The Internet: New ways to deliver and access effective health care?

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Acknowledgements

- Francis Kay-Lambkin, Maree Teesson and Amanda Baker
- Sally Rooke and Jan Copeland
- Lucy Burns, Natasha Sindich and Jenny
Summary

- First part of talk will explore potential for new technology to deliver prevention and treatment interventions

- Second part will briefly explore darker side of new technology and its use to access new types of drugs.
The potential of e-health approaches

- Treatment can be accessible at times and in locations that suit clients
- May reduce stigma associated with treatment
- Clients can work at their own pace, tailoring the provision of information and strategies
- May be able to circumvent some of the challenges of treatment access - Particularly for comorbidity
Where do new technologies fit in

- Prevention Interventions
- Stand alone interventions
- Interventions that screen
- Interventions done alongside contact with service
Cautious issues I

- Nearly 200 different sites on Google (Farrell personal search 2012)
- Generally structured around Social learning theory with CBT and MI
- Variable quality of presentation and quality of interaction and feedback
- Many not inviting and resulting in high rates of non-completion
- Young people rarely spend more than 5 minutes on a single site
Cautious Issues II

- How do sites fit into other sources of help
- What advice or information on evidence based treatment and guides for seeking more formal help
- Need for clarity about how internet assessment of serious or severe disorder enables access to information on pathways to formal help
Different ways to access target population

- Bibliotherapy and mailed treatments work
- Young people not taking up existing services often
- Scale of problem and interventions required way in excess of current or future human services
- Brief interventions modest effect has to date been poorly utilized
RCTs of E-health interventions for...

- Depression
- Panic disorder
- Chronic tension/migraine
- Trauma
- Insomnia
- Obesity
- Complicated grief
- Eating Disorders
- Alcohol Problems
Web links for access to available sites

Alcohol and Cannabis

e-Chug (Steiner, Woodall & Yeagley, 2005)
Drinker's Check-Up (Hester, Squires & Delayne 2005)
Down Your Drink (Linke, Brown & Wallace, 2004)
SHADES (drinking and mood) NDARC

Cannabis Germany Quit the shit http://www.drugcom.de 2004
Denmark SMASH http://smash.name 2006 No No
Netherlands JellinekLive Online Behandeling
Cannabis (Treatment Online)
www.jellinek.nl/hulp/content.php?
Cannabis Onder Controle www.cannabisondercontrole.nl
Grip op gras www.gripopgras.nl
Gambling
Check Dein Spiel
Sluta Spela
Spillbehandling

Mental health
Anxiety Online
Fear Fighter (panic and phobia; Hayward, MacGregor, Peck & Wilkes, 2007)
Interapy (trauma, mourning, burnout, etc.; see e.g. Lange, van de Ven & Schrieken, 2003)
MoodGym (depression; Christensen, Griffiths & Jorm, 2004)

Smoking cessation
1-2-3 Smokefree (Swartz, Noell, Schroeder & Ary, 2006)
Happy Ending (Brendryen & Kraft, 2008)
Stop Tabac (Etter, 2005)
Self-help interventions without professional contact to curb adult problem drinking in the community are increasingly being delivered via the Internet.

Methods: In all, 9 randomized controlled trials (RCTs), all from high-income countries, with 9 comparison conditions and a total of 1553 participants, were identified, and their combined effectiveness in reducing alcohol consumption was evaluated by means of a meta-analysis.

Results: An overall medium effect size ($g = 0.44$, 95% CI 0.17-0.71, random effect model) was found for the 9 studies. A significant difference ($P = .04$) emerged between single-session personalized normative feedback interventions ($g = 0.27$, 95% CI 0.11-0.43) and more extended e-self-help ($g = 0.61$, 95% CI 0.33-0.90).

*(J Med Internet Res 2011;13(2):e42)* Heleen Riper$^{1,2,3}$, PhD; Viola Spek$^{3,4}$, PhD; Brigitte Boon$^3$, PhD; Barbara Conijn$^3$, MSc; Jeannet Kramer$^3$, PhD; Katherina Martin-Abello$^3$, MA; Filip Smit$^{3,5}$, PhD
To quantify the overall effectiveness of computer-delivered interventions for alcohol and tobacco use.

Meta-analysis of 42 effect sizes from randomized controlled trials, based on the responses of 10,632 individuals.

RESULTS: The weighted average effect size (d) was 0.20, P < 0.001. While lower effect sizes were associated with studies addressing tobacco use (d = 0.14) this may well reflect differences in the types of outcome measure used.

