American Research Journal of Nursing

Volume 7, Issue 1, 1-11 Pages
Research Article | Open Access
ISSN (Online)- 2379-2922
DOI : 10.21694/2379-2922.21005

AMERICAN RESEARCH JOURNALS
An Academic Publishing House

The Effect of Anonymous Group Psychotherapy Via Teleconference on Reducing Chronic Anxiety In Nurses, Victims of Workplace Harassment

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ABSTRACT

Background: *It is widely accepted that harassment in the workplace may have negative effects on the mental and physical health of nurses. We hypothesized therefore that short schema psychotherapy may reduce chronic anxiety symptoms thus improve nurses quality of life.*

Purpose: *This study is sought to identify the effectiveness of anonymous group psychotherapy via teleconference on victims of workplace harassment in nursing personnel working on NHS of Greece.*

Method: *A case-control study enrolled 14 nurses victims of workplace harassment were randomly allocated in parallel and anonymous psychotherapy groups during August 2017 and January 2018. A qualified psychologist delivered a schema method to reduce chronic anxiety in the intervention group. Validated screening tools were used to assess anxiety State-Trait Anxiety Inventory (STAI) and the Hamilton Hamilton Anxiety Rating Scale (HAM-A) to assess the intensity of the anxiety. Individuals characteristics were also assessed. P-values >0.50 were considered statistically significant.*

Results: *Significant chronic anxiety reduction were presented in the psychotherapy group compared to the control group (p-value = 0.038). In particular, individuals before the intervention (week 0, t = 0), presented with a higher level of chronic anxiety (STAI= mean 81.42) in comparison to (mean 67.28 - week 14, t = 1) after the intervention, suggesting that the psychotherapy schema was efficient. Similarly, decreased anxiety symptoms were also found after the intervention (mean 9.71 to 4.85) using the Hamilton Anxiety Scale. No other significant differences were found even though most of the participants were females.*

Conclusions: *Our data suggest that anonymous group psychotherapy via teleconference is a safe and effective method to reduce chronic anxiety in victims of workplace harassment.*

KEYWORDS: *Anonymous group psychotherapy, Teleconference, Chronic Anxiety Nursing Personnel.*

INTRODUCTION

The World Health Organization defines (WHO) workplace mobbing as "incidents where personnel are abused, threatened, or assaulted in circumstances related to their work, including commuting to and from work, involving an explicit or implicit challenge to their safety, well-being, or health". The International Labor. Organization (ILO) reports that mobbing is now an important and widespread and important problem in the workplace. The victim of workplace mobbing tries to cope with negative attitudes and behaviors such as isolation, psychological harassment, intimidation, depriving of institutional resources (Yildirim & Yildirim, 2007).

More than 50% of health professionals are subject to violence (Merecz et al, 2006). Surveys that took part in different countries have shown that nurses are under a greater risk of mobbing than other workers within their own field, as well as workers from other fields (5–7). In a survey conducted with nursing personnel by Yildirim and Yildirim (2007), it was determined that nurses encountered mobbing behaviors by 86.5%. Similar research in UK, German and Austria showed employees' exposure to violence by a superior is between 70% and 80%, and those suffering from mobbing by their superiors are more vulnerable.

'Parallel to and in conjunction with Darwin's evolutionary theory, Freud noted that anxiety was adaptive to the motivation of behavior that prompted individuals to face with threatening situations, and that intense anxiety prevailed in most psychiatric disorders (Siouisoura, 2010). It has also predominated, the definition of anxiety as: "A normal psychological or physical reaction to external events that cause a strong emotional state to people. This is a long-standing difficulty or a serious personal event that lasts for at least four (4) weeks (Mitrousi, 2014). According to Spielberger, transport concern refers to "subjective emotional state characterized by and tension and asphyxia". Permanent anxiety refers to "the predetermination of the individual to perceive specific situations as threatening and to react with the anxiety to them". Spielberger about temporary and permanent anxiety considers that the recruitment of the individual from both external and internal stimuli is considered as threatening, resulting in counteraction of temporary anxiety. Cognitive and sensory feedback mechanisms are the ones that cause high levels of transient anxiety to be recognized as unpleasant by the individual. The reaction of transient anxiety is proportional to the magnitude of the intensity of the threat. The sensory and cognitive mechanisms of feedback are those that cause high levels of temporary anxiety to be recognized as unpleasant by humans. The reaction of temporary anxiety is proportional to the magnitude of the intensity of the threat. Correspondingly, the duration of tension affects the stability of the trait anxiety response. He also says that people with a high level of permanent anxiety perceive more situations as threatening and react with more intense transient resistance reactions. Anxiety causes people to develop specific psychological protection mechanisms to achieve the reduction of temporary anxiety (Spielberger, 2010). According to a research by Haros et al., (2017) in 2014 in a study population of 113 people working in health structures, both in Athens and in the region, showed that the financial crisis increased the anxiety and fear of losing it their work, at a rate of 85.8%, while a significant percentage of the study population responded positively about the existence of work anxiety.

