

Reducing Teachers' Psychological Distress through a Mindfulness Training Program

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Teachers constitute one of the professional collectives most affected by psychological problems. The purpose of this quasi-experimental study is to examine the efficacy of a mindfulness training programme to reduce psychological distress in a group of teachers. The sample comprised 68 teachers of Secondary School Education, from various public schools; half of them formed the experimental group, and the other half the control group. The levels of psychological distress were measured, in both groups, by the Symptom Checklist-90-R (SCL-90-R) before and after the application of the programme. Statistical analysis shows the significant reduction of three general measures of psychological distress (Global Severity Index, Positive Symptom Distress Index, and Positive Symptom Total), as well in all its dimensions (somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism), in the experimental group compared with the control group. Follow-up measures show that these results were maintained for four months after termination of the intervention in the experimental group.

Keywords: teacher, psychological distress, mindfulness, quasi-experiment.

Los docentes constituyen uno de los colectivos profesionales más afectados por problemas de tipo psicológico. El objetivo de este estudio cuasi-experimental es examinar la eficacia de un programa de entrenamiento en mindfulness para reducir el malestar psicológico en un grupo de docentes. La muestra estuvo constituida por 68 profesores de Educación Secundaria, de varios centros públicos; la mitad de ellos formaron el grupo control, y la otra mitad el grupo experimental. Los niveles de malestar psicológico fueron evaluados, en ambos grupos, mediante el Symptom Checklist-90-R (SCL-90-R) antes y después de aplicación del programa. Los análisis estadísticos muestran la reducción significativa en las tres medidas generales de malestar psicológico (Índice de Severidad Global, Índice de Distrés de Síntomas Positivos y Total de Síntomas Positivos), así como en todas sus dimensiones (somatización, obsesión-compulsión, sensibilidad interpersonal, depresión, ansiedad, hostilidad, ansiedad fóbica, ideación paranoide y psicoticismo), en el grupo experimental en comparación con el grupo control. Medidas de seguimiento mostraron que estos resultados se mantuvieron transcurridos cuatro meses tras la finalización de la intervención en el grupo experimental.

Palabras clave: docentes, malestar psicológico, mindfulness, cuasi-experimento.

In recent years, the findings of several studies have alerted us to the significant increase in psychological distress among teachers (e.g., Fueguel & Montoliu, 2005; Martínez, 1997; Moriana & Herruzo, 2004; Sevilla & Villanueva, 2000), which has been exacerbated by high levels of anxiety, depression, and low self-esteem. It may even have reached the point of negatively affecting their job performance (e.g., Calvete & Villa, 2000; Del Pozo, 2000; Matud, García, & Matud, 2002; Smith, 2001). For example, a study conducted by a labor union called Labor Commissions found that teachers are among the groups of professionals most seriously impacted by stress, depression, and psychological fatigue. The situation has reached such an extreme that eight out of every ten teachers report that psychological problems are the group's main ailment (Sevilla & Villanueva, 2000). Similarly, a study conducted by the National Association of Education Professionals (ANPE; acronym in Spanish) in collaboration with the Jiménez Díaz Foundation suggests that 73% of public school teachers are at risk of suffering from an anxiety or depressive disorder (ANPE, 2005).

Teachers' academic education does not include any sort of psychological preparation or self-awareness tools, so teachers tend to lack the resources and abilities needed to meet the rigors and demands that their work as educators requires of them day to day (Anadón, 2005; Bisquerra, 2005). Along that vein, Moriana and Herruzo (2004) maintain that greater self-awareness and higher levels of self-control and self-esteem may help to protect teachers against their stress.

