

to 4.46], group based counseling (SMD 1.36, CrI 0.40 to 3.17) had significantly greater effects than usual care. Participants assigned to all assessed interventions had a significantly improvement in depression compared with usual care, except for those assigned to psychoeducational therapy (SMD 0.02, 95% CrI -0.11 to 0.15).

**Conclusion** This review shows that cognitive behavioral therapy, group based counseling and exercise may have significant beneficial effects considering SF-36 and HADS when compared with usual care. However, additional well-done research studies are necessary to establish the role of psychosocial interventions in men with PCa.

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#### EW0430

### Suicides and cancer mortality in Russia: A comparative analysis of trends

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**Introduction** The association between suicide and cancer is complex. Hopelessness and depression are the common risk factors for both suicide and cancer. There is also evidence that suicide rate in cancer patients are higher than in the general population. However, the real occurrence of suicide in cancer patients is considered to be underreported. This is a good reason to expect a positive relationship between cancer mortality and suicide rates at the population level.

**Aims** The present study aims to test the hypothesis of the close aggregate level link between cancer mortality and the suicide rates in Russia.

**Methods** Trends in sex-specific cancer mortality and the suicide rates from 1956 to 2010 were analyzed employing a distributed lags analysis.

**Results** The results of analysis indicate the presence of a statistically significant association between trends in suicides and cancer of the upper digestive tract (mouth, oral cavity and pharynx), larynx, bronchus and lungs, stomach, colorectal, ureter and leukemia for male. There is also a statistically significant association between trends in suicides and cancer of the upper digestive tract (mouth, oral cavity and pharynx), larynx, bronchus and lungs, stomach, colorectal, ureter, breast, cervix, uterus and leukemia for female.

**Conclusions** Common confounding variables, including binge drinking and psychosocial distress, may explain positive aggregate-level association between the cancer mortality and suicides time series in Russia.

**Disclosure of interest** The author has not supplied his/her declaration of competing interest.

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#### EW0431

### Clinical and psychological confirmation of stabilizing effect of neurofeedback in migraine

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**Introduction** Neurofeedback in migraine aims to improve neurophysiological state, which is linked to psychosomatic, emotional and cognitive regulation. Objective and complex evaluation of neurofeedback effects is feasible.

**Methods** A single case design cross-over placebo-controlled study with blinded evaluator included 3 females with frequent migraine (N., E., T.), 1 of whom (T.) also had TTH. Study had 4 phases: evaluation ( $\geq 2$  weeks), treatment 1 (5 weeks), treatment 2 (5 weeks), evaluation ( $\geq 2$  weeks). Treatment 1 and 2 included 10 infra-low frequency neurofeedback and 10 sham-neurofeedback sessions at T3T4 site in randomized order. Detailed psychological assessment was performed a baseline, at phase switch and in the end. Every day participants filled a computerized diary about pain, aura, mood, stress, copings. Before each session they received questionnaires "well-being, activity, mood" (rating of the current state between antonym adjectives, in Russian).

**Results** The main finding was reduction of migraine (but not TTH) frequency during real, but not sham neurofeedback phase: 11% vs. 31% days in N. ( $P=0.1$ ), 15% vs. 30% days in E. ( $P=0.046$ ), T. After the start of neurofeedback had only TTH. Another detected phenomena was reduction of day-to-day shifts in cognitive function domains of "well-being, activity, mood" (easy/difficult to think, attentive/distracted). In N. and E these domains had co-dynamic with mood (good/bad mood, happy/sad), while in T. – with anxiety (tensed/relaxed, nervous/calm).

**Conclusion** Infra-low frequency neurofeedback from interhemispheric site resulted in decrease in migraine frequency and in reduction of shifts in psychological state. Thus, the treatment had multimodal stabilizing effect.

**Disclosure of interest** The authors have not supplied their declaration of competing interest.

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#### EW0432

### Sham-neurofeedback as an intervention: Placebo or nocebo?

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**Introduction** Sham-controlled studies of neurofeedback are aimed to provide evidence-based data regarding its efficacy. However, a sophisticated sham procedure may turn out to be an intervention rather than a neutral control.

**Methods** Data from a single-case cross-over sham-controlled study of NF in migraine were analyzed to assess the effects of sham-NF. The study included 5 females with chronic migraine and was divided into 4 phases: pre-evaluation ( $\geq 2$  weeks), treatment 1 (5 weeks), treatment 2 (5 weeks), post-evaluation ( $\geq 2$  weeks), where treatment 1 and 2 included 10 infra-low frequency NF and 10 sham-NF sessions at T3T4 site in randomized order. Participants filled out a computerized diary about headache and emotions.

**Results** Sham-NF resulted in some reduction of the level of tension ( $0.8 \pm 0.7$  vs.  $1.1 \pm 0.5$ ,  $P=0.1$ ) and anxiety ( $0.56 \pm 0.5$  vs.  $0.95 \pm 0.4$ ,  $P=0.07$ ) as measured by the mean value in the diary (rating from 0 - no emotion, to 3 - very intense). While the total frequency of headache was not influenced by sham-NF ( $40 \pm 11\%$  vs.  $40 \pm 7\%$  days,  $P=1$ ), a tendency towards an increase in quantity of severe headaches ( $42 \pm 18\%$  vs.  $20 \pm 18\%$  days,  $P=0.07$ ) and in the need for drug intake ( $74 \pm 27\%$  vs.  $44 \pm 30\%$  days,  $P=0.07$ ) was observed. We supposed that expectation of feedback and failure to receive it during sham sessions may have possible negative effects, while frequent visits to the clinic and contact with the therapist may explain reduction in anxiety.

**Conclusion** Sham-NF seems to have both placebo and nocebo effects, which should be considered during interpretation of results of the studies.