Group Psychotherapy is to prevent educational or psychological gaps and at the same time to cultivate skills and alternative places of behavior and thought. Group interventions, which are governed by the same principles as individual ones, have a more direct effect as they have the advantage of being accessed by more people. They are ordinarily short-term and require one or two psychologists (in the case of many patients), resulting in a reduction in the waiting list as well as the treatment costs. In group therapy, five to fifteen people meet with one or more experts and talk about what concerns them. The members of the team through feedback convey their own views of what they hear. This interaction gives group members the opportunity to test new modus of behaving and learn more about how they interact with others. The group is able to offer solutions and support (Blackmore, 2009).

Internet psychotherapy is called, distance psychotherapy, psychotherapy by videoconference, and so on. It can be achieved through video or text or even Virtual Reality Glasses. Psychological support through the internet (online via skype) has the advantage of bring people in contact with psychotherapy who could not have started under other circumstances. We refer to people living in remote areas such as islands, villages, province where access to mental counseling is difficult due to distance or even impossible. We also refer to people who have the ability to visit a healer's office. On the other hand there are some other problems, such as some kinetic difficulty or anything else that prevents them from reaching the office of the psychologist. Surveys have proven the effectiveness of online psychotherapy (Konstantinidou & Totsika, 2016).

The aim of this study was to measure anxiety among the nursing personnel working in the Primary Health Care, Emergency Departments (ED) and Intensive Care Units (ICU) of Crete. The second aim was the investigation of the effectiveness of Anonymous group psychotherapy via teleconference in the reduction of anxiety in nursing personnel who has been victim of workplace harassment.

GENERAL AND SPECIFIC OBJECTIVES

General Objective

The general objective of the study was to investigate anxiety in nursing staff in Primary Health Care, in Emergency Departments (ED) and in Intensive Care Units (ICU) of five major hospitals and 11 Health Centers in the prefecture of Crete.

Specific Objectives

- To measure anxiety among the nursing personnel
- To investigate the effectiveness of Anonymous group psychotherapy via teleconference in the reduction of anxiety in nursing personnel who has been victim of workplace harassment.

SIGNIFICANCE OF THE STUDY

The present study is expected to be used by Human Resource Management of the Hospitals and Health Care Centers to design appropriate policies that can reduct anxiety in nursing personnel who were victims of workplace harassment.

MATERIALS AND METHODS

Study design

The study involved 213 nurses from five (5) hospitals and eleven (11) Health Centers in the island Crete. Of these, 24.9% were working at the Emergency Departments, while the other 45.5% were working in Intensive Care Units and 29.6% in Primary Health Care. The survey was carried out from August 2017 to January 2018 and included the voluntary and anonymous participation of nursing personnel.

Phase I

Eligible participants were those nursing personnel who worked in selected Primary health centers, Emergency Departments and Intensive Care Units in rural and urban areas of Crete. Of the 401 nurses who were invited to participate, 213 agreed to and provided usable data. Consenting individuals (n = 213) completed an interview who used a structured questionnaire to record sociodemographic informations and anxiety disorders. Anxiety was evaluated using the Greek version of State-Trait Anxiety Inventory (STAI) and Hamilton Anxiety Rating Scale (HAM-A).

Phase II

Based on Phase I, all those who scored on the middle scale (mild to moderate severity) of anxiety and were identified according to the definition of Leymann as a victim of workplace harassment were invited to participate in Phase II of the study (which entailed receiving a comprehensive evaluation of anxiety).

Instruments

For the purpose of the present research, the French version of "Leymann's Inventory of Psychological Terror" (LIPT) instrument, the Greek Version of "Leymann Inventory of Psychological Terror", the State-Trait Anxiety Inventory (STAI) and the Hamilton Anxiety Rating Scale (HAM-A) were applied.

Leymann's Inventory of Psychological Terror consists of 45 items, each item measuring the exposure to workplace harassment the last 12 months with two response options (yes or no). In addition, two questions on the frequency were included (monthly basis, weekly, or daily) as well as the duration of workplace harassment (years and months). In five sections are grouped the 45 harassment behaviors (1) social relationships at work (criticism, no possibility to communicate, and indifference and verbal aggression), (2) exclusion (isolation, avoidance and rejection), (3) job tasks (too many tasks, no tasks, uninteresting tasks, humiliating tasks, tasks superior, or inferior to skills), (4) personal attacks (attacks on origins or opinion, rumors, ridicule and gossiping), and (5) physical violence (physical threats and sexual annoyance). According to Leymann, those who report exposure to at least one of the 45 behaviors that concerns workplace harassment the last 12 months, weekly or more, and for six months or longer are defined as victims of workplace harassment.