Moreno, Garrosa, and González (2000) found that teachers who abstain from using maladaptive coping strategies such as avoidance, distancing, or denial exhibit lower levels of stress and professional exhaustion. Similarly, Riquelme, Buendía, and Rodríguez (1993) posited that when presented with a given stressful situation, strategies focused on self-control and exposure are more effective than those based on escape from and/or avoidance of the stressful situation. These findings agree to some extent with some classical psychosomatic postulates that hold that when we distance distress from our consciousness, we are really storing it in our bodies and sooner or later, it will manifest itself in the form of anxiety, tension, worry, or insecurity (Holen, 2006). In addition, their results support the findings of recent studies that control strategies such as avoidance, substitution, elimination, etc., of uncomfortable private events (i.e., thoughts, emotions, bodily sensations, etc.) may actually increase the intensity, frequency, duration, or even accessibility of the unwanted sensations, thereby generating further problems and suffering (e.g., Campbell, Barlow, Brown, & Hoffman, 2006; Cioffi & Holloway, 1993; Gross & Levenson, 1997; Gutiérrez, Luciano, Rodríguez, & Fink, 2004; Webner & Erber, 1992; see reviews by Purdon, 1999; Rassin, Merckelbach, & Muris, 2000; and a meta-analysis by Abramowitz, Tolin & Street, 2001).

From that perspective, several authors consider *Mindfulness* to be a viable therapeutic tool or intervention technique (e.g., see Baer, 2003; Brown & Ryan, 2003; Hayes, Follette, & Linehan, 2004; Germer, Siegel, & Fulton, 2005; Kabat-Zinn, 1994; Linehan, 1993; Mañas, 2009; Marlatt, 1994; Robins, 2002; Segal, Williams, & Teasdale, 2002) because through its practice, the subject learns to observe and accept the thoughts, sensations, and emotions he or she experiences without making any attempt to eliminate, modify or alter them. In summary, *mindfulness* in contemporary psychology has been adopted as an approach to increase awareness of and skillfully respond to the mental processes that contribute to emotional distress and maladaptive behaviour (Bishop et al., 2004).

Practicing *mindfulness* allows one to contemplate the thoughts and sensations they experience, as events that flow continuously and that should only be noticed and observed, while remaining conscious of their transitory and non-permanent nature. This breaks the habitual think-feel-act pattern as well as the habit of judging and evaluating thoughts as if they were their own entities. In this manner, we learn to observe them without necessarily reacting to them (Kabat-Zinn, 1994; Kumar, 2002; Mañas, 2009; Marlatt, 1994; Shear, 2006). Thus, the aim of *mindfulness* is to feel things as they actually occur without trying to control them or act upon them, so to a certain extent, it works similarly to exposure techniques and also favors organismic self-control (Vallejo, 2006).

It has been confirmed that performing *mindfulness* exercises reduces levels of nervousness, worry, and emotional distress and increases levels of muscular relaxation, emotional calmness, and overall well-being (Mañas, Luciano, & Sánchez, 2008; Mañas, Sánchez, & Luciano, 2008). The effectiveness of *mindfulness* techniques at improving psychological distress in its different manifestations (e.g., anxiety, depression, stress, insomnia, etc.) has been demonstrated, as has its ability to improve several types of medical problems (e.g., cancer, hypertension, psoriasis, asthma, etc.) (For a more exhaustive review, see Arias, Steinberg, Banga, & Trestman, 2006; Baer, 2003; Brown, Ryan, & Creswell, 2007; Ferguson, 1981; Grossman, Niemann, Schmidt, & Walach, 2004).

Nowadays, dozens of therapies exist that in some way or another utilize *mindfulness* or otherwise integrate its principles. However, only three psychological therapies have been developed that explicitly teach *mindfulness* abilities to patients (see Germer et al., 2005; Hayes et al., 2004): *Mindfulness-Based Cognitive Therapy* (MBCT; Segal et al., 2002), *Dialectical Behavioral Therapy* (DBT; Linehan, 1993), and *Acceptance and Commitment Therapy* (ACT; Hayes et al., 1999; Wilson & Luciano, 2002). Empirical evidence for the effectiveness of these three therapies has been amply provided by controlled studies (see reviews by Coelho, Canter, & Ernst, 2007; Hayes, Luoma, Bond, Masuda, & Lillis, 2006; Hayes, Masuda, Bissett, Luoma, & Guerrero, 2004; Robins & Chapman, 2004).

In addition to MBCT, DBT, and ACT, in the area of *mindfulness*, the psycho-educational training program developed by Jon Kabat-Zinn is especially distinguished: *Mindfulness-Based Stress Reduction* (MBSR; Kabat-Zinn, 1982, 1990). MBSR is a general training program, not specific to any particular psychological disorder, whose application has been demonstrably effective at combating multiple problems in the areas of mental and physical health, in patients as well as in healthcare professionals (e.g., see recent and exhaustive reviews by Chiesa & Serretti, 2009; Irving, Dobkin, & Park, 2009; see also Grossman et al., 2004).