Findings of the meta-analysis suggest that minimal contact computer-delivered treatments that can be accessed via the internet may represent a cost-effective means of treating uncomplicated substance use and related problems.


- Computer-aided psychotherapy (CP) is said to (1) be as effective as face-to-face psychotherapy, while requiring less therapist time, for anxiety disorder sufferers, (2) speed access to care, and (3) save traveling time. CP may be delivered on stand-alone or Internet-linked computers, palmtop computers, phone-interactive voice response, DVDs, and cell phones. The authors performed a meta-analysis of 23 randomised controlled studies (RCTs) that compared CP with non-CP in anxiety disorders: phobias, n = 10; panic disorder/agoraphobia, n = 9; PTSD, n = 3; obsessive-compulsive disorder, n = 1.

- Overall mean effect size of CP compared with non-CP was 1.08 (95% confidence interval: 0.84-1.32). CP and face-to-face psychotherapy did not differ significantly from each other (13 comparisons, d = -0.06). Much caution is needed when interpreting the findings indicating that outcome was unrelated to type of disorder, type of comparison group, mode of CP delivery (Internet, stand-alone PC, palmtop), and recency of the CP system and that effect size decreased when more therapist time was replaced by the computer. Because CP as a whole was as effective as face-to-face psychotherapy, certain forms of CP deserve to be integrated into routine practice.

The SHADE Project

- Project run in collaboration with Centre for Rural and Remote Mental Health (rural and urban)
- Target depression (and co-occurring alcohol use, cannabis use problems)
- Use CBT
- Compare face-to-face treatment with computer treatment (SHADE) with supportive treatment (PCT)
- Follow-up people up for 3 years
- Frances Kay-Lambkin, Amanda Baker, Brian Kelly, Terry Lewin, Vaughan Carr
Contacted (n=617)

Baseline assessment & one-session (N=274)

Randomized (N=274)

Excluded (n=300)
- Ineligible (n=244)
- Refused (n=54)
- Did not attend (n=47)

Therapist-delivered CBT/MI (n=88)
- 15 week follow-up (n=57, 65%)
- 6 month follow-up (n=56, 64%)
- 12 month follow-up (n=57, 65%)
- 24 month follow-up (n=40, 46%)

Clinician-assisted SHADE (n=97)
- 15 week follow-up (n=59, 61%)
- 6 month follow-up (n=62, 64%)
- 12 month follow-up (n=57, 59%)
- 24 month follow-up (n=37, 38%)

Person Centered Therapy (n=89)
- 15 week follow-up (n=47, 53%)
- 6 month follow-up (n=48, 54%)
- 12 month follow-up (n=50, 56%)
- 24 month follow-up (n=55, 44%)
Depression

Percentage reduction in depressive symptoms relative to baseline

- Therapist-delivered CBT/MI
- Clinician-assisted SHADE
- PCT (control)

No change

50% reduction
**Binge drinking**

Percentage reduction in binge drinking frequency

- Therapist-delivered CBT/MI
- Clinician-assisted SHADE
- PCT (control)

Baseline - Baseline - 6 months - Baseline - 12 months - Baseline - 24 months - Baseline - 36 months

No change
Alcohol use

Percentage reduction in alcohol consumption relative to baseline

- Therapist-delivered CBT/MI
- Clinician-assisted SHADE
- PCT (control)

No change

50% reduction
10 Week Program

Let's introduce you to Rob now. When you have finished, or to skip this step, click on one of the modules listed on the right hand side to start the SHADE 10 week program.

Click on the play button to start the movie

Main Menu
Welcome To The SHADE Skills Menu

Click on one of the modules listed on the menu below that best suits where you would like to start.

- My Story So Far
- Rethinking Alcohol or Other Drug Use
- Getting Moving Again
- Reducing Alcohol or Other Drugs
- Taking Charge of Your Thoughts
- Allowing and Letting Things Be
- Solving Problems
- Staying Well
- Review of Progress

Back To Last Page
Back To Main Menu
Randomised Controlled Trial of a Web-Based Intervention for Cannabis Use
Sally Rooke, Jan Copeland, Melissa Norberg,

Reduce your use:
How to break the cannabis habit

My Documents

MY FEEDBACK
• My self assessment (Module 1)
• My nominated change dates
  + more feedback...

DOCUMENTS
• Coping with triggers & self reward
• Challenging automatic thoughts
  + more documents...

FACTSHEETS
• What is cannabis?
• Cannabis potency
  + more factsheets...

SPECIAL STUDIES
• Subconscious thoughts and IAT
• Coping Skills
  + more studies...

MODULES (PDF)
• Module 6
• Module 5
  + more module pdfs...