The State-Trait Anxiety Inventory (STAI) is a psychological inventory based on a 4-point Likert scale. It consists of 40 questions. The STAI measures two type of anxiety-state anxiety, or anxiety about an event and trait anxiety or anxiety level as personal characteristics. Higher scores are positively correlated with higher levels of anxiety. State anxiety (S-anxiety) can be defined as discomfort, fear, nervousness, etc. and the arousal of the autonomic nervous system induced by different situations that are apprehend as dangerous and is considered temporary. Trait anxiety (T-anxiety) can be defined as feelings of worry, stress discomfort, etc. that one experiences and how people feel across typical situation daily. The State-Trait Anxiety Inventory assess both state and trait anxiety separately. Each type of anxiety has its own scale of 20 questions and the scores range from 20 to 80, with higher scores correlating with higher levels anxiety. Each scale asks twenty questions each and based on a 4-point Likert scale. Low scores show a mild form of anxiety. Median scores indicate a moderate form of anxiety and high scores shows a severe form of anxiety. Anxiety absent questions impersonate the absence of anxiety in a statement like, "I feel secure." Anxiety declares questions represent the presence of anxiety e.g. "I feel worried." More examples from the STAI on anxiety absent and present questions are below. The 4-point scale for S-anxiety is as follows: (1) not at all, (2) somewhat, (3) moderately so, (4) very much so and for the 4-point scale for T-anxiety is: (1) almost never, (2) sometimes, (3) often, (4) almost always (Spielberger, 1994).

Developed in 1959 by Dr. M. Hamilton, the scale has proven useful not only in following individual patients but also in research involving many patients. The Hamilton Anxiety Rating Scale (HAM-A) is a widely used and well-validated tool for measuring the severity of a patient's anxiety. It should be administered by an experienced clinician. The major value of HAM-A is to assess the patient's response to a course of treatment, rather than as a diagnostic or screening tool. By administering the scale serially, a clinician can document the results of drug treatment or psychotherapy. HAM-A probes 14 parameters and takes 15-20 minutes to complete the interview and score the results. Each item is scored on a 5-point scale, ranging from 0=not present to 4=severe (Sensitivity: 85.7%, Specificity: 63.5%).

Permissions were obtained from the developers for the French version of "Leymann's Inventory of Psychological

Terror" (LIPT) instrument, the Greek Version of "Leymann Inventory of Psychological Terror", the State-Trait Anxiety Inventory (STAI) and the Hamilton Anxiety Rating Scale (HAM-A). The time needed to fill out the questionnaire was 20-25 minutes.

Study Population

The present research conducted among nurses working in primary health-care setting with the participation of 14 Health-care Centers and 5 Hospitals in the island of Crete. 213 nurses take part in the survey. The study was performed in the following departments: 14 Health-care Centers, 4 Emergency Departments (ED) and 11 Intensive Care Units (ICU). The collection of the sample was performed during August 2017 to January 2018. The sessions of group psychotherapy through teleconference started in March 2018 and ended in June 2018.

Inclusion Criteria for the Total Study Population

- Nursing staff had to work in hospitals and health centers that were included in the National Health System and had the same system of on-call duty to ensure the homogeneity of the sample.
- Nursing personnel with any educational level with each working relationship.
- Nursing staff from all Intensive Care Units, Emergency Departments and Primary Health Care Structures of Crete
- Written consent of the nursing staff to participate in the study.

Inclusion Criteria for the Intervention Group and the Control Group

- Participation of nursing staff, that was located on the middle scale (mild to moderate severity) of anxiety.
- Nursing personnel who have been work harassed according to the definition of Leymann defining as victims of workplace harassment those who report exposure to at least one of the 45 behaviors that concerns workplace harassment the last 12 months, weekly or more, and for six months or longer.

Exclusion Criteria for the Total Study Population

- Nursing students of any educational level.

Exclusion for the Intervention Group and the Control Group

- Nursing staff was that not identified according to the definition of Leymann as a victim of workplace harassment.
- Nursing staff identified with severe anxiety.
- Nursing staff who retired or declared resignation prior to or during interference with Group Psychotherapy via teleconference.

