



# A telephone and Internet based treatment programme in Norway



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### Description and pre-post evaluation of a telephone and Internet based treatment programme for pathological gambling in Norway: a pilot study

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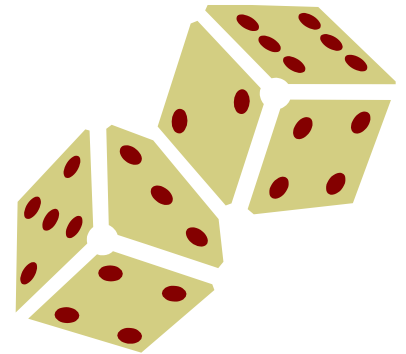
# Aim of the present study

- To conduct a pilot study with a preliminary description and evaluation of this novel treatment approach in terms of its effectiveness



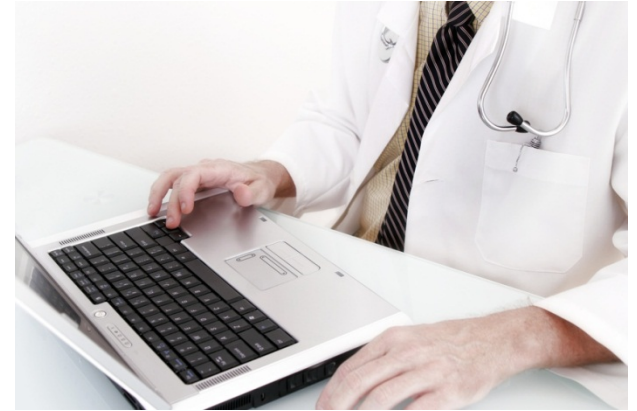
# Background

- Project launched november 2007
- Funded by the Norwegian Ministry of Health
- Only 10% of gamblers seek treatment
  - Due to shame, denial, social inhibition, inconvenience