Concretely, the MBSR program has been demonstrated to be effective at reducing psychological distress. For example, Shapiro, Schwartz, and Bonner (1998) found that by applying this program in a sample of medical students, levels of psychological distress as well as anxiety decreased, and levels of empathy increased. Those results were later replicated by Jain, Shapiro, Swanick, Bell, and Schwartz (2004), also in a sample of medical students. Reibel, Greeson, Brainard, and Rosenzweig (2001) employed the MBSR program, too, and found significant improvements in quality of life in terms of health, decreases in physical symptoms, and decreases in levels of psychological distress in a heterogeneous sample of patients. That study, by using follow-up measures, demonstrated that said improvements were maintained after one year. Later, Rosenzweig, Reibel, Greeson, Brainard, and Hojat (2003) also obtained positive results by reducing psychological distress in a sample of medical students through the same program. Also, these authors, found reduced levels of anxiety, confusion, and fatigue, as well as increased levels of vigor and activity.

On a related note, Ostafin et al. (2006) conducted an intensive *mindfulness* training course that was 10 days long and held at a Buddhist center, and found it had positive effects on the levels of psychological distress in a sample of 53 participants. All symptoms associated with psychological distress were reduced and these results were maintained after three months. Finally, Coffey, and Hartman (2008) reported an inverse relationship between *mindfulness* and psychological distress in a non-clinical, student sample.

To this date, in Spain, the study by Martín-Asuero, García de la Banda, and Benito (2005), and one by Martín-Asuero and García de la Banda (2007) have been the only ones published to have employed *mindfulness* techniques to reduce psychological distress, and they employed the MBSR program in a sample of healthcare professionals. The objective of the present, quasi-experimental study was to test whether or not a certain *mindfulness* training program called Flow Meditation, whose effectiveness has been demonstrated in various contexts (e.g., Franco, 2009a, 2009b; Franco & Navas, 2009), may also be effective at reducing the levels of psychological distress experienced by a group of teachers.

Method

Participants

Sixty-eight secondary school teachers participated in the study, 29 men (42.65%) and 39 women (57.35%). They worked for several public schools in Guadix County (Granada, Spain). The experimental group was comprised of 34 participants of whom 14 were men and 20 were women and the control group included the other 34 people, 15 men and 19 women. The teachers ranged in age from 24 to 58 years old ($M = 40.2$; $SD = 18.3$). Teachers in the control group fell between the ages of 27 and 58 years old ($M = 36.3$; $SD = 15.4$), while participants in the experimental group ranged in age from 24 to 56 years old ($M = 44.1$; $SD = 21.2$).

Instruments

The SCL-90-R (Derogatis, 2002; González, De las Cuevas, Rodríguez, & Rodríguez, 2002) questionnaire was employed to evaluate teachers' levels of psychological distress. It is a 90-item, multidimensional, self-report questionnaire that evaluates psychological distress according to nine different dimensions: somatization, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychosis. Based on these nine dimensions, three global indices of distress were conceived: the Global Severity Index, which indicates the distress's current level of severity, combines the number of perceived symptoms present and the distress's perceived intensity; the Total of Positive Symptoms, which refers to the total number of items marked with some degree of distress; and the Positive Symptoms of Distress Index, which indicates the symptomatic intensity measured. Each item on the questionnaire was evaluated on a Likert-type scale ranging from 0 (*never*) to 4 (*always*).

This questionnaire was chosen because of its sensitivity to change through therapeutic intervention (Bech, Maier, Albus, & Allerup, 1992; Carrasco, Sánchez, Ciccotelli, & del Barrio, 2003; Schauenberg, 1999) and also for its high internal consistency, with alpha values for the different scales ranging from .81 to .9.