Ethical and Ethics Issues

There are four principles established that define the ethical foundations upon which this study was based and designed. The principle of benefit and non-harm, the principle of respect for human dignity and the principle of justice. Also this research was based on respect right to privacy and anonymity and this was secured by the following way. The questionnaires were coded with a personal code without reference to subjects' names, to ensure that exactly the same persons would respond to the questionnaire in both phases of the study and at the same time ensure their anonymity. This code was used by participants throughout the survey consisting of: the first 2 letters of their first name, the last 3 digits of their mobile phone, the last 3 letters of their surname, and the address number.

The study was approved by the Bioethics Committee of the 7th Health District of Crete (Protocol Number: 8662, 19-05-2017), University Hospital of Heraklion, Crete (Protocol Number: 15986, 05-09-2017), General Hospital of Heraklion "Venizelio Pananio", Crete (Protocol Number: 8018, 10-05-2017), General Hospital of Chania, Crete (Protocol Number: 7631, 04-05-2017), General Hospital of Rethymno, Crete (Protocol Number: 14478, 22-08-2017) and General Hospital of Agios Nikolaos, Crete (Protocol Number: 9612, 02-06-2017).

The participants were informed about the study and were given the opportunity to ask clarifying questions before participating. They were informed about the possibility to withdraw from the study at any time. Written consent was given by all participants to take part in the study and by the manufacturers of the questionnaires included in the study and are presented below. The results of the current study were announced in the Administration of the 7th Health District of Crete which was a prerequisite for obtaining the authorization to conduct the present research.

Statistical Analysis

With respect to the statistical analysis, the quantitative variables are reported based on the mean ± standard deviation (mean ± sd) as well as the median and the interquartile range (IQR), while for the qualitative variables we have the corresponding frequencies and percentages. Depending on the appropriate statistical and / or graphic controls, it is recommended that median and the interquartile range (median, IQR) are used as representative descriptive measures. The appropriate parametric and non-parametric statistical checks were also performed to investigate any differences between the three structures (ICU, Primary Health Care and ED) and the scales under study, defining the materiality level at 0.05. The statistical analysis was

performed using statistical software IBM SPSS statistics (version 21.0). A p-value <0.05 was considered statistically significant.

RESULTS

Characteristics of the Study of the Total Sample

In the present study, the participants were nursing personnel (n=213) and the majority of them 89.2% of the total sample were women and Intensive Care Units (ICU) nurses represented 45.5% of the study population. The mean age for the nursing staff of the total sample was 41.73 years. The 75.1% (n=160) of the sample were married. The majority of the total sample of the study 64.8% (n=138) was graduates of Technological Educational Institute and the 8.9% (n=18) had a master's degree. Demographic characteristics of the study population are shown in table 1. The mean length of employment was 15.78 (SD = 8.49). In regard of the average of work in the current department was 8.00 years (SD = 10.50) table 2.

Reliability of the State-Trait Anxiety Inventory (STAI) for the Total Sample

The reliability of STAI instrument expressed by Cronbach α was 0.940 suggesting high internal consistency (State anxiety: alpha=0.895, Trait anxiety: alpha=0.907).

Valuation of Anxiety for the Total Sample

Continuing, the descriptive elements of the State-Trait Anxiety Inventory **(STAI) and Hamilton Anxiety Rating Scale (HAM-A)** for the overall study population, based on scores according to the manufacturer's instructions. The following are mentioned: waist value (mean), standard deviation (sd), median, intra-quadratic range (IQR), range (in the form of minimum-maximum value).

The mean value on the scale of state anxiety for the unit STAI-Unit 1 was 40.82, while the mean value on the scale of trait or temperament anxiety for the STAI- Unit 2 was 39.03. For the total anxiety score of the State-Trait Anxiety Inventory (STAI), it was found that the total population of the study had mean value of 79.85. It appears from the Hamilton Anxiety Scale that the intensity of the anxiety symptoms has a mean value 9.72 **table 3**.

Treatment

The anonymous group psychotherapy via teleconference program consists of ten weekly sessions, each lasting 60 min, over a fourteen-weeks period. Group size was seven members and one active therapist. This treatment combination has four goals: 1) the reduction of total anxiety 2) the reduction of the intensity of symptoms of anxiety 3) the strengthening self-esteem 4) the reduction of cases of people who have been victims of work-related harassment. The present article refers to objective no. 1 the reduction of anxiety.

