# Group therapy with Pathological Gamblers: results during 6, 12, 18 months of treatment

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Putting all the Pieces Together

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# Psychological Interventions

- Gamblers Anonymous
- Psychoanalysis
- Behaviour Therapy
- Cognitive Therapy
- Motivational Therapy
- Multimodal Therapy
- Group Therapy
- Self-help manual

# Aims of the study

- compare the psychopathological differences in a sample of Pathological Gambling matched with a control group

- evaluate the changes in symptomatology, character and  personality, during the 18 months of Group Therapy

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# Tab. I . Socio-demographic data on gamblers and group control

| | PG (n = 63) | CS (n = 52) | |
|---|---|---|---|
| **Sex** | Male       53<br>Female     10 | Male       45<br>Female       7 | |
| **Age** | 41.90 ± 9.9 (range 21-69) | 42.30 ± 9.32 (range 25-70) | |
| **Education**<br>Secondary School<br>High school<br>Degree | <br>38<br>19<br>6 | <br>36<br>13<br>2 | |
| **Marital status**<br>Married<br>Single<br>divorced | <br>25<br>34<br>5 | <br>20<br>25<br>4 | |
| **Social level**<br>middle-lower<br>middle-upper | <br>32<br>31 | <br>26<br>26 | |
| **Smokers** | 48 | 44 | |
| **Drinkers** | 6 (no pathological) | 4 (no pathological) | All differences were not statistically significant. |
| **Pharmacotherapy** | (5 antidepressant, 8 benzodiazepine) | (2 antidepressant, 5 benzodiazepine) | |
| **Duration of the disorder** | 5.27 (± 4.00) Range 1-20 | | |
| **Mean age onset PG** | 36.03 (± 9.68) Range 19-64 | | |

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# Methods

- DSM-IV- criteria
- informed consent

- The inclusion criteria were:
    - a primary diagnosis of PG
    - a duration of PG at list for one year
    - age between 18- 70

- The Exclusion criteria were:
    - presence of psychopathology (psychosis, major depression, manic episode, bipolar disorder)
    - neurological disorder and medical illness
    - personality disorders
    - alcohol and drug abuse

# Assessment

- **Brief Psychiatric Rating Scale (BPRS)** (Overall & Gorham, 1962)
- **South Oaks Gambling Screen (SOGS)** (Lesieur & Blume,1987), scores greater than 5 are used to identify probable pathological gamblers
- **Beck Depression Inventory (BDI)** (Beck et al.,1961)
- **State-Trait Anxiety Inventory) (STAI-Y1; STAI-Y2)** by Spielberger et al., 1983)
- **Barratt Impulsiveness Scale-11 (BIS-11)** by Barratt & Stanford, 1995; Fossati et al., 2001)
- **Temperament Character Inventory (TCI)** by Cloninger et al. 1993, Svrakic et al., 1993; the temperament dimensions are Novelty Seeking (NS), Harm Avoidance (HA), Reward Dependence (RD) and Persistence (P). The character dimensions are Self-Directedness (SD), Cooperativeness (CO), and Self-Transcendence (ST)

# Therapy

- A very experienced group therapist administered the treatment (RDL)

- The first two sessions focused on  the personal information, problems, supplied the tests and explanations of rules to the entrance in group, the composition of the group, and to the setting therapy (residence centre, duration and timetables of frequency, duties and rules to respect, between which those relative to the absences at the sessions and the management of the money by others)

- The last scope of the encounter was "the change in the life style", and the purpose of the treatment was "total abstinence of gaming"

# Treatment (1)

- 2 hours per weekly session (with the single suspension of 3 weeks in the course of the year)

- oriented also to the relatives, whose participation to the group is considered of great importance to the ends of a good resolution of the therapy

- participants discussed the problem related to gambling, couple, family and interpersonal relationship

- The setting aims to modify the relations with oneself and within the family members

# Treatment (2)

- dialogue was the operating instrument used in order to make the awareness of what had not been easily explained orally

- the analysis of the conflict individual-group enabled  to understand  and later to manage the interpersonal relations (De Luca, 2002,2006)

# Statistical methods

- independent two-tailed t-test were used
- results were expressed as means and standard deviation
- a non parametric correlation was calculated by the Spearman coefficient (rho)
- Person's product moment method was used to compute the parametric correlations
- a step-wise regression analysis was conducted
- the dependent variables included: SOGS and BIS-11
- the independent variables included: STAI, BDI, TCI, and demographic variables (age, sex, marital status, education, occupation, onset and duration of illness, pharmacotherapy)