Procedure

We first obtained a sample to participate in the study. To do so, a course was offered for secondary school teachers called "Stress Prevention and Treatment," and a total of 68 teachers signed up to participate. Subsequently, subjects were randomly assigned to the control and experimental groups, controlling for the variable sex since several studies have demonstrated that women score higher on the majority of the SCL-90-R's scales (Caparrós, Villar, Juan, & Viñas, 2007; Carrasco et al., 2003; González et al.,

2002; Hafkenscheid, 1993) and are also more susceptible to depression than men (Carrillo, Rojo, & Staats, 2004). Furthermore, Santiago, Otero, Castro, and Villardefrancos (2008) found that female teachers are more widely affected by the stress of teaching than their male counterparts. Once the study's sample was formed, the two groups of participants were given a pre-test evaluation to create an initial measure of their levels of psychological distress. To do so, each teacher completed the SCL-90-R.

Having completed the pre-test measure, we next applied the intervention program to teachers in the experimental group throughout 10 sessions distributed over 10 weeks, each one and a half hours long. Said intervention program consisted of learning and practicing Flow Meditation (Franco, 2007, 2009c) everyday for 40 minutes. Its primary objective is not to try and control thoughts, sensations, or feelings or to modify or change them, but conversely to allow them to be free, accepting any private event that might occur or emerge spontaneously. One of the main components of Flow Meditation is to become conscious of one's breathing while simultaneously repeating a word or sound. This way, the mind becomes quiet, achieving a state of mental calm and elevated attention and concentration, therefore decreasing automatic and involuntary activity (e.g., see Holen & Halvor, 2007). To achieve this, one must combine what they have learned of this technique with exposure to and debate about different metaphors from Acceptance and Commitment Therapy (Hayes et al., 1999; Wilson & Luciano, 2002). ACT therapy implies accepting a philosophy of openness to life and to the advantages and disadvantages of being conscious beings, and reacting to problems in a way that does not annul life or convert what are simply "life problems" into "psychological problems" (Pérez, 2001).

The structure of the intervention program sessions was the following:

- Participants' comments about their practice of *mindfulness* exercises during the week (doubts, experiences, set-backs).
- Performing a 10-minute body-scan exercise.
- Presenting the different metaphors and exercises corresponding to each session.
- Practicing *mindfulness* by paying attention to breathing for 20-30 minutes.

The content of each session is summarized in Figure 1.

In order to exclude the influence of unspecified factors on the study's results such as therapy, social support, and positive hope, subjects in the control group participated in a psychomotor therapy program that consisted of playing games and doing exercises with large balls, rings, music, etc.. Also, their sessions closed with a practice in which they were told to close their eyes during 20 minutes while relaxing music played, but without giving them any type of specific instructions about what they should do. This program also lasted 10 weeks with a weekly session of one hour and a half of duration.

Subjects in the experimental group had homework; they had to practice the body-scan exercise for 10 minutes everyday, as well as the abdominal breathing *mindfulness* exercise for 30 minutes a day. Conversely, subjects in the control group were instructed to practice the exercise of closing their eyes and listening to relaxing music for 40 minutes everyday. Subjects in both the control and experimental groups were not aware of the two treatments and had been randomly assigned to one or the other. Furthermore, the evaluations (pre-test and post-test) and the intervention programs were done simultaneously in the control and experimental groups.

The treatments were applied as a group at a Teacher Training Center. In both the control and experimental groups, all participants finished the program.

In the case of the experimental group, the intervention program was conducted by an experienced instructor in the practice and teaching of different meditation techniques. Meanwhile, the intervention program for the control group was performed by a psychomotor therapist.

After completing the meditation program, a post-test score was obtained so as to determine whether any variation had occurred in the variables of psychological distress analyzed. Thus, the SCL-90-R was again administered to all the teachers in the sample, and the conditions of the pre-test measure were replicated. Four months later, a follow-up measure was taken to see whether or not the results presented after intervention were maintained over time. The SCL-90-R questionnaire was administered to members of the control and experimental groups once more to take this measurement.

At the end of the study, all participants were informed of its objective and we sought their written consent to use their data, all the while maintaining and guaranteeing confidentiality and anonymity. Once the research was complete, subjects in the control group were offered the meditation course.

Statistical Analysis

We employed Student's *t* statistic for independent samples to determine whether or not there were statistically significant differences between the average scores of the control and experimental groups, during each phase of the study, on the different dimensions and general measures of psychological distress. We selected Student's *t* as our data analysis technique because it is recommended when performing a quasiexperimental research study wherein only two groups are compared (control and experimental). Student's *t* was also chosen for its sensitivity and discriminatory capacity for small samples (Rial & Valera, 2008).