Characteristics of the Study Sample of the Treatment

Seven (n=7) patients began treatment and seven (n=7) subjects take part in the control group. The majority of them 85.7% were female for the control group and 100 % were female for the intervention group. Intensive Care Units (ICU) nurses represented 28.6 % for the control group and 42.9% for intervention group of the study population. Primary Care nurses represented 42.9 % for the control group and 14.3% for intervention group of the study population. Emergency department nurses represented 28.6 % for the control group and 42.9% for intervention group of the study population. The mean age for the nursing staff of the total sample was 41.42 years for the control group and 36.42 for the intervention group. The majority of the subjects of the two groups were graduates of Technological Educational Institute. Demographic characteristics of the study population are shown in table 5. The mean length of employment was 16.71 (SD = 5.55 years) for the control group and 12.71(SD = 9.42 years) for the intervention group. In regard of the average of work in the current department was 8.28 years (SD = 6.42 years) for the control group and 7.57 (SD = 7.45 years) for the intervention group table 6.

Treatment's Results

Seven (n=7) patients began treatment and seven (n=7) subjects take part in the control group (Fig. 1). There was a 100% retention rate for the 14 weeks in the treatment group, and there was a 100% retention rate for the control group. Overall, the retention rate for the study was 100%.

Tables 7 and 8 show the results of the six outcome measures for the two groups. As hypothesized, at the end of the Group Psychotherapy via teleconference - group treatment, demonstrated that there was a significant difference between the groups in favor of treatment group. Specifically, the treatment group had significantly higher scores at the end of ten sessions of group psychotherapy via teleconference.

Tables 7 and 8 show the means and the medians of the State-Trait Anxiety Inventory (STAI) and Hamilton Anxiety Rating Scale (HAM-A) for the two Groups, before (Week 0) and after (Week 14) the completion of the intervention of Group Psychotherapy.

As shown in the table 7, the survey's participants had a mean state anxiety 40.28 and a median 39.0 as shown in State - Trait Anxiety Inventory (STAI) - Section 1 before the intervention (week 0, t=0). The result of the intervention (week 14, t=1) is that state anxiety decreased even further with an average of 33.85 and a median of 32.0. The application of the statistical control t-test ruled out the existence of an interaction between the reduction of state anxiety and group psychotherapy through teleconferencing (p-value = 0.073>,

05). The participants in the control group (week 0, t = 0) had state anxiety with a mean value of 49.57 and median 53.0. The results of the control group (week 14, t = 1) showed that the state anxiety increased even more with an average value of 50.43 and a median of 53.0. The participants in the study had a mean trait anxiety value of 41.14 and a median of 42.0 as shown by in State - Trait Anxiety Inventory (STAI) - Section 2 before the intervention (week 0, t = 0). The result of the intervention (week 14, t = 1) showed that the trait anxiety decreased with an average value of 33.42 and a median of 30.0. At this point there is a statistically significant difference in the intervention group for the State - Trait Anxiety Inventory (STAI) - Section 2 (p-value 0.007). The participants in the control group (week 0, t = 0) had trait anxiety with a mean value of 48.85 and median 49. The result of the control group (week 14, t = 1) showed that trait anxiety was not significantly reduced with a mean value of 47.0 and median 50.0.

For the total anxiety of the State - Trait Anxiety Inventory (STAI) before the intervention (week 0, t = 0), it was found that the subjects had a mean value of total anxiety 81.42 and a median 79.0 and after the intervention (week 14, t = 1) had a mean value of total anxiety 67.28 with a median of 65.0. Statistically significant differences are presented for the intervention group for the total anxiety (p-value= 0.038).

The result of the intervention group showed that the total anxiety was reduced. For the total anxiety score in the control group (week 0, t = 0), it was found that the subjects had a mean value of 98.42 with a median of 102.0 and 14 weeks later, after the measurement was perfomed they had an average value of 97.42 with a median of 101.0. At this point there was no statistically significant difference for the overall STAI scale (p-value = 0.535).

Finally, it appears from the Hamilton Anxiety Scale that after the intervention the intensity of the anxiety symptoms decreased with an average value from 9.71 to 4.85. The statistical t-test showed that the mean values of the Hamilton scale differed statistically significantly between the subjects who participated in the intervention with group psychotherapy through teleconferencing (week 14, t = 1) and the subjects of the intervention group in the initial measurement (week 0, t = 0). In the control group initially (week 0, t = 0) the intensity of the anxiety symptoms was 20.14 and in the 2nd measurement (week 14, t = 1) the intensity increased to 20.42 without finding statistical significance at this point either table 8.

Prior to the intervention, six 6 (85.7) out of seven (n = 7) individuals had mild anxiety symptoms and one (n = 1) individual had mild to moderate symptoms. After the intervention all the individuals of intervention team had mild intensity symptoms while in the control team no change was found in the distributions of individuals in the intensity categories after the passage of 14 weeks in relation to the initial measurement (week 0, t = 0) table 8.