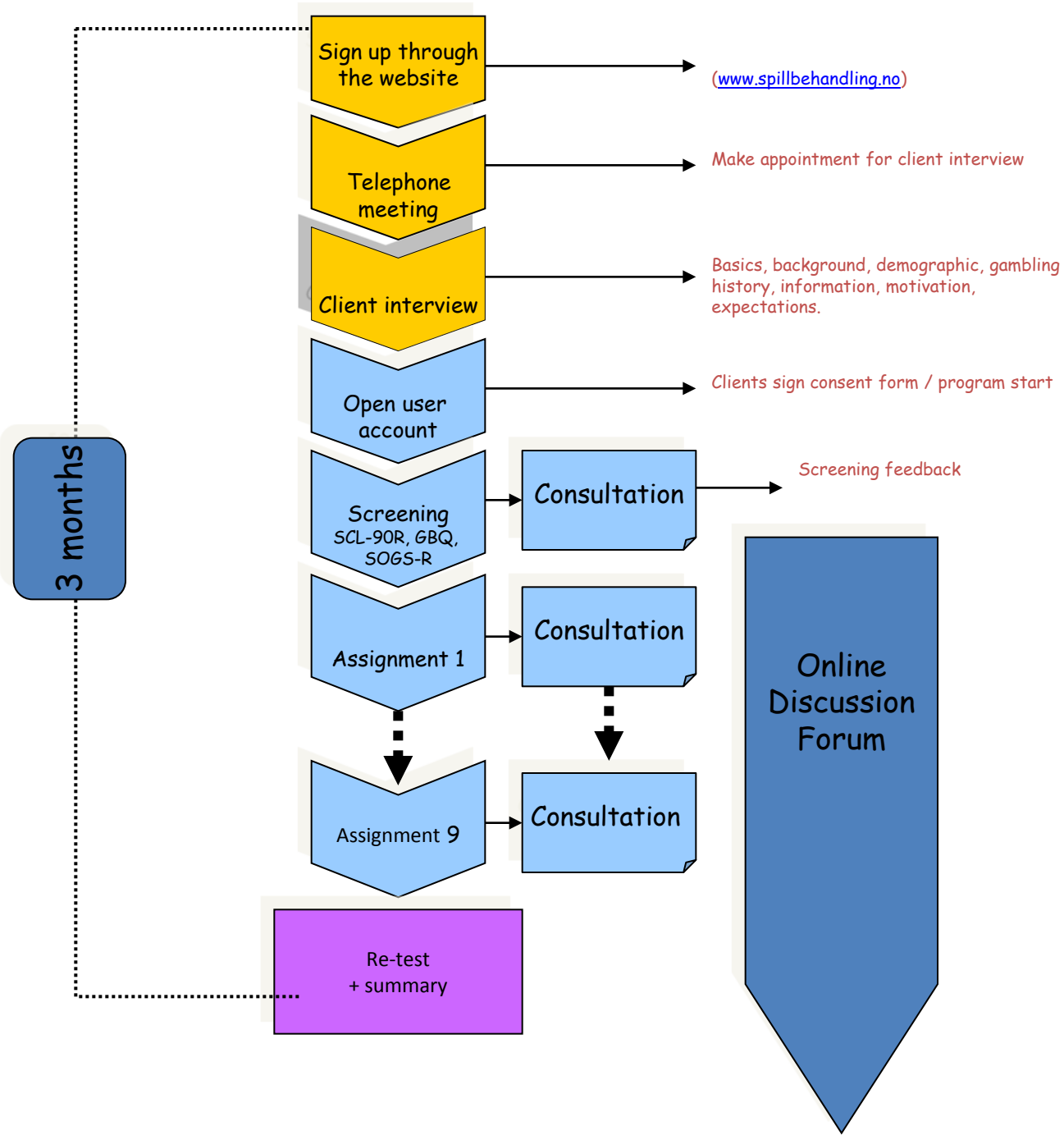
# Advantages of Internet therapy

- Cost-effective
- High accessibility (24/7)
- Lower threshold for treatment seeking?



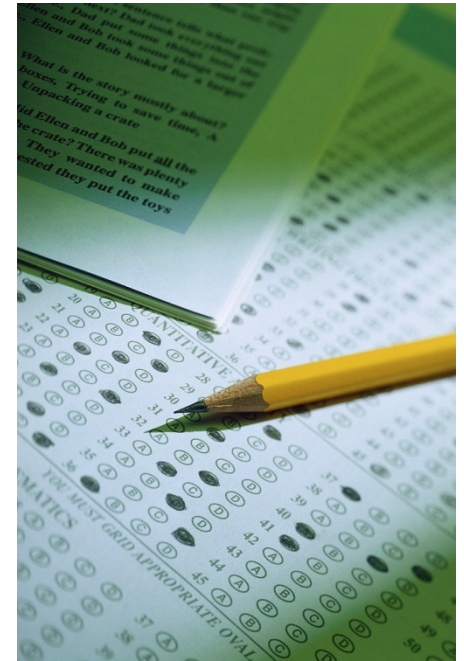
# Treatment

- Participants sign up through the website
- Treatment lasts for approximately three months
- Weekly telephone meetings between the client and the therapist
- Client assignments provide the structure and content for the telephone meetings
- The assignments are based on cognitive behaviour therapy



# Instruments

- SOGS-R
- GBQ
  - Luck/Perseverance
  - Illusion of control
- SCL-90
  - 9 symptom scales
    - (somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism)
  - 3 global indexes
    - (GSI, PST, PSI)





- 422 have signed up
- 25 % drop out, 35% did not start
- 75% men, 25 % women
- Age 16 – 69 (mean age 34,5)
- Majority: Online Casino (slots)
- Other games: Sportsbetting, Bingomachines, horse betting, Online poker.