MODULES (VIDEO)
• Module 6
• Module 5
  + more module videos...

My self assessment – Module 1
You said that you smoke an average of 18 joints per week.
This is equal to an average of 939 joints per year.

Come back to this assessment again to get feedback on your change in use since you previously took the assessment.

You also said that you spend an average of $60.00 per week on cannabis.
This is equal to an average expenditure of $3,128.57 per year.

Come back to this assessment again to get feedback on your change in the amount you spend on cannabis since you last took the assessment.

When asked to list the good things about smoking cannabis, you said:
• dhre – 8/10
• u5u – 8/10
Intervention
Climate Schools: Alcohol and Cannabis module

6 lessons of...
- 15 mins computer
- 25 mins class activities
  - Assertion skills
  - Calling for assistance
  - Recovery position
  - Decision making
  - Group discussions

Covering...
- Alcohol guidelines
- Normative use
- Short & long term risks
- Influences of media / peers
- Refusal and minimization skills
- Staying safe & first aid
Climate Schools: Psychostimulant and cannabis module

- Increases in cannabis and psychostimulant knowledge
- Decrease in initiation of ecstasy and recent use
- Decrease harms as a result of psychostimulants
- Decreases in intention to use in the future for cannabis and psychostimulants

Vogl et al. CLIMATE Schools: Cannabis and psychostimulant module.
In Conclusion

- Studies show new technologies have a role to play and evidence of treatment effect sizes similar to existing treatments
- Role for BI with cannabis, tobacco, alcohol and stimulants
- Role for mental health and comorbidity interventions
- Role for prevention and early intervention
Future Developments

- Is there a role for international and cross cultural studies
- What issues need to be considered
- How will such technologies assist in improving access to care
- Will this become a poor alternative to decent care,
- How do we ensure good development and appropriate context for new technologies
This is an exciting and major growth area for development, and new voice activation technologies and other computing and imaging technologies make exploration in this area very important.

However, no clear social or business model or critical health or social context consensus currently available to guide development.
How do we monitor trends in Australia?

Population surveys

Secondary indicator data sources e.g. Causes of death database, Emergency Department presentations, criminal statistics

Targeted sample surveys
- The Ecstasy and Related Drugs Reporting System (EDRS) - NDARC

Other technologies
Currently synthetic cannabinoids and other EPS are not detected in our population surveys.
The Ecstasy and Related Drugs Reporting System (EDRS) is a three component annual monitoring project that involves:

1. Interviews with a sentinel sample of regular ecstasy users across 8 states and territories 2011 N=574
2. Interviews with key experts in the drug and alcohol field
3. Secondary Indicator data sources

- Component 1 & 2 allow the majority of information related to these new emerging drugs.
While emerging psychoactive substances may be sold in traditional shopfronts, they are increasingly marketed and sold globally via the Internet.

‘In recent years, the volume of illicit sales of narcotic drugs and psychotropic substances through websites has risen, making the internet a major source of drugs for drug abusers.’

(The international Narcotics Control Board quoted in submission to the Parliamentary Joint Select Committee on Cyber-Safety by the Australian Customs and Border Protection Service, July 2010)
Shop by category:
- Drugs(688)
  - Cannabis(269)
  - Ecstasy(36)
  - Dissociatives(7)
  - Psychedelics(68)
  - Opioids(66)
  - Stimulants(52)
  - Other(100)
  - Benzos(46)
- Lab Supplies(3)
- Digital goods(84)
- Services(47)
- Money(46)
- Weaponry(7)
- Home & Garden(27)
- Electronics(8)
- Books(36)
- Drug paraphernalia(27)
- XXX(26)
- Medical(4)
- Computer equipment(8)
- Art(1)
- Musical Instruments(4)
- Tickets(3)
- Forgeries(10)

$50 Aussie Note! For BitCoin high...
$5.81

10mg 2C-E Powder
$0.34

Codeine - 40 x 10MG Codeine/APAP...
$2.09

Red Joker Ecstasy Pills
Qty:...
$4.00

Syringes, Needles - 30 Guage 1cc/ml...
$2.21

0.5g Masterkush melt/bubble hashish...
$3.19

1-Oz (28g) Purple Kush

Modafinil 100mg tablets in

Alpha Pharma Testobolin
Silk Road

- High traffic - estimates mentioned in the Silk Road online forum ranging between 30,000 and 150,000 customers.

- Sales volume is increasing; USD 1.9 million/month for the entire marketplace, USD 143,000/month in commissions for Silk Road operators.

- Few restrictions on the types of goods sellers can offer.