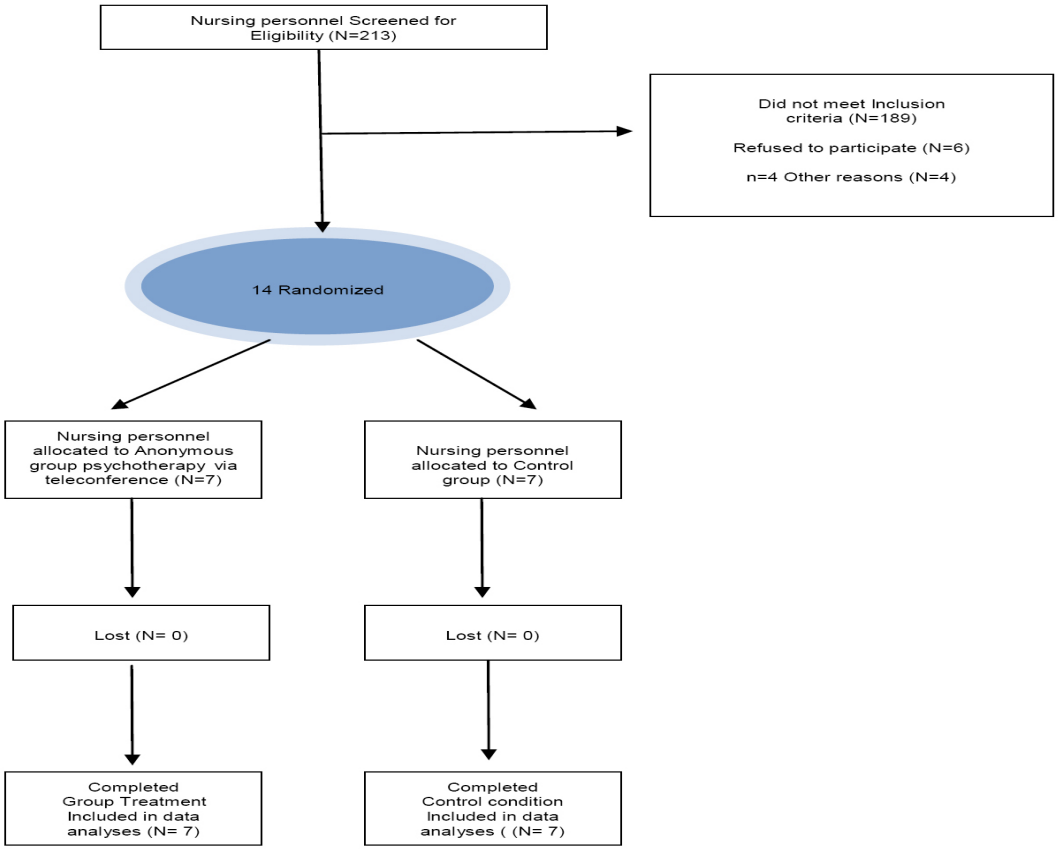

Fig 1. Consort diagram of nursing personnel flow in the randomized controlled trial.

Table 1. Characteristics of the study population (***N*** = 213).

Characteristics		n (%)
Departments		
	Intensive Care Unit	97 (45.5%)
	Primary Care	63 (29.6%)
	Emergency Department	53 (24.9%)
Sex		
	Male	23 (10.8%)
	Female	190 (89.2%)
Marital Status		
	Married	160 (75.1%)
	Unmarried	49 (23.0%)
	Widowed/ Divorced	4 (1.9%)
Educational Level		
	Secondary School	43 (20.2%)
	Technological Educational Institute	138 (64.8%)
	University	13 (6.1%)
	Master degree	18 (8.4%)
	PhD	1 (0.5%)

Table 2. Descriptive characteristics among the study population (N = 213).

Characteristics	
Age (years)	41.73±7.33*
Years of work	15.78±8.49*
Years of work in the current work position	8.00 (10.50)**

*** mean ± sd**

****median (IQR)**

Table 3. Descriptive characteristics of the scales among the study population (N = 213).

Scale	**Mean**	**SD**	**Median**	**IQR**	**Range**
State-Trait Anxiety Inventory Spielberger (STAI)					
STAI-UNIT 1	40.82	10.72	39.00	16.00	23-68
STAI-UNIT 2	39.03	10.06	38.00	13.50	22-70
STAI- UNIT 1&2 Total anxiety	79.85	19.32	77.00	25.00	47-138
ΚΛΙΜΑΚΑ ΑΓΧΟΥΣ ΤΟΥ HAMILTON*	11.41	9.27	9.00	10.00	0-50

* (IQRs) as representative descriptive measures for this scale

Table 4. Descriptive characteristics of the study's scales for the 24 victims of work harassment