# Participants

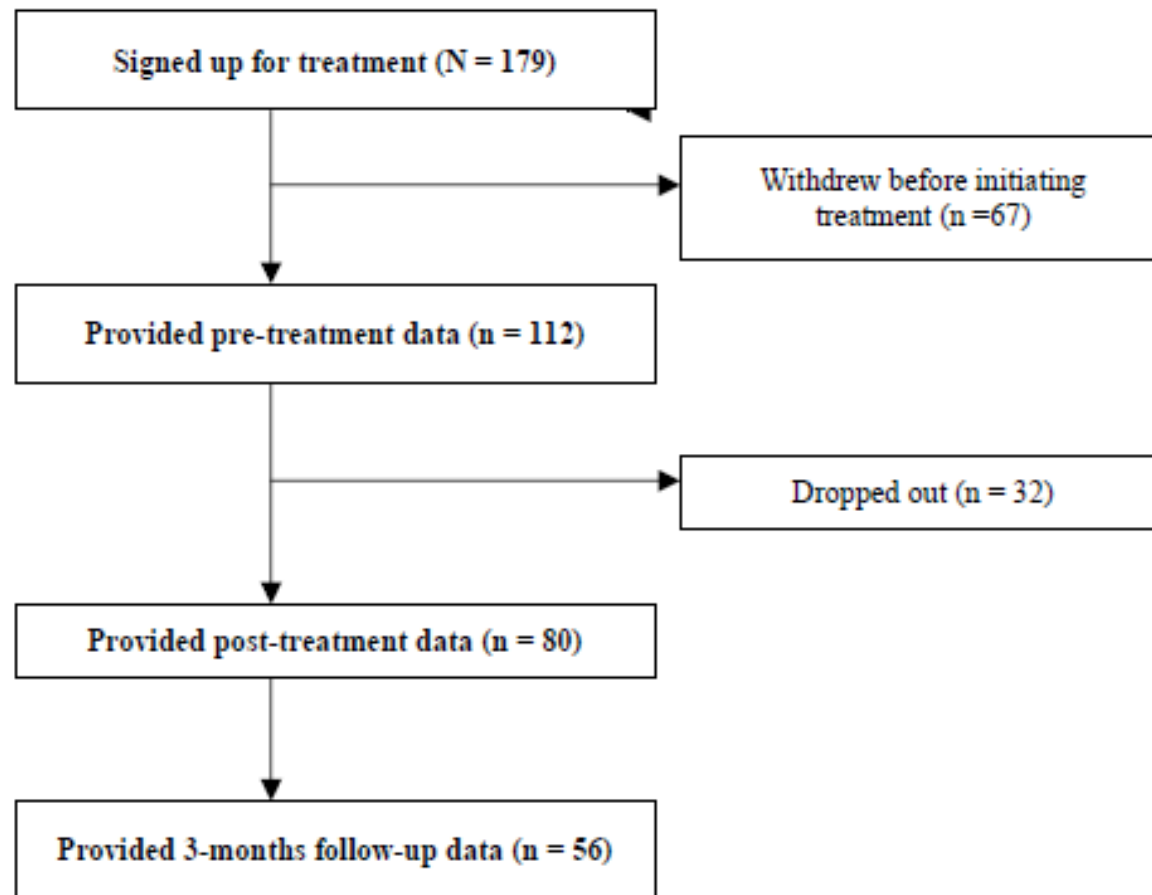


Figure 1. CONSORT flowchart of study participants and drop-out at each stage.

Table 2. Demographic characteristics and gambling severity of the sample at pre-treatment. Differences between completers and drop-outs.

Variables	Completers (n = 80)	Drop-outs (n = 32)	Test of group differences
<b>Age, M (SD)<sup>1</sup></b>	36.99 (10.50)	32.47 (8.92)	$t = - 2.14, p = .034$
<b>Gender Male, n (%)<sup>2</sup></b>	70 (87.5)	25 (78.1)	ns
<b>SOGS-R, M (SD)<sup>1</sup></b>	11.19 (2.81)	11.91 (2.39)	n.s.
<b>GBQ Luck/perseverance</b>	41.89 (18.05)	49.81 (16.77)	$t = - 2.14, P = .034$
<b>GBQ Illusion of control</b>	27.85 (11.76)	33.13 (12.33)	$t = - 2.12, P = .037$
SCL-90 Somatization	0.72 (0.72)	0.68 (0.69)	ns
SCL-90 Obsessive-compulsive	1.08 (0.81)	1.02 (0.76)	ns
SCL-90 Interpersonal sensitivity	0.76 (0.72)	0.80 (0.72)	ns
SCL-90 Depression	1.22 (0.83)	1.16 (0.95)	ns
SCL-90 Anxiety	0.78 (0.70)	0.77 (0.71)	ns
SCL-90 Hostility	0.39 (0.37)	0.50 (0.49)	ns
SCL-90 Phobic anxiety	0.42 (0.65)	0.40 (0.56)	ns
SCL-90 Paranoid ideation	0.64 (0.64)	0.52 (0.54)	ns
SCL-90 Psychoticism	0.43 (0.46)	0.40 (0.48)	ns
SCL-90 GSI	0.76 (0.56)	0.73 (0.56)	ns
SCL-90 PST	41.36 (19.00)	38.90 (21.58)	ns
SCL-90 PSDI	0.60 (0.52)	0.61 (0.48)	ns
<b>Types of gambling</b>			
Online casino, n (%) <sup>2</sup>	34 (42.5)	10 (31.3)	n.s.
EGM, n (%) <sup>3</sup>	9 (11.3)	5 (15.6)	n.s.
Sports betting, n (%) <sup>2</sup>	15 (18.8)	3 (9.4)	n.s.
<b>Poker, n (%)<sup>3</sup></b>	9 (11.3)	13 (40.6)	$p = .001$
Day trading, n (%) <sup>3</sup>	1 (1.3)	0 (0.0)	n.s.
Horse racing, n (%) <sup>3</sup>	12 (15.0)	1 (3.1)	n.s.