# Tab. II.  Score Differences on PG and CS

| | PG (n=63) | | CS (n=52) | | | | Sig. |
|---|---|---|---|---|---|---|---|
| | MEAN | SD | MEAN | SD | t | df | |
| SOGS | 11.03 | 3.21 | 0.00 | | | | |
| BDI | 16.90 | 8.29 | 3.76 | 3.69 | 11.28 | 89.08 | .000 *** |
| STAI Y-1 | 53.57 | 11.77 | 33.71 | 10.22 | 9.54 | 113 | .000 *** |
| STAI Y-2 | 51.00 | 10.45 | 34.73 | 7.58 | 9.37 | 113 | .000 *** |
| BIS-11 | 71.90 | 10.30 | 51.19 | 8.36 | 11.66 | 113 | .000 *** |
| TCI - NS | 26.00 | 5.36 | 16.92 | 4.52 | 9.68 | 113 | .000 *** |
| TCI - HA | 16.92 | 5.92 | 16.23 | 5.10 | .66 | 113 | NS |
| TCI - RD | 14.57 | 3.09 | 13.36 | 2.59 | 2.23 | 113 | .027 * |
| TCI - P | 4.04 | 1.50 | 3.92 | 1.29 | .47 | 113 | NS |
| TCI - SD | 15.87 | 6.01 | 23.34 | 4.45 | -7.66 | 11.80 | .000 *** |
| TCI - CO | 22.33 | 5.19 | 25.30 | 4.05 | -3.45 | 113 | .001*** |
| TCI - ST | 15.36 | 6.41 | 11.28 | 6.80 | 3.30 | 113 | .001 *** |

* $p<.05$; ** $p<.01$; *** $p<.001$

**SOGS** = South Oaks Gambling Screen; **BDI** = Beck Depression Inventory; **STAI- Y1** = State-Trait Anxiety Inventory Y-1(state); **STAI- Y2** = State-Trait Anxiety Inventory Y-2 (trait); **BIS** = Barrat Impulsiveness Scale; **TCI** = Temperament  Character Inventory (**NS**: Novelty Seeking; **HA**: harm Avoidance; **RD**: Reward Dependence; **P**: Persistence; **SD**: Self-Directedness; **CO**: Cooperativeness; **ST**: Self-Transcendence)

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# Tab. III. Score Differences on PG drop-out – PG Group Therapy at the first measurement

| | PG drop-out (n=30) | PG- Group Therapy (n=33) | | | |
|---|---|---|---|---|---|
| | MEAN (SD) | MEAN (SD) | t | df | Sig. |
| **SOGS** | 10.43 (3.66) | 11.57 (2.67) | 1.40 | 52.63 | NS |
| **BDI** | 16.23 (7.91) | 17.51 (8.70) | .61 | 61 | NS |
| **STAI Y-1** | 52.73 (11.27) | 52.09 (14.92) | .54 | 61 | NS |
| **STAI Y-2** | 49.60 (10.46) | 52.27 (10.43) | 1.01 | 61 | NS |
| **BIS-11** | 72.43 (9.39) | 71.42 (11.18) | -.39 | 61 | NS |
| **TCI - NS** | 25.46 (5.16) | 26.48 (5.57) | .75 | 61 | NS |
| **TCI - HA** | 17.23 (5.65) | 16.63 (6.22) | -.40 | 61 | NS |
| **TCI - RD** | 13.63 (3.41) | 15.42 (2.53) | 2.38 | 61 | .02 * |
| **TCI – P** | 4.20 (1.47) | 3.90 (1.54) | -.76 | 61 | NS |
| **TCI – SD** | 15.36 (5.39) | 16.33 (6.55) | .64 | 61 | NS |
| **TCI – CO** | 20.96 (4.77) | 23.57 (5.32) | 2.04 | 61 | .04* |
| **TCI – ST** | 15.20 (6.1) | 15.51 (6.75) | .19 | 61 | NS |

\* $p<.05$;  \*\* $p<.01$;  \*\*\* $p<.001$
**SOGS** = South Oaks Gambling Screen; **BDI** = Beck Depression Inventory; **STAI- Y1** = State-Trait Anxiety Inventory Y-1(state); **STAI- Y2** = State-Trait Anxiety Inventory Y-2 (trait); **BIS** = Barrat Impulsiveness Scale; **TCI** = Temperament Character Inventory (**NS**: Novelty Seeking; **HA**: harm Avoidance; **RD**: Reward Dependence; **P**: Persistence; **SD**: Self-Directedness; **CO**: Cooperativeness; **ST**: Self-Transcendence)