Scale	**N(%)**	**Mean**	**SD**	**Median**	**IQR**	**Range**
State - Trait Anxiety Inventory (STAI)						
STAI - Unit 1		47.50	10.11	43.50	16.00	33-68
STAI - Unit 1		44.87	11.06	44.00	19.75	27-66
STAI - Unit 1 & 2		92.37	18.62	88.00	37.00	68-126
Hamilton Anxiety Rating Scale (HAM-A)		17.21	10.55	14.50	18.00	3-39

Table 5. Descriptive characteristics of individuals in the comparative study

Characteristics		**(%) Control group**	**n (%) Intervention group**
Departments	*Intensive Care Unit*	2(28.6)	3(42.9)
	Primary Care	3(42.9)	1(14.3)
	Emergency Department	2(28.6)	3(42.9)
Gender			
	Male	1(14.3)	0(0.0)
	Female	6(85.7)	7(100.0)
Marital Status			
	Married	5(71.4)	4(57.1)
	Unmarried	2(28.6)	3(42.)
	Widowed/ Divorced	0(0.0)	0(0.0)
Educational level			
	Secondary School EPAL, IEK	1(14.3)	0(0.0)
	Technological Educational University	6(85.7)	7(100.0)

Table 6. Descriptive characteristics of individuals in the comparative study

Characteristics	**Control group Mean ± SD**	**Interventiongroup Mean ± SD**
Age (year)	41.42 ± 6.34	36.42±2.57
Years of work	16.71 ± 5.55	12.71± 9.42
Years of work in the current work position	8.28 ± 6.42	7.57±7.45

Table 7. Descriptive characteristics of the two groups, the Intervention Group and the Control Group for the 14 persons of nursing staff for the State – Trait Anxiety Inventory before (Week 0) and after (Week 14)

Scale	**n (%)**	**Mean**	**Sd**	**Median**	**IQR**	**Range**	**p-value**
STAI-Unit 1							
Control group t1		50.43	9.89	53.0	11.0	33-64	0.999
Control group t0		49.57	10.67	53.0	17.0	33-64	
Intervention group t1		33.85	8.15	32.0	13.0	26-49	
Intervention group t0		40.28	5.03	39.0	8.0	35-49	0.073
STAI-Unit 2							
Control group t1		47.0	11.94	50.0	20.0	32-63	0.620
Control group t0		48.85	12.18	49.0	21.0	35-66	
Intervention group t1		33.42	4.75	30.0	9.0	29-40	
Intervention group t0		41.14	5.04	42.0	5.0	31-46	0.007
STAI- Unit 1 & 2 Total anxiety							
Control group t1		97.42	15.85	101.0	26.0	69-111	0.535
Control group t0		98.42	16.58	102.0	25.0	71-114	
Intervention group t1		67.28	12.16	65.0	22.0	56-89	
Intervention group t0		81.42	9.01	79.0	14.0	68-94	0.038

Table 8. Descriptive characteristics of the two groups, the Intervention group and the Control group for the total of 14 Nursing Staff for the Hamilton Anxiety Rating Scale, before (Week 0) and after (Week 14) the intervention.

Scale	n (%)	Mean	SD	Median	IQR	Range
Hamilton Hamilton Anxiety Rating Scale						
Control group t1		20.42	11.38	16.0	20.0	8-40
Control group t0		20.14	10.39	15.0	17.0	11-39
Intervention group t1		4.85	6.22	2.0	6.0	0-18
Intervention group t0		9.71	6.79	8.0	13.0	0-18

≤17 (mild intensity)						
Control group t1	4(57.9)					
Control group t0	4(57.1)					
Intervention group t1	(100,0)					
Intervention group t0	6(85.7)					
18–24 (mild to moderate intensity)						
Control group t1	1(14.3)					
Control group t0	1(14.3)					
Intervention group t1	0(0,0)					
Intervention group t0	1(14.3)					
25–30 (moderate to severe intensity)						
Control group t1	1(14.3)					
Control group t0	1(14.3)					
Intervention group t1	0(0.0)					
Intervention group t0	0(0.0)					
31+ (very severe intensity)						
Control group t1	1(14.3)					

DISCUSSION

The present research investigated the anxiety in a sample of 213 persons of nursing personnel in five major hospitals and eleven Health Centers in the prefecture of Crete.

As far as the working characteristics of individuals are concerned, it was found that most nurses worked in the Intensive Care Unit (ICU) and the fewer in the Emergency Department (ED). The average length of work experience of the sample was 15.78 years and the work experience in the part that worked during the survey was 8 years. In this sample, the majority of the total sample was married 75.1% and the unmarried was 23.2%. The mean age for the total sample was 41.73 years.