Student's *t* test for dependent samples was also used to test for significant differences between average scores during the study's three different phases on the dimensions and general measures of psychological distress, for both the

Figure 1
Summary of Flow Meditation Program

Session	Exercises	Metaphors
1	* All the members of the group are introduced; *Present the reasons for participating in the meditation course and expectations thereof; *Presentation of the conditions necessary to begin meditating and different aspects to bear in mind during meditation practice; *Explanation of the practice of flow meditation; *Do first meditation practice	
2	*Exercise of trying not to blink for a minute; *Looking for analogies for the previous exercise and control of private events; *Meditation practice	Bamboo Metaphor
3	* Observing sensation in the area of the face exercise; *Meditation practice	River Metaphor, Dirty Glass Metaphor, Operation Metaphor, and Painful Birthing Metaphor
4	*Observing sensation in the area of the chest and abdomen exercise; *Meditation practice	Monkey and Banana Metaphor
5	*Observing sensation in the area of the back exercise; *Remembering words exercise; *Thought observation exercise; *What are numbers? And what is your mother’s name exercise; *Meditation practice	Two Monks Metaphor
6	*Observing sensation in the arms exercise; *Counting thoughts exercise; *Meditation practice	Story of the two rings
7	*Observing sensation in the legs exercise; *Meditation practice	Radio Turned on Metaphor
8	*Observing sensations in the whole body exercise; * “I should” and “I should have” analysis exercise; *Meditation practice	
9	* Accepting annoying and uncomfortable private events exercise; *Exercise about saying yes then not doing, and saying no, then doing it anyway; *Meditation practice	Computer Metaphor, Polygraph Metaphor, The Meow Story
10	* Participants’ sharing session about their experiences during the course; *Meditation practice	Indigenous People Gathering Lumber Metaphor

control and experimental groups. In order to evaluate the magnitude of change exhibited by the experimental group through intervention according to their post-test and follow-up measures, Cohen’s *d* (1988) was used. In addition, the percentages of change between the pre-test and post-test and pre-test and follow-up scores were calculated.

Results

Table 1 displays the pre-test and post-test means and standard deviations corresponding to the control and experimental groups for each of the variables, as well as for general measures of psychological distress. The analysis of the two groups’ average pre-test scores revealed no statistically significant differences between their measurements on any of the variables (see Table 2). Which means that, there were no differences between the two groups prior to intervention in terms of the variables

analyzed. However, when average post-test scores were analyzed, statistically significant differences were found between the two groups regarding the three general measures of psychological distress: the positive symptoms of distress index, the total of positive symptoms, and the global severity index. Significant differences were also obtained for all the dimensions evaluating psychological distress: somatization, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychosis.

The analysis of average pre-test and post-test scores showed that, for the control group, there were no significant differences in any of the variables. For the experimental group, significant differences were observed between scores before and after intervention on the three general measures of psychological distress: the positive symptoms of distress index, the total of positive symptoms, and the global severity index. Significant differences were also

Table 1
Control and Experimental Groups' Pre-test and Post-test Means and Standard Deviations on Variables and General Measures of Psychological Distress

Group Variable	Pre-test				Post-test			
	Control		Experimental		Control		Experimental	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Somatization	.941	.663	1.13	.519	1.06	.793	.662	.212
Obse. Compuls.	1.42	.845	1.49	.620	1.56	.787	.879	.479
Interpers. Sens.	.815	.725	1.21	.487	.903	.648	.673	.308
Depression	.993	.799	1.19	.631	1.08	.645	.768	.320
Anxiety	.844	.690	.991	.498	.936	.612	.522	.239
Hostility	.756	.365	1.07	.500	.812	.318	.585	.224
Phobic Anxiety	.535	.304	.580	.368	.639	.232	.207	.357
Paranoid Ideation	.933	.446	1.04	.497	1.01	.571	.614	.293
Psychosis	.744	.350	.992	.493	.864	.415	.467	.165
Pos. Symp. Dist. Ind.	.910	.451	1.19	.322	.933	.524	.642	.232
Total Posit. Symp.	44.2	28.9	42.5	22.1	46.6	26.2	20.7	11.8
Global Sever. Ind.	1.56	.550	1.74	.597	1.67	.505	.766	.531