- “Do not list anything who’s (sic) purpose is to harm or defraud, such as stolen items or info, stolen credit cards, counterfeit currency, personal info, assassinations, and weapons of any kind. Do not list anything related to pedophilia.”

- Silk Road only supports Bitcoin (BTC) as a trading currency. Bitcoin is a peer-to-peer, distributed payment system that allows anonymous transactions between different parties.

Christin, N. Traveling the Silk Road: A measurement analysis of a large anonymous online marketplace. Carnegie Mellon University. Pittsburgh, PA 15213
Table 1: Top 20 categories in terms of items available. Products sold on Silk Road are mostly listed as narcotics or controlled substances.
Origin countries for sellers: drugs purchased through silk road

- U.S.A.: 44%
- Undeclared: 16%
- U.K.: 10%
- Netherlands: 7%
- Canada: 6%
- Germany: 5%
- Australia: 3%
- India: 1%
- Italy: 1%
- China: 1%
- Spain: 1%
- France: 1%
Acceptable destinations for drugs purchased through silk road

- Worldwide: 50%
- U.S.A.: 35%
- European Union: 6%
- Canada: 6%
- U.K.: 4%
- Australia: 3%
- World except U.S.A.: 1%
- Germany: 1%
- Norway: 1%
- Switzerland: 1%
- New Zealand: 1%
- Undeclared: 0%
**Methodology**

- Searches were conducted using a similar procedure to Solberg et al. (2011) (EMCDDA)
- Searches were conducted using Metacrawler, a search engine incorporating results from Google, Yahoo! and Bing.
- General search terms such as ‘Research Chemicals’ and ‘Legal Highs’ were used
- Retailers were excluded if they specifically stated they did not ship to Australia
Internet monitoring of retailers selling to Australia

- **Findings**
  - From preliminary search:
  - 94 retailers were identified selling substances to Australia
  - Around half (46) of the identified retailers sold generic “herbal highs” of which ingredients were unclear, and were not included in the analysis
  - The remaining 48 retailers sold identifiable substances that are largely controlled in Australia
Findings continued

Substances available to Australia included:

- **Phenethylamines** — e.g. Mephedrone, 2C-x family
- **Stimulants** (non-Phenethylamines) — e.g. Synthacaine, DMAA, Ethylphenidate
- **Synthetic Cannabinoids** — e.g. JWH-Family, ‘Kronic’
- **Tryptamines** — e.g. aMT, DMT, 5-IT
- **Dissociatives** — e.g. Salvia Divinorum, 3-MeO-PCP
Stimulant and Psychedelic EPS

>25,000 searches/month

Source: Rosalie Poesiat and Raimondo Bruno, University of Tasmania - Google Insights; Google Adwords

Stimulant and Psychedelic EPS
>25,000 searches/month

Cannabinoid EPS
>65,000 searches/month

Source: Rosalie Poesiat and Raimondo Bruno, University of Tasmania - Google Insights; Google Adwords
Past 6 month use of synthetic stimulants among regular ecstasy users from the EDRS

<table>
<thead>
<tr>
<th>Substance</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>mephedrone</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>methylone</td>
<td>0.5</td>
<td>5</td>
</tr>
<tr>
<td>MDPV</td>
<td>0.5</td>
<td>2</td>
</tr>
<tr>
<td>BZP</td>
<td>5</td>
<td>2</td>
</tr>
</tbody>
</table>

Source: Ecstasy and related Drugs Reporting System (EDRS), NDARC, Sindicich and Burns 2012
New ‘analogue’ drugs—derivatives or substances similar in chemical structure to illegal drugs—are emerging, particularly in sales over the internet.

**Analogue laws: Schedule:** The Criminal Code; Chapter 9: Dangers to the community; Part 9.1: Serious drug offences; Division 314: Drugs, plants, precursors and quantities.

- State and federal laws regarding analogues can sometimes differ
- If the substance is intercepted at the border it falls under federal law
- A substance is a controlled drug if structurally similar to a controlled drug **BUT** only in very specific ways as outlined in the schedule
- This means provisions are ineffective at capturing many analogues that may be extremely similar in structure, but not in ways specified by the schedule

- The trafficable, marketable and commercial quantity for an analogue is the same as that for which the analogue drug relates
- Given the continued appearance of new analogues, there is a continued need to keep adding to the schedule
- Reactive rather than proactive and very confusing
Monitoring Emerging Drug Trends is an important aspect of current activity

Overall Synthetic Cannabinoids are the main substances marketed

Expect to see a range of Stimulants over near future

Currently legislative approach requires better integration and strategic approach