One of the research hypotheses of the present study was whether participation in group psychotherapy through teleconferencing is more effective in reducing the anxiety of nurses who have suffered from work harassment, than participating in a control group without treatment. Evaluating both the results of the Hamilton Anxiety Rating Scale (HAM-A) and the results of State-Trait Anxiety Inventory (STAI), it was found that state anxiety, trait anxiety, total anxiety and the severity of anxiety symptoms decreased even more after participation of individuals in the intervention group. Statistically significant differences are presented in the intervention group for the overall STAI scale (p-value = 0.038).

During the 14-week intervention period, a greater reduction in total stress was observed in the intervention group compared to the control group ($p < .05$). Regarding the Hamilton Anxiety Rating Scale (HAM-A), it was found that after the intervention the mean value of the intensity of the anxiety symptoms decreased but not significantly, while for the control group (week 14, t = 1) we had a slight increase in the mean value. We notice that the price changes for the control group and the intervention group in terms of the scores of the participants were a little more heterogeneous.

According to a study on anxiety management intervention in nursing students, individuals took part in 90-minute sessions for eight weeks. A control group was set up to which no intervention was applied. Its results for the two groups showed a significant difference in stress scores ($F = 6.145$, $p = 0.020$), (2) and a significant difference in anxiety scores ($F = 6.985$, $p = 0.013$) ($t = 1.986$, $p = 0.056$). An anxiety management program has been shown to be an effective intervention for nursing students (Yune Sik Kang et al, 2009).

Another study sought to develop a program to manage stress and evaluate the effectiveness of the program in reducing the stress experienced by nursing students. Post-test analysis showed that the intervention group had significantly lower stress than the control group ($p < .05$) (Johansson, 1991).

Finally, according to a postgraduate thesis on the implementation and evaluation of a psychoeducational program for the management of work anxiety in nursing staff, the study participants had very low anxiety regarding physical symptoms before joining the intervention group. The result of the intervention was that the anxiety of the respondents was further reduced. From the statistical results concerning the scale, it is observed that the reduction of stress, in terms of mainly psychosomatic symptoms was not statistically significant ($p = 0.217$) and the scores of the participants had a slightly higher inhomogeneity after the intervention. The result given by the application of the intervention, was that the anxiety, in terms of emotion of the respondents was significantly reduced (Giannaki, 2015).

Limitations of the Study

Some methodological limitations of the present study must be mentioned.

First, the female population constituted the largest proportion and this is due to the fact that the majority of nurses are women.

Second, the uncertainty and fear of stigmatizing the subjects under study can also be considered as limitations of the present study.

Third, the long duration of the study prevented hospital staff from participating in the study.

And finally, the anonymous participation of subjects in the group Psychotherapy by teleconference chosen as an intervention to avoid stigmatization does not allow the dynamic of the group through the participants' faces show.

Conclusions

The evaluation of the results shows that workplace harassment is an existing reality with high rates in nursing personnel in Crete. The highest percentage of the participants has average self-esteem.

In conclusion, the findings of the present study suggest that the implementation of group psychotherapy via teleconferencing can lead to significant favorable changes in enhancing self-esteem. In addition, it was found from the results of the research that interventions when carefully designed and regulated can yield favorable results.

Future Research

Further research in the future will be able to confirm the long-term effects of corresponding interventions to enhance self-esteem. According to the results of the study, the following areas of research were proposed:

- Studies for the reduction of anxiety in the work environment of nursing staff in order to identify the reasons for the increased percentages of above mentioned.
- Studies evaluating interventions that reduct anxiety, for example, make a comparison between two different interventions of group psychotherapy via teleconferencing and personal psychotherapy via teleconferencing.
- Intervention studies evaluating the use of mobile applications e.g mobile phone, tablet, etc. and the use of artificial intelligence through an independent online platform to connect anonymous victims of workplace harassment with support groups at any time.
- Research efforts on the implementation and evaluation of programs related to the management of anxiety and counseling of nursing staff suffering from professional harassment

Acknowledgments

This project would not be possible without the help from the nurses participating in the study (Asimina Evagelia, Stamataki Eva, Antonaki Kostantina, Terzaki Aikaterini, Marinaki Sofia), the PHC physician (Meramveliotakis Emmanouil) and the postgraduate student (Linaritakis Dimitrios) involved in participants recruitment and data collection in phase I of the study. Papastefanaki Anna helped for the technical editing of the text. Finally, we would like to thank all participants nursing personnel for taking part in this study.

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Citation: Maniou Maria, Kleisiaris Christos, et al., "The Effect of Anonymous Group Psychotherapy Via Teleconference on Reducing Chronic Anxiety In Nurses, Victims of Workplace Harassment", American Research Journal of Nursing, Vol 7, no. 1, 2021, pp. 1-11.