Table 2
Student's *t* Test for Independent Samples for the Pre-test and Post-test Differences between the Control and Experimental Groups, for the Different Variables and General Measures of Psychological Distress

Variable	Pre-test		Post-test	
	<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
Somatization	.844	.407	5.25	.000*
Obsession-compulsion	.229	.820	3.91	.004***
Interpersonal Sensitivity	1.71	.101	4.44	.001**
Depression	.724	.476	4.28	.001**
Anxiety	.637	.530	4.58	.001**
Hostility	1.11	.276	2.63	.032****
Phobic Anxiety	.289	.775	3.03	.019****
Paranoid Ideation	.380	.707	3.18	.016****
Psychosis	.938	.357	2.06	.041****
Positive Symptoms Distress Index I	.29	.207	3.07	.017****
Total of Positive Symptoms	.168	.868	3.33	.012****
Global Severity Index	.798	.432	3.52	.008****

Note: * $p < .001$; ** $p = .001$; *** $p < .01$; **** $p < .05$

found between scores before and after treatment in all the dimensions that evaluate psychological distress. In the following order, the largest changes were produced in the dimensions somatization, interpersonal sensitivity, and hostility; next, in obsession-compulsion, depression, and anxiety; followed by psychosis; and finally phobic anxiety and paranoid ideation (see Table 3).

To determine whether or not the significant improvements found in the experimental group were maintained with time, after 4 months, we performed an analysis of the difference

in that group's pre-test, post-test, and follow-up scores. No significant differences were found between the post-test and follow-up measures for any of the variables analyzed. However, significant differences were observed between the pre-test and follow-up scores of the three general measures of psychological distress: the positive symptoms of distress index, the total of positive symptoms, and the global severity index, as well as in all the dimensions evaluating psychological distress. The greatest differences were obtained for the somatization dimension; followed by the

Table 3
Student’s t Test for Related Samples for the Post-test and Pre-test Differences in the Control and Experimental Groups, for the Different Variables and General Measures of Psychological Distress

Variable	Control		Experimental	
	<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
Somatization	1.97	.071	6.73	.000*
Obsession-compulsion	1.70	.114	4.67	.001**
Interpersonal Sensitivity	1.84	.191	6.43	.000*
Depression	1.81	.195	4.70	.001**
Anxiety	2.02	.098	4.61	.001**
Hostility	1.56	.143	6.34	.000*
Phobic Anxiety	2.29	.081	3.09	.017****
Paranoid Ideation	2.31	.069	2.84	.029****
Psychosis	2.08	.087	3.87	.004***
Positive Symptoms Distress Index	1.58	.139	4.36	.001**
Total of Positive Symptoms	1.07	.303	3.84	.004***
Global Severity Index	.859	.407	4.32	.001**

Note: **p* < .001; ***p* = .001; ****p* < .005; *****p* < .05

Table 4
Means and Standard Deviations of the Experimental Group’s Follow-up Measures, Student’s t Test for Related Samples for the Pre-test and Follow-up Differences, and General Measures of Psychological Distress

Variable	Follow-up		Pre-test-Foll		Post-test-Foll	
	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>t</i>	<i>p</i>
Somatization	.365	.299	5.81	.000*	.328	.386
Obsession-compulsion	.635	.324	4.25	.001**	1.05	.109
Interpersonal Sensitivity	.398	.231	4.39	.001**	.868	.414
Depression	.393	.274	3.46	.009***	.345	.263
Anxiety	.347	.178	3.67	.007***	.536	.342
Hostility	.394	.270	4.87	.001**	.288	.145
Phobic Anxiety	.362	.273	3.23	.014****	.164	.317
Paranoid Ideation	.346	.228	2.32	.037****	.535	.186
Psychosis	.543	.134	3.45	.010****	.797	.143
Posit. Symp. Dist. Ind.	.389	.332	4.35	.001**	.916	.102
Total Posit. Symp.	22.7	18.4	3.11	.011****	.417	.282
Global Sever. Ind.	.812	.345	2.47	.031****	.228	.184

Note: **p* < .001; ***p* = .001; ****p* < .01; *****p* < .05; Posit. Symp. Dist. Ind.: Positive Symptoms of Distress Index; Total Posit. Symp.: Total of Positive Symptoms; Global Sever. Ind.: Global Severity Index.

obsession-compulsion dimensions, interpersonal sensitivity, and hostility; followed by anxiety; and finally, phobic anxiety, paranoid ideation, and psychosis (see Table 4).

