perceived danger of driving after three drinks was used as the baseline predictor in all models because of its greater variability across participants.

Results

Compliance

Full compliance was completion of three evening reports daily (42 total) to avoid penalizing participants for going to bed before the last assessment. Excluding participants with less than 50% data (n = 10), the sample completed an average of 13.2 morning reports (SD = 1.4, range: 7–14, total observations = 476) and 37.8 evening reports (SD = 10.0, range: 20–65, total observations = 1,361). Average compliance was 72% and 69% for morning and evening reports, respectively.

Preliminary analyses

Drinking moments included 255 of 1,361 (18.7%) evening reports. BrAC was collected at 94.1% of these reports. One participant had no drinking events and therefore did not contribute to the analyses. A null model on driving intentions revealed an ICC of .390, indicating sufficient within-person variability and the appropriateness of a multilevel modeling approach. During the 14-day EMA phase, participants drank on an average of 4.91 days (SD = 2.76). When restricted to during drinking moments only, they reported willingness to drive 65.1% of the time.

Predictors of driving intentions

Table 2 presents slopes for GLMMs predicting driving intentions. Sex was not associated with driving intentions in any models. Baseline driving attitudes predicted real-world driving intentions, such that a one-unit increase in baseline perceived dangerousness of driving after drinking predicted a 76% decrease in the odds of willingness to drive, b = -1.42, $t(32)$ = 3.10, OR = 0.24, CI [0.10, 0.61].

Momentary BrAC incrementally predicted driving intentions over baseline driving attitudes, such that a .01% increase in BrAC predicted a 21% decrease in the odds of willingness to drive (OR = 0.79, CI [0.67, 0.94]) (Supplementary Figure A). Momentary subjective intoxication also

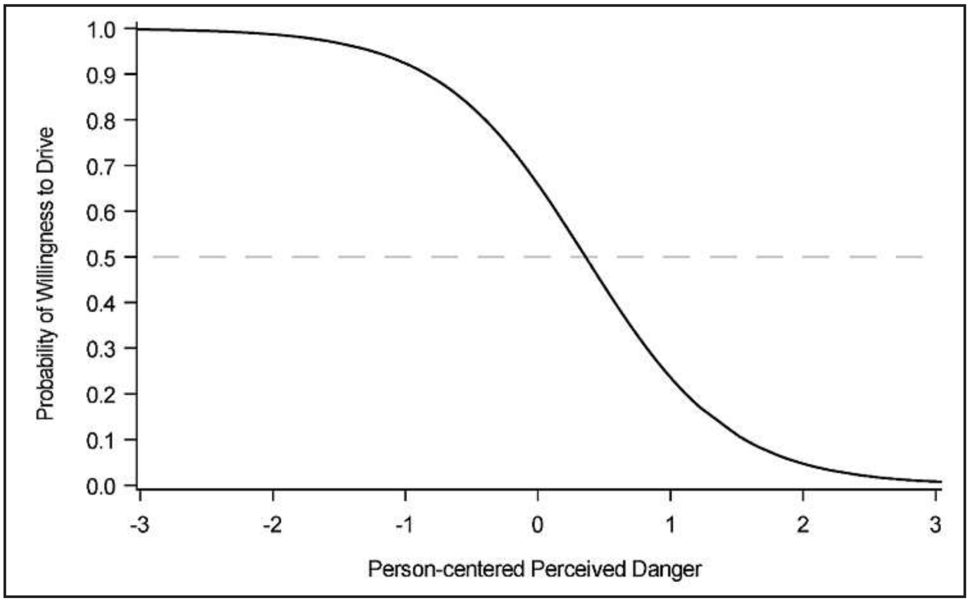

FIGURE 1. Probability plot of driving intentions (1 = *willing to drive*; 0 = *unwilling to drive*) as a function of momentary perceived danger of driving (person-centered, higher values indicate greater perceived danger). Plot displays effects averaged across participants and shows that as momentary perceived danger increased, intentions to drive after drinking decreased.

incrementally predicted driving intentions over baseline attitudes, such that a one-unit increase in subjective intoxication predicted a 77% decrease in the odds of willingness to drive (OR = 0.23, CI [0.13, 0.38]) (Supplementary Figure B). Average BrAC and subjective intoxication levels across drinking events did not predict driving intentions.