# Tab. IV. Score Difference GP on Therapy (33). I°- IV° measurement

| | I | II | III | IV | | | |
|---|---|---|---|---|---|---|---|
| | MEAN (SD) | MEAN (SD) | MEAN (SD) | MEAN (SD) | t | df | Sig. (I-IV) |
| | | | | | | | |
| BDI | 17.51 (8.70) | 10.66 (8.26) | 9.09 (7.08) | 6.06 (4.06) | 8.11 | 32 | .000 *** |
| STAI Y-1 | 52.09 (14.92) | 42.12 (12.049 | 39.33 (8.93) | 37.12 (7.85) | 5.18 | 32 | .000 *** |
| STAI Y-2 | 52.27 (10.43) | 42.33 (11.04) | 40.93 (9.65) | 38.42 (7.62) | 7.36 | 32 | .000 *** |
| BIS-11 | 71.42 (11.18) | 64.36 (9.62) | 61.69 (8.60) | 60. 03 (8.47) | 5.71 | 32 | .000 *** |
| TCI - NS | 26.48 (5.57) | 24.21 (5.05) | 25.39 (4.89) | 26.15 (4.20) | .73 | 32 | .NS |
| TCI - HA | 16.63 (6.22) | 14.96 (5.09) | 15.24 (5.08) | 14.66 (4.31) | 3.73 | 32 | .001 ** |
| TCI - RD | 15.42 (2.53) | 16.12 (2.55) | 15.15 (2.57) | 14.42 (2.48) | 2.54 | 32 | .02 * |
| TCI – P | 3.90 (1.54) | 3.96 (1.35) | 3.87 (1.19) | 3.66 (0.85) | 1.24 | 32 | NS |
| TCI – SD | 16.33 (6.55) | 16.90 (6.26) | 15.54 (5.94) | 14.42 (5.10) | 3.74 | 32 | .001 *** |
| TCI – CO | 23.57 (5.32) | 24.12 (4.49) | 23.09 (4.88) | 21.24 (4.09) | 4.40 | 32 | .000 *** |
| TCI – ST | 15.51 (6.75) | 14.93 (6.46) | 15.12 (6.15) | 16.18 (5.27) | -1.24 | 32 | .NS |

* p<.05;  ** p<.01;  *** p<.001

**BDI** = Beck Depression Inventory; **STAI- Y1** = State-Trait Anxiety Inventory Y-1(state); **STAI- Y2** = State-Trait Anxiety Inventory Y-2 (trait); **BIS** = Barrat Impulsiveness Scale; **TCI** = Temperament  Character Inventory (**NS**: Novelty Seeking; **HA**: harm Avoidance; **RD**: Reward Dependence; **P**: Persistence; **SD**: Self-Directedness; **CO**: Cooperativeness; **ST**: Self-Transcendence)

# Tab. V.  CS  and  PG at the IV measurement

| | PG drop-out (n=30) | PG - therapy IV° (n=33) | | CS (n=52) | PG- therapy IV° (n=33) | |
|---|---|---|---|---|---|---|
| | MEAN (SD) | MEAN (SD) | t-test | MEAN (SD) | MEAN (SD) | t-test |
| | | | Sig. | | | Sig. |
| **BDI** | 16.23 (7.91) | 6.06 (4.06) | .000 *** | 3.76 ( 3.69) | 6.06 (4.06) | .009 ** |
| **STAI Y-1** | 52.73 (11.27) | 37.12 (7.85) | .000 *** | 33.71 (10.22) | 37.12 (7.85) | NS |
| **STAI Y-2** | 49.60 (10.46) | 38.42 (7.62) | .000 *** | 34.73 (7.58) | 38.42 (7.62) | .041 * |
| **BIS-11** | 72.43 (9.39) | 60. 03 (8.47) | .000 *** | 51.19 ( 8.36 | 60. 03 (8.47) | .000 *** |
| **TCI - NS** | 25.46 (5.16) | 26.15 (4.20) | NS | 16.92 (4.52) | 26.15 (4.20) | .000 *** |
| **TCI - HA** | 17.23 (5.65) | 14.66 (4.31) | .046 * | 16.23 (5.10) | 14.66 (4.31) | NS |
| **TCI - RD** | 13.63 (3.41) | 14.42 (2.48) | NS | 13.36 (2.59) | 14.42 (2.48) | NS |
| **TCI – P** | 4.20 (1.47) | 3.66 (0.85) | NS | 3.92 ( 1.29) | 3.66 (0.85) | NS |
| **TCI – SD** | 15.36 (5.39) | 14.42 (5.10) | NS | 23.34 (4.45) | 14.42 (5.10) | .000 *** |
| **TCI – CO** | 20.96 (4.77) | 21.24 (4.09) | NS | 25.30 (4.05) | 21.24 (4.09) | .000 *** |
| **TCI – ST** | 15.20 (6.1) | 16.18 (5.27) | NS | 11.28 (6.80) | 16.18 (5.27) | .001 *** |