With the objective in mind of evaluating the magnitude of change that had occurred in the experimental group upon post-test and follow-up measures, Cohen’s *d* (1988) was used, such that values greater than 1.5 indicated very important changes, between 1.5 and 1 indicated important changes, and between 1 and .5 signified medium changes. Table 5 conveys that the Cohen’s *d* scores for the post-

test measures indicate very important changes occurred in two of the three general measures of psychological distress: the positive symptoms of distress index and the global severity index. Also, important changes were observed concerning the general measure of the total of positive symptoms as well as in the variables psychosis, interpersonal sensitivity, hostility, anxiety, somatization, obsession-compulsion, paranoid ideation, and phobic anxiety. Finally, changes of a medium level appeared in the variable depression.

Table 5

Cohen's d and the Experimental Group's Percentage of Change between Post-test and Follow-up Measures for the Different Variables and General Measures of Psychological Distress

<i>Variable</i>	<i>d Post-test</i>	<i>d Foll.</i>	<i>% Post-test</i>	<i>% Foll.</i>
Somatization	1.18	.91	-41.4	-33.5
Obsession-compulsion	1.10	1.32	-41.0	-44.3
Interpersonal Sensitivity	1.32	1.34	-44.3	-42.3
Depression	.84	.77	-35.4	-31.7
Anxiety	1.20	1.06	-47.3	-39.7
Hostility	1.25	1.31	-45.3	-49.1
Phobic Anxiety	1.03	.77	-64.3	-42.7
Paranoid Ideation	1.04	.89	-40.9	-29.8
Psychosis	1.43	1.25	-52.9	-45.2
Positive Symptoms Distress Index	1.96	1.85	-45.3	-50.5
Total of Positive Symptoms	1.23	.88	-51.2	-41.9
Global Severity Index	1.73	1.90	-55.9	-53.4

Regarding the magnitude of change exhibited between pre-test and follow-up scores, very important changes were observed in two of the three general measures of psychological distress: the global severity index and the total of positive symptoms. Similarly, important changes occurred in the variables interpersonal sensitivity, obsession-compulsion, hostility, psychosis, and anxiety. Last, medium-level changes were observed in the general measure of positive symptoms and in the variables somatization, paranoid ideation, depression, and phobic anxiety (see Table 5).

Finally, the percentages of change between the post-test, pre-test, and follow-up scores were calculated. With respect to the percentage of change between pre-test and post-test measures, Table 5 shows that this percentage exhibited decreases ranging from 64% (phobic anxiety) to 35% (depression). In addition, the percentage of change between the follow-up and pre-test scores exhibited decreases ranging from 53% (global severity index) to 29% (paranoid ideation) (see Table 5).

Discussion

After analyzing the results of the present study, we were able to conclude that the hypothesis this research set out to confirm has indeed been confirmed, considering that a significant decrease was observed in the levels of psychological distress of teachers in the experimental group, as compared to teachers in the control group.

These results support the findings of other studies that have confirmed the effectiveness of *mindfulness* techniques at reducing psychological distress (e.g., Jain et al., 2004; Martín-Asuero et al., 2005; Martín-Asuero & García de la Banda, 2007; Ostafin et al., 2006; Reibel et al., 2001; Rosenzweig et al., 2003; Shapiro et al., 1998). Furthermore, the results obtained agree with the data collected in a study

