Was wir zu wissen glauben: What we think we know:
Überprüfung der Wirksamkeit Providing evidence of
von (Web-)Interventionen (Web-)Interventions on
bei Alkoholkonsum Acohol consumption

Emmanuel KUNTSCHE
1. Example: Personalized Normative Feedback (more than 10 empirical studies only in 2014; more than 10 reviews in the last 2 decades) These interventions are working soundly (?)

2. Example: Web-based Interventions (WDYD) are not effective (?)

Recommendations

However… (no good deed remains unpunished!)

A look in the crystal ball
TEASER (CONTENT)

1. Example: Personalized Normative Feedback (more than 10 empirical studies only in 2014; more than 10 reviews in the last 2 decades) These interventions are working soundly (?)

2. Example: Web-based Interventions (WDYD) are not effective (?)

Recommendations

However… (no good deed remains unpunished!)

A look in the crystal ball
1. **Example: The Most Effective Intervention**

- Brief intervention;
- personalized normative feedback

1. Example: The Most Effective Intervention

- Brief intervention;
- personalized normative feedback

---

Young people’s overestimation of peer substance use: an exaggerated phenomenon?

Hilde Pape
Norwegian Institute for Alcohol and Drug Research, Oslo, Norway

ABSTRACT

Aims This paper queries the notion that young people overestimate peer substance use, asking whether there is robust evidence that such misperceptions are widespread and whether the phenomenon may have been exaggerated in the research literature. Method An examination of the research literature was conducted, focusing mainly on studies published since 2000. Some analyses of relevant data on cannabis use from a Norwegian youth survey were also undertaken. Results The research in question is characterized by many weaknesses, including low response rates and widespread use of convenience samples, as well as the presence of contextual factors and the use of assessment tools that may have created a bias in favour of ‘demonstrating’ that youth overestimate peer drinking or drug use. Moreover, in some cases, the apparent tendency to hold such misbeliefs may reflect the reality. Further, although most studies conclude that the modal tendency is to overestimate, high levels of underestimation of peer substance use have been reported. There is also suggestive evidence that many youth may have no pre-existing beliefs when responding to items on the issue. Results from the Norwegian youth survey added to this picture. Conclusion Young people’s tendency to overestimate peer drinking and drug use has been exaggerated, while the uncertainty surrounding the evidence in question has been understated.

Keywords Alcohol, drugs, methodological problems, norms misperception, validity issues, young people.
1. Example: The Most Effective Intervention

- Brief intervention;
- personalized normative feedback

1. **Example: The Most Effective Intervention**

- **Brief intervention**
- **Personalized normative feedback**

### Recall Bias Due to Memory Deficits

<table>
<thead>
<tr>
<th>Alter</th>
<th>14</th>
<th>15</th>
<th>14</th>
<th>15</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rauchen</td>
<td>19.3%</td>
<td>31.2%</td>
<td>26.2%</td>
<td>37.9%</td>
<td>24.5%</td>
<td>38.7%</td>
</tr>
<tr>
<td>Drogen</td>
<td>22.1%</td>
<td>32.8%</td>
<td>21.1%</td>
<td>30.1%</td>
<td>20.0%</td>
<td>31.8%</td>
</tr>
<tr>
<td>Trunkenheit</td>
<td>71.7%</td>
<td>84.8%</td>
<td>36.1%</td>
<td>52.7%</td>
<td>60.7%</td>
<td>77.9%</td>
</tr>
<tr>
<td>Verhalten der Schülerinnen</td>
<td>72.9%</td>
<td>84.4%</td>
<td>31.5%</td>
<td>49.5%</td>
<td>60.9%</td>
<td>74.8%</td>
</tr>
</tbody>
</table>