* p<.05;  ** p<.01;  *** p<.001
**BDI** = Beck Depression Inventory; **STAI- Y1** = State-Trait Anxiety Inventory Y-1(state); **STAI- Y2** = State-Trait Anxiety Inventory Y-2 (trait); **BIS** = Barrat Impulsiveness Scale; **TCI** = Temperament  Character Inventory (**NS**: Novelty Seeking; **HA**: harm Avoidance; **RD**: Reward Dependence; **P**: Persistence; **SD**: Self-Directedness; **CO**: Cooperativeness; **ST**: Self-Transcendence)

# Step-wise regression analysis

- SOGS dependent variable showed impulsivity predictor (BIS-11) (t=.06; β=.25; p=.046)

- when the impulsivity was the dependent variable the major predictors were low scores in Self-Directedness (t = -3.61, β = -.39, p = .00I) and Reward Dependence (t = -2.61; β =-.26, p = .0I), and high score in Novelty Seeking (t = 3.28; β = .36, p = .002)

- after therapy, the analysis with impulsivity dependent variable, show the only predictor was state anxiety (STAI-Y1) (t = 2.77; β = .44; p = .009)

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# Discussion (1)

- A study by Kim & Grant, (2001) in a sample of PG, using Tridimensional Personality Questionnaire (Cloninger, 1987), found high levels of Novelty Seeking and low level of Harm Avoidance

- In our 2 Italian studies (Savron, Pitti, De Luca, Guerreschi, 2001; Savron, Pitti, De Luca, 2003) using TPQ in PG, we observed higher Novelty Seeking and lower Reward Dependence

- Martinotti et al., (2006) using Temperament Character Inventory (Cloninger, 1994) in 27 PG have found higher Novelty Seeking and Self-Transcendence and lower Self-Directedness and Cooperativeness

- Nordin & Nylander, (2007), with TCI, have observed in 38 PG high Novelty Seeking and Harm Avoidance, low Self-Directedness, and less score in Cooperativeness and higher Self-Transcendence

# Discussion (2)

- In our study, as expected, and in agreement with other studies, pathological gamblers scored high on the Novelty Seeking, with high impulsiveness, rigidity, extravagance and disorganised behaviour

- In synthesis, Pathological Gamblers generally scored high on Novelty Seeking, high on Harm Avoidance, low on Self-Directedness (SD), Cooperativeness (CO) and high on Self-Transcendence (ST)

- This profile is similar to that of those with personality disorders and mixed drug abuse

- Instead, in our sample of gambling we have observed high Reward Dependence, probably related to different sub-groups of heterogeneous PG

# Conclusions (1)

- **There are obvious limitations to this study:**
  - it was an open trial (it is a naturalistic design), the results obtained could be non specific and the design of the study did not allow to discriminate whether the therapeutic results were the consequence only of a psychotherapeutic strategy, natural recovery or presence of family members
  - the absence of waiting list gamblers control
  - 47.6 % of drop-out

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# Conclusions (2)

- However there are several  factors to indicate the validity:
  - the treatment was provided by the same therapist
  - a careful screening of subjects
  - assessment at  pre treatment and during  treatment
  - criteria of PG
  - duration of current episode of illness
  - the use of self rating and assessor rating scales
- Nevertheless, this study provides important information: group therapy was effective in producing psychological modification of patients

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# Conclusions (3)

- The results of this study confirm the presence of specific psychological state and trait characteristics in subjects with PG

- The study defined the psychopathological differences in the gamblers and control group and identified the characteristics in gamblers that continued group therapy. (Drop-out group displayed less score in Reward Dependence and Cooperativeness)

- The gamblers didn't gamble but after 18 months of therapy still displayed some significant differences compared to the control group

# Conclusions (4)

- The reduction of depression, anxiety, impulsivity and harm avoidance lend support to the efficacy of Group Therapy in the treatment of Pathological Gambling

- The  regression analysis confirm the relation between state anxiety and impulsivity on PG

- The findings of this study lend support to the previous investigations on Group Therapy management of PG patients and we can say that a trial of Group Therapy treatment appears to be an adequate choice for patients who have the problem of gambling

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# Thanks for your attention

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