

## **A preliminary statement regarding the effects of *"the extended course for a marginalized group of women"* in collaboration with IAHV's Women Empowerment Program (WEP).**

The course was held in Copenhagen April-May 2008 by Pia Maria Sorensen Teacher and President IAHV Denmark.

-Study made By Christa Lomholt, medical student at Copenhagen University and Neha Mathur, M.D., research assistant. September 2008.

### **Aim:**

The goal of this pilot study is to investigate whether the techniques taught on the Art course have a reducing effect on depression and anxiety in a group of marginalized women, using the international standardized questionnaires for depression (Becks Depression Inventory II) and anxiety (Hospital and Anxiety Depression Scale). Furthermore the longtime effects of the techniques are also to be examined.

### **Background:**

Increasing rates of psychosocial disturbances gives rise to increased risk and vulnerability for a wide variety of stress-related chronic pain, depression, anxiety and other illnesses.

The yogic breathing exercises Sudarshan Kriya and related practices (SK&P) are understood to have favorable effects on the body-mind system by reducing stress and anxiety. The participants in this study were a group of marginalized single mothers - some also diagnosed with depression and/or anxiety. Neither of the women were working or studying during the start of the course.

The techniques' taught on the WEP included the breathing techniques' (SK&P), yoga, meditation and knowledge of the tendencies of the mind and how to live in the present moment. These are exercises/techniques which the participants would be able to continue practicing on their own after the course ended.

### **Methods:**

The participants were all single unemployed mothers, who had connection to a "Mothers Help" organization in Copenhagen, Denmark. The social workers at the "Mothers Help" in collaboration with IAHV's Women Empowerment Program offered their clients the opportunity to participate in this specific Art of Living's extended part 1 course.

14 participants were instructed in a 10-days intensive program of SK&P and the other techniques taught on WEP, which they afterwards practiced daily for 30 days. This was in the form of follow-up sessions 4 times a week. Here the women also shared their past experiences, trauma's and difficulties in everyday life.

To objectively document the effects on depression and anxiety, two international standardized questionnaires for depression (BDI-II - Beck Depression Inventory II) and anxiety (HAD - Hospital and Anxiety Depression Scale) were administrated before and after the intervention.

Each of the participants filled out a set of questionnaire before the course started, after 10 days (end of the course), after 40 days (last day of the follow-up session). To examine the longtime effects of the course, the questionnaires were also administrated 1 month after the last day of the follow-up sessions.

The study is still ongoing and questionnaires are to be administrated 3 and 6 months after the last day of the follow-up sessions in order to determine the longtime effect.

### **Results:**

Even though compliance was not high (variable attendances from the participants in the follow-up sessions - one dropped out), the subjective reports generally correlated with the finding from the questionnaires. Data suggested that the participants lowered their degree of depression after 10 days

and even further more after 40 days. The longtime effects after 1 month of the last follow-up session showed that the participants remained having the same low degree of depression as after the 40 days.

Becks Depression Inventory (BDI-II) is divided in 4 scales:

0 – minimum depressed, 1 – mild depression, 2 – moderate depression and 3 – severe depression

On day 1 approx 92% of the participants had a moderate depression.

On day 14 approx. 32% had a moderate depression.

On day 40 approx. 18 % had a moderate depression

And one month after approx. 17 % had a moderate depression

HAD - anxiety is divided in 3 stages: normal, borderline abnormal and abnormal.

93% had abnormal anxiety on day 1,

27% had abnormal anxiety on day 40

33% had abnormal anxiety after the one month follow-up.

HAD Depressions scale : normal, borderline abnormal and abnormal

On day 1 approx. 7% were normal (without depression)

On day 14 approx 62 % were normal (without depression)

On day 40 approx 73% were normal (without depression)

After the one month follow-up 75 % were normal.

These results are not statistically significant, but only an approximation. Data is still being processed.

### **Conclusion/Discussion:**

These preliminary data indicate that the techniques have beneficial effects for marginalized women, which was also reported by the participants, who experienced an improvement in both physical and mental health – the mind body system. The preliminary calculations show a tendency of reduction in anxiety and depression - however data is still being processed and therefore no conclusions can yet not be made.

The idea of this program, or part of it was also to implement the breathing techniques as a daily routine for the participants so they might continue after the course and the regular follow-up sessions ended.

Subjectively we observed great changes and positive effects in most of the participants attending the WEP and are therefore interested in conducting further studies. The next protocol would include a control group to better compare the results.

Questions can be directed to Neha Mathur, e-mail: [findneha@gmail.com](mailto:findneha@gmail.com).

Best regards

Christa Lomholt and Neha Mathur