**Abbreviations:** M = mean, SD = Standard deviation, n = number, SOGS-R = South Oaks Gambling Screen-Revised, EMG = Electronic gaming machines, ns = not significant

<sup>1</sup>Independent sample *t*-test

<sup>2</sup>Pearson Chi-square test

<sup>3</sup>Fisher's Exact Test

# Results

- Completers vs. Drop-outs

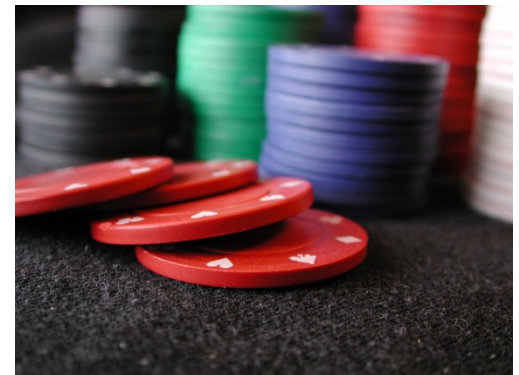
- Drop-outs:

- Lower mean age
    - Greater proportion of poker players



- Are young pokerplayers more likely to drop out from treatment?

- Why?



# Results

- SOGS:
  - Significant reduction from pre- to post-treatment
  - (not significant reduction from post-treatment to follow-up)
- GBQ:
  - Both subscales significant reduction from pre-treatment to post-treatment
- SCL-90:
  - Significant reduction on all symptom dimensions from pre- to post-treatment
  - And on the 3 global indexes (GSI, PST, PSI)

Significant reduction

Table 3. Scores on the secondary outcome measures.

	Pre-treatment	Post-treatment	<i>t</i>	<i>ES</i> (95% CI)
	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )		
<b>GBQ</b>				
Luck/perseverance	44.16 (17.98)	27.22 (17.87)	10.06*	0.95 (-2.38-4.26)
Illusion of control	29.35 (12.11)	20.82 (12.46)	8.91*	0.70 (-1.55-3.00)
<b>SCL-90</b>				
Somatization	0.70 (0.70)	0.41 (0.51)	5.64*	0.48 (0.35-0.57)
Obsessive-compulsive	1.07 (0.79)	0.66 (0.68)	7.37*	0.56 (0.41-0.68)
Interpersonal sensitivity	0.77 (0.72)	0.48 (0.58)	5.73*	0.45 (0.31-0.55)
Depression	1.20 (0.86)	0.66 (0.74)	8.52*	0.68 (0.52-0.81)
Anxiety	0.78 (0.70)	0.41 (0.54)	6.80*	0.59 (0.46-0.69)
Hostility	0.42 (0.41)	0.25 (0.35)	5.30*	0.45 (0.37-0.51)
Phobic anxiety	0.41 (0.62)	0.25 (0.47)	5.08*	0.29 (0.18-0.38)
Paranoid ideation	0.60 (0.62)	0.35 (0.44)	5.87*	0.47 (0.35-0.55)
Psychoticism	0.42 (0.46)	0.24 (0.36)	6.27*	0.44 (0.35-0.50)
GSI	0.75 (0.55)	0.45 (0.45)	7.80*	0.60 (0.50-0.68)
PST	40.82 (19.71)	26.52 (20.19)	9.39*	0.72 (-2.93-4.46)
PSDI	1.16 (0.82)	0.75 (0.66)	7.06*	0.55 (0.40-0.68)

*N* = 112, \**p* < .001, *ES* = Cohen's *d*

# Clinically significant change

Table 4. Clinical significant change.

	Total sample $N = 112$	Completers $n = 80$
<b>Recovered</b> n (%)	65 (58.0%)	65 (81.3%)
<b>Improved</b> n (%)	13 (11.6%)	13 (16.3%)
<b>Not improved</b> n (%)	34 (30.4%)	2 (2.5%)

Table 5. Comparison of gambling types between end state functioning categories.

Types of gambling	Recovered $n = 65$	Not Recovered $n = 47$	$\chi^2$
Online casino	28	16	<i>n.s.</i>
EGM	3	11	8.80*
Sports betting	14	4	<i>n.s.</i>
Poker	9	13	<i>n.s.</i>
Day trading	1	0	<i>n.s.</i>
Horse racing	10	3	<i>n.s.</i>

\* $p < .01$

# Conclusion

- Reduction in symptoms of pathological gambling maintained after 3-6 months after treatment completion
- Reduction in symptoms of general psychological distress
- Fewer cognitive distortions related to gambling after treatment



# Future directions

- Include control/comparison group to control for non-specific treatment effects
- Comparison of face-to-face vs. Internet delivered treatment
- More outcome measures
- Longer follow-up