Momentary perceived danger was strongly and uniquely predictive of driving intentions above baseline attitudes, such that a one-unit increase in perceived danger predicted an 84% decrease in the odds of willingness to drive (OR = 0.16, CI [0.06, 0.45]) (Figure 1). Average EMA perceived danger also strongly predicted driving intentions, such that a one-unit increase in perceived danger across drinking events predicted a 90% decrease in the odds of willingness to drive (OR = 0.10, CI [0.03, 0.39]). When accounting for perceived danger during actual drinking events, baseline attitudes were no longer significantly associated with real-world driving intentions. Across models, EMA-perceived danger was most strongly predictive of real-world driving intentions, compared to the model with level-2 predictors only, Δ-2 log likelihood $\chi^2(2) = 162.82$, followed by subjective intoxication, $\Delta\chi^2(2) = 95.79$, and BrAC, $\Delta\chi^2(2) = 46.27$.

Exploratory analyses

When participants reported drinking the night prior, they reported that they did drive home 21.1% (40 of 189 days) of the time. In Poisson regressions, baseline attitudes, average BrACs, and average levels of subjective intoxication were not associated with actual driving behavior after drinking, Wald χ^2s = 0.00–1.51, *p*s ≥ .22. Higher average levels of perceived danger were marginally, but not significantly, related to fewer driving events after drinking, $b = -0.20$, $SE = 0.11$, CI [-0.41, 0.01], Wald $\chi^2 = 3.36$, $p = .067$.

Discussion

The current study is the first to demonstrate that event-level risk factors for alcohol-impaired driving can be collected in unconstrained drinking environments and, crucially, to translate findings from between-subjects studies on alcohol-impaired driving to within-person, momentary risk factors. Our results indicate that event-level BrAC, subjective intoxication, and perceived dangerousness of driving are associated with momentary driving intentions during real-world drinking episodes. These findings are consistent with prior studies (Amlung et al., 2014; Morris et al., 2014; Quinn & Fromme, 2012) and extend this work by demonstrating that intentions to drive are predictably more likely at moments when individuals feel less intoxicated and safer to drive.

We found that momentary subjective judgments were the strongest predictors of young adults' alcohol-impaired driving intentions, markedly more so than concurrently assessed BrAC level. Per se laws, which define the legal limit for driving in terms of measured BAC, have been among the most effective legislative efforts to reduce alcohol-impaired driving (for a review, see Tippetts et al., 2005). These laws are predicated on the assumption that people can estimate their BAC before deciding whether to drive, but studies suggest that individuals underestimate their BAC at high levels of consumption (Grant et al., 2012). In real-world alcohol-impaired driving decisions, young adults rarely have access to their current BAC, and our results support the inference that they instead rely on subjective judgments to inform their decisions. Individuals' judgments about their BAC levels are frequently inaccurate (Aston & Liguori, 2013), and BAC underestimation may contribute to risky decisions to drive after drinking (Beirness, 1987). Perceptual influences on driving risk may not be limited to merely engagement in alcohol-impaired driving, but riskier driving behaviors, amplifying risk (Laude & Fillmore, 2016).

Other prevention efforts (e.g., mass media campaigns, high visibility enforcement) have targeted alcohol-impaired driving attitudes by emphasizing the dangers and likelihood of negative consequences (e.g., Shults et al., 2001). Although these efforts have been highly successful in changing perceptions of and engagement in alcohol-impaired driving, they likely operate earlier in the decision-making process, prompting decisions to plan ahead, for example, by obtaining a safe ride/alternative to avoid negative consequences (e.g., planning to use a ride-sharing service to get home on New Year's Eve, when law enforcement is known to have a large presence). However, these interventions are less likely to alter momentary perceptions of risk, including perceptions of intoxication or driving dangerousness while drinking. In fact, we found that baseline attitudes, a robust trait-level predictor of alcohol-impaired driving (Grube & Voas, 1996; Morris et al., 2014; Turrisi & Jaccard, 1991), no longer predicted participants' driving intentions once momentary perceptions of danger were included in our models.