1. Example: The Most Effective Intervention

- Brief intervention
- Personalized normative feedback

<table>
<thead>
<tr>
<th>Age</th>
<th>Smoking (Boys)</th>
<th>14</th>
<th>15</th>
<th>Smoking (Girls)</th>
<th>14</th>
<th>15</th>
<th>Drug Use (Boys)</th>
<th>14</th>
<th>15</th>
<th>Drug Use (Girls)</th>
<th>14</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>19.3%</td>
<td>20.2%</td>
<td>27.1%</td>
<td>31.2%</td>
<td>37.9%</td>
<td>31.9%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>22.1%</td>
<td>21.1%</td>
<td>27.1%</td>
<td>32.8%</td>
<td>30.1%</td>
<td>31.8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>71.7%</td>
<td>71.1%</td>
<td>77.9%</td>
<td>44.8%</td>
<td>52.7%</td>
<td>77.9%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>72.9%</td>
<td>72.3%</td>
<td>73.3%</td>
<td>31.5%</td>
<td>37.3%</td>
<td>71.5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ALCOHOL CONSUMPTION ASSESSED RETROSPECTIVELY (30 DAYS) AND IN THE EVENING CELL PHONE STUDY

ALCOHOL CONSUMPTION ASSESSED RETROSPECTIVELY (30 DAYS) AND IN THE EVENING CELL PHONE STUDY

ALCOHOL CONSUMPTION ASSESSED RETROSPECTIVELY (30 DAYS) AND IN THE EVENING CELL PHONE STUDY

Recall bias depends on drinking habits and patterns, i.e. how much is consumed when.

Changing drinking habits in the Intervention groups potentially also changes recall bias in comparison to the control group (over and above Hawthorne effects, questionnaire-behavior effects etc.: McCambridge et al., 2011, 2014a, 2014b, 2015)


McCambridge, J. (2015). From question-behaviour effects in trials to the social psychology of research participation. Psychology and Health, 30(1), 72-84.
Recall bias depends on drinking habits and patterns, i.e. how much is consumed when.

Changing drinking habits in the Intervention group potentially also changes recall bias in comparison to the control group (over and above Hawthorne effects etc.: McCambride et al., 2011, 2014a, 2014b, 2015).


McCambridge, J. (2015). From question-behaviour effects in trials to the social psychology of research participation. Psychology and Health, 30(1), 72-84.

- Very well conceived and conducted web-based brief alcohol intervention among heavy drinking students
- However, **no effect** at 1- and 6-month post-intervention
- What has happened?
  1. Tiny effect sizes
  2. High fluctuations in the ‘natural’ occurrence of alcohol consumption


DRINKING TRAJECTORIES FROM THURSDAY TO SATURDAY FOR ALL EVENINGS (AVERAGED SCORES) AND FOR FOUR RANDOMLY SELECTED SETS OF WEEKENDS

Is the WDYD intervention not successful?

No, because EMA shows

1. Consistency of effect over time
2. Long-lasting effects
3. Single session on the Internet
4. Convenient and highly time and cost-efficient

Using the appropriate design methodology and analytic approach to detect intervention effects!

In this case: EMA and LGC

Is the WDYD intervention not successful?
No, because EMA shows:
1. Consistency of effect over time
2. Long-lasting effects
3. Single session on the Internet
4. Convenient and highly time and cost efficient

Using the appropriate design methodology and analytic approach to detect intervention effects!

In this case: EMA and LGC

iCat
- Internet-Based
- Cell phone-optimized
- Assessment
- Technique


EVENT-LEVEL QUESTIONNAIRES


Dear participant,
Please complete your next questionnaire:
http://study.icat.org/xk85hoga
Thanks for your participation!

Dear participant,
Please complete your next questionnaire:
http://study.icat.org/xk85hoga
Thanks for your participation!


EVENT-LEVEL QUESTIONNAIRES


Event-level questionnaires


EVENT-LEVEL QUESTIONNAIRES


EVENT-LEVEL QUESTIONNAIRES


**EVENT-LEVEL QUESTIONNAIRES**


RECOMMENDATION:
USE SMARTPHONE-BASED EMA FOR THE EVALUATION OF INTERVENTION TRIALS!!

- Cost efficient and relatively easy to implement
- Provides ‘information in context’
  (high ecological validity)
- Accounts for fluctuations in the ‘natural’ occurrence of alcohol consumption
- Provides insights into the progression (fading?) of the treatment effect
- …and its consistency over time

RECOMMENDATION:

Use smartphone-based EMA for the Evaluation of Intervention Trials!!