by Martín-Asuero et al. (2005) and in Martín-Asuero and García de la Banda's (2007) study, where they observed significant decreases in psychological distress after applying the MBSR program. They used the SCL-90-R as their method of evaluation, too, and measured psychological distress among healthcare professionals. Martín-Asuero et al. (2005) obtained a 49% decrease in psychological distress and a 44% decrease in medical symptoms. Martín-Asuero and García de la Banda, similarly, found decreases in psychological distress among people with higher than average distress levels in the Spanish population, and the most significant differences were observed in the dimensions depression, hostility, somatization, and anxiety. The least significant differences were reported for the phobic anxiety dimension. The results above reinforce those of the present research in that here, too, it was observed that the most statistically significant differences were produced in those dimensions (i.e., somatization, hostility, depression, and anxiety), but obsession-compulsion and interpersonal sensitivity were also included. On another note, some of the smallest amounts of change were reported for the phobic anxiety dimension. These results suggest that although the components of the MBSR program are not identical to those of Flow Meditation, the effects produced by the two on the dimensions of psychological distress, as measured by the SCL-90-R, seem to be similar. However, studies in this area must more clearly isolate the effects on psychological variables that are produced by the many different *mindfulness* training programs that exist nowadays. Additionally, we recommend conducting research with the objective of isolating the components or elements of the program that are responsible for the changes yielded, determining which are and which are not, and improving upon and/or eliminating those that are not.

On another note, the results of a study by Reibel et al. (2001) showed decreases on the SCL-90-R scale of 38%

for the global severity index, 44% for the anxiety subscale, and 34% for the depression subscale. Reibel et al., by taking follow-up measures, also demonstrated that said improvements were maintained after one year.

We believe the fact that we included a control group with a placebo largely reduced the possible effects of unspecified factors such as therapy, social support, and positive hope, on the results of this study. By the same token, the follow-up measure collected four months after completion of the training program confirms for us what Martín-Asuero et al. (2005) and Martín-Asuero and García de la Banda (2007) posited about how *mindfulness* practice can be a useful and effective technique at reducing psychological distress, as long as participants are inclined to integrate its practice into their daily lives. Also, the fact that the decreases observed in general measures of psychological distress, and in its different dimensions, were maintained four months after the intervention ended supports the notion that people who participate in *mindfulness* training programs adhere to its demands. This also emphasizes the effectiveness of the program after a moderate amount of time. In light of these results, we carefully assert, as is demanded by studies of this kind, that *mindfulness* techniques and more specifically Flow Meditation, may be useful and effective at carrying out an intervention intended to reduce psychological distress and its many different components.

As for the mechanisms or variables responsible for the changes produced by *mindfulness* techniques, it seems they may positively interfere in various ways. For example, they decrease cognitive fusion and develop cognitive flexibility, and favor abandoning control over private events (e.g., thoughts, feelings, bodily sensations, etc.), instead promoting acceptance of them (e.g., see Eifert & Forsythe, 2005; Hayes & Strosahl, 2004; Hayes et al., 1999). In addition to acceptance, organismic exposure and self-control are the other primary behavioral mechanisms said to be the basis for explaining the effects of *mindfulness* (e.g., Mañas, 2009; Vallejo, 2006). Hayes and Wilson (2003), in addition to conceiving of acceptance, exposure, and self-control as processes and mechanisms of change in *mindfulness* techniques, have also suggested others such as cognitive change and relaxation. Specifically, Coffey and Hartman (2008) have established three mechanisms by which *mindfulness* produces beneficial effects directly related to psychological distress: emotional self-control, detachment, and reduced cognitive rumination.

It is noteworthy that participants in the control group scored higher on the post-treatment evaluation than on the pre-treatment one, even though in no case did those differences turn out to be significant. This may be because the psychomotor therapy intervention conducted in the control group actually worsened teachers' levels of psychological distress. Perhaps, however, the increase was due not to the psychomotor therapy worsening their symptoms, but rather to the fact that it was ineffective at reducing them. In this

way, teachers would continue to expose themselves to their stressors, and therefore experience more and more distress. Not having been given an effective technique to reduce it, one's particular level of psychological distress may have continued to increase with time. These conclusions are tentative, however, given one of the limitations of the present study: it did not include a control group without a placebo. That would have allowed us to determine whether or not the decline experienced by the control group with a placebo was due to the simple passage of time, or to the psychomotor therapy program in which they participated.

Apart from age and gender, no other variables were evaluated, such as specialization, psychiatric history, years teaching, etc, and this would be considered as a limitation. That's why future studies should analyze the influence of the program as a function of these and other variables that could turn out to be relevant.

Finally, we consider it a priority to facilitate teachers' participation in exercises that could offset the negative effects that being an educator in this day and age implies for their levels of psychological distress. In this study, techniques that focus on acceptance of private events and not on attempting to control them seem to be particularly useful in these professionals' usual work.

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