To more effectively prevent alcohol-impaired driving, we need to understand how individuals make in-the-moment judgments about their intoxication levels and impairment. Some individuals may plan at drinking onset not to drink to the point of compromising their ability to drive home and, after drinking more than anticipated, adjust their driving intentions based on their momentary perceptions of intoxication and risk. There is surprisingly little research on how individuals determine their subjective levels of intoxication (Celio et al., 2014). Some research suggests that perceptions of subjective intoxication depend on motor and cognitive cues (Celio et al., 2014), contextual influences (Corbin et al., 2015), and whether BAC is rising or falling (Comley & Dry, 2020), but additional research is needed. By measuring subjective experiences and driving intentions in the natural environment, this study provides a necessary first step toward uncovering when and how individuals' intentions to not drink and drive fall apart.

Because of the relatively brief EMA data collection period in this pilot/feasibility study, few alcohol-impaired driving events occurred during the study period, and we instead focused on driving intentions as the primary outcome. Intentions operate as a critical link between attitudes and behavior (Bagozzi, 1981) and occur immediately before risk-taking behaviors. Intentions may therefore provide insight into the proximal causes of risky decision making under intoxication. A post hoc analysis indicated that average EMA driving intentions were positively associated with the frequency of alcohol-impaired driving behavior over the past 3 months (negative binomial regression predicting driving after consuming three drinks in 2 hours; $b = 2.22$, $SE = 0.88$; Wald $\chi^2 = 6.38$, $p = .01$), supporting intentions as a potential proxy for behavior. Replicating the present findings with a larger sample and an extended EMA data collection period is an important direction for future research, as this will capture more alcohol-impaired driving events.

An additional limitation of this study was EMA compliance rates, which were slightly lower than those generally found in substance-related EMA studies (Jones et al., 2019). Although our findings were robust and were replicated among the full sample, we may have missed some drinking events even among our compliant participants, and we cannot be certain that these data were missing at random.

Overall, our findings indicate an important role for mobile technology in dissecting the complexities of alcohol-impaired driving decisions. Future studies should consider assessing additional individual (e.g., motives), social (e.g., drinking group composition), and contextual (e.g., drinking location, day of the week) factors that may influence perceptions of subjective intoxication, perceived danger, and alcohol-impaired driving decision making. EMA methods have also been applied as behavioral interventions (i.e., ecological momentary interventions [EMIs]; Heron & Smyth, 2010), targeting alcohol use in addition to other health behaviors and symptoms. To our knowledge, existing mobile-based interventions for reducing alcohol-impaired driving are limited to brief behavioral interventions (Teeters et al., 2018) and mobile applications that estimate users' BrACs (although these are limited in accuracy and effectiveness, see review by Wilson et al., 2016). Future research is necessary to determine the role of mobile technologies in reducing alcohol-impaired driving in naturalistic environments—for instance, by providing prompts to increase perceptions of the dangerousness of impaired driving during drinking episodes or by providing BrAC feedback to increase awareness of one's level of intoxication.

This study joins broader efforts to identify which between-person predictors of alcohol use and risky behavior translate to within-person processes of behavior (Lewis et al., 2020; Lydon-Staley et al., 2020). Such designs allow researchers to more effectively disentangle distal versus proximal predictors and discern how these processes may unfold within individuals. Moving forward, studies that can effectively characterize not only for whom but also when and under what circumstances drinking leads to risky decision making may be best positioned to inform intervention efforts.

Conflict-of-Interest Statement

Co-author Timothy J. Trull is co-developer of TigerAware LLC, a software platform used in designing and conducting ambulatory assessment studies. TigerAware LLC neither had a funding role in nor received any compensation for the present research.

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