- Cost efficient and relatively easy to implement
- Provides ‘information in context’ (high ecological validity)
- Accounts for fluctuations in the ‘natural’ occurrence of alcohol consumption
- Provides insights into the progression (fading?) of the treatment effect
- ...and its consistency over time

The future is now—using personal cellphones to gather data on substance use and related factors

Most of what is known in substance use research is based on retrospective answers in paper-and-pencil questionnaires or given online or in telephone interviews. Current smartphone technology, however, opens virtually unlimited possibilities for collecting data in real-time and real-life situations, including sounds, pictures or locations, and with (almost) no recall bias.

For more than a century, the vast majority of insights into personal substance use were gathered by asking participants to report their behaviour retrospectively by ticking boxes in paper-and-pencil questionnaires and, increasingly nowadays, through online data-gathering methods. Gathering data with retrospective recall is considered cost-efficient and convenient, but it largely underestimates substance use in a given population. For example, survey estimates reproduce only 30–70% of the total per capita alcohol consumption compared with sales statistics [1,2]. The fact that heavy substance users tend to be under-represented in surveys was suggested as one reason for this underestimation [1]. Another reason is that, due to memory deficits, people tend to remember only part of the amounts consumed [1,3]. Such a recall bias can be present after only a couple of days [4].

SPREAD AND UBIQUITOUS FEATURES OF SMARTPHONES

In the last decade, cellphones have emerged as powerful data collection devices. First, cellphone ownership and use has proliferated globally. In 2013, 6.8 billion cellphone subscriptions were active world-wide, 96.2 subscription per 100 inhabitants overall, with 128.2 per 100 in developed countries and 89.4 per 100 in developing countries [11]. Cellphone subscriptions exceeded landline telephone connections by a factor of 5.8 (i.e. 1.2 billion landline telephone connections) and 2.1 billion cellphone subscriptions even include mobile-broadband internet access.

Secondly, most people carry a cellphone with them permanently and are familiar with its functions. Using personal cellphones, repeated measurements can thus be accomplished independently of time and location in a convenient manner, up to the point that they become part of the participants’ everyday activities.

Thirdly, smartphones combine the functionalities of any portable telephone (calls, SMS, etc.) with those of both multiple connectivity systems (mobile internet access, Bluetooth, WiFi, etc.) and hand-held computers (high-capacity data storage, e-mailing, web-browsing, installation of third-party software, etc.). Thus, in addition to being reachable almost any time and anywhere, smartphones provide a state-of-the-art data collection interface. Particularly dedicated applications (apps) have been used increasingly in mobile health-care manage-
It appears that besides technical challenges the main limitation for a more intensive use of this technology in the area of substance use is researchers’ hesitation. Combining self-reports with GPS coordinates, sounds, pictures and videos are today just one fingertip away from drawing a more complete picture of what is actually happening before, during and after people’s substance use behaviours, captured in the heat of their everyday life.
HOWEVER, BE AWARE OF...

- ethical requirements such as
  - Full disclosure
  - Voluntary participation at any time in any kind
  - Data storage safety
- questionnaire-behavior effects (Jim McCambridge)
  - Repeated measures increase bias or decrease bias (habit)?
  - Solomon 4-group design (6-group; x-group)
  - Increasingly cost demanding


McCambridge, J. (2015). From question-behaviour effects in trials to the social psychology of research participation. Psychology and Health, 30(1), 72-84.
WHAT THE FUTURE MAY BRING…

- More work on mediators, moderators and third-variables
  - Testing those can be challenging when using EMA

- Combining intervention trials with
  - True in-the-event assessment, i.e. in real time
  - ‘Objective’ data (Breathalizers, GPS etc.)
  - Experimental data (bar lab, taste-rating etc.)
  - Qualitative interviews
Young people's outgoing and drinking behaviors on weekend nights

Mobile sensing

Ubiquitous computing

Institutes

Research domains

Research objectives

Methods

Human geography

Qualitative interviews

Smartphone data collection tool development

Questionnaire assessments

Alcohol epidemiology

Urban structure, moving patterns, visited drinking locations, people's experiences and views

Dept. of Geography, University of Zurich
THANK YOU VERY MUCH FOR YOUR ATTENTION!

EKUNTSCHIE@ADDICTIONSUISSE.CH

SDSDFSDF