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ORIGINAL ARTICLE

AROMATHERAPY FOR ANXIETY AND STRESS OF NURSING TEACHERS

AROMATERAPIA PARA A ANSIEDADE E ESTRESSE DE PROFESSORES DE ENFERMAGEM

AROMATERAPIA PARA LA ANSIEDAD Y EL ESTRÉS DE PROFESORES DE ENFERMERÍA

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ABSTRACT

Objective: to investigate the effectiveness of the use of aromatherapy with essential oils of lavender (*Lavandula angustifolia*) or ylang-ylang (*Cananga odorata*), associated with massage, for the relief of anxiety and stress. ***Method:*** this is a quantitative study, exploratory-descriptive and correlational with quasi-experimental design of type before and after. We performed a chart with six sessions of massage with aromatherapy with 21 teachers of nursing checked by means of psychological parameters and biophysiological, before and after each session of the intervention. There were applied, at the beginning and at the end of the intervention, the State-Trait Anxiety Inventory and the List of Symptoms of Stress. The results were analyzed with the Student t test, whereas p-value<0.05, and organized tables that illustrate them. ***Results:*** there was found that blood pressure presented effective reduction in some aromatherapy sessions. There was observed that the stress obtained reduction of greater magnitude when compared to anxiety and the group that used ylang-ylang, a greater reduction of anxiety then the group lavender. ***Conclusion:*** it is demonstrated partial effectiveness of aromatherapy associated with massage, using essential oils of lavender or ylang-ylang, in relation to the biophysiological parameters. ***Descriptors***: Nursing Education; Anxiety; Occupational Stress; Aromatherapy; Complementary Therapies; Nursing.

RESUMO

Objetivo*:** investigar a efetividade do uso da aromaterapia com os óleos essenciais de lavanda (*Lavandula angustifolia*) ou ylang-ylang (*Cananga odorata*), associada à massagem, para o alívio da ansiedade e do estresse. ***Método*:** trata-se de um estudo quantitativo, exploratório-descritivo e correlacional com delineamento quase-experimental do tipo antes e depois. Realizou-se uma intervenção com seis sessões de massagem com aromaterapia com 21 professores de enfermagem verificado por meio de parâmetros psicológicos e biofisiológicos, antes e após cada sessão da intervenção. Aplicaram-se, no início e ao término da intervenção, o Inventário de Ansiedade Traço-Estado e a Lista de Sintomas de Stress. Analisaram-se os resultados com o Teste t de Student, considerando p-valor<0,05, e organizaram-se tabelas que os ilustram. ***Resultados*:** verificou-se que a pressão arterial apresentou redução efetiva em algumas sessões de aromaterapia. Observou-se que o estresse obteve redução de maior magnitude quando comparado à ansiedade e o grupo que utilizou ylang-ylang, maior redução da ansiedade que o grupo lavanda. ***Conclusão: demonstra-se efetividade parcial da aromaterapia associada à massagem, utilizando óleos essenciais de lavanda ou ylang-ylang em relação aos parâmetros biofisiológicos. ***Descritores*:** Docentes de Enfermagem; Ansiedade; Estresse Ocupacional; Aromaterapia; Terapias Complementares; Enfermagem.

RESUMEN

Objetivo: investigar la eficacia del uso de la aromaterapia con óleos esenciales de lavanda (*Lavandula angustifolia*) o ylang-ylang (*Cananga odorata*), asociado con el masaje, para el alivio de la ansiedad y el estrés. ***Método:*** se trata de un estudio cuantitativo del tipo exploratorio-descriptivo y correlacional, con diseño cuasi-experimental del tipo antes y después. Hemos realizado un gráfico con seis sesiones de masaje con aromaterapia con 21 maestros de enfermería verificados por medio de parámetros psicológicos y biofisiológicos, antes y después de cada período de sesiones de la intervención. Aplica si, al comienzo y al final de la intervención, el State-Trait Anxiety Inventory y la lista de síntomas de estrés. Los resultados se analizaron con la prueba t de Student, mientras que el valor de p<0.05 y organizaron tablas que ilústrenlas. ***Resultados:*** se encontró que la presión arterial presentó una reducción eficaz en algunas sesiones de aromaterapia. Se observó que el estrés obtenido reducción de mayor magnitud en comparación con ansiedad y el grupo que usó ylang-ylang, una mayor reducción de la ansiedad que el grupo de lavanda. ***Conclusión:*** se demostró la eficacia parcial de la aromaterapia asociados con el masaje con aceites esenciales de lavanda o ylang-ylang, en relación con los parámetros biofisiológicos. ***Descriptores***: Docentes de Enfermería; Ansiedad; Estrés Laboral; Aromaterapia; Terapias Complementarias; Enfermería.

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INTRODUCTION

Constitutes the Statute of Nursing a set of work processes, among which identifies Teaching.[1] Implies the incorporation of a complex theoretical-philosophical framework that supports the development of its assignments for the nurse who becomes a teacher. It establishes a dyad formed by the actions of the process Teach and Assist, requiring a certain intentionality on the part of the Faculty of Nursing, resulting in satisfaction, but also, suffering.[2-3]

It has taken the occupational stress as a research topic among teachers in higher education. Recognizing the perceptions built by teacher nurses, we observed how the conditions of work and the different levels of intensity of stress affect the living conditions of teachers.[4-5]

It observes by means of scientific deepening, the association between occupational stress and the development of burnout consequently that reaches professionals who are in direct contact with people, among them: health and education. Differentiate from stress by affecting the work environment and in negative attitudes that entail losses for both the worker, for both the institution and the user.[6] It is, thus, the professional exhaustion as resulting from a type of long-term stress associated to the work environment.[7]

It is evident in the emotional level another interface, the association between stress and anxiety that encompasses physiological and psychological factors in the development of symptoms such as tachycardia, increased blood pressure levels, bowel changes, insecurity, apprehension and fear. Assign that, historically, anxiety to the evolution and the preservation of man, and in the contemporary world, to life in society, whose characteristics include competitive success and adaptation of the individual. It is pathological when there something specific that inspire or when takes exacerbated proportions and damping.[8]

There is, in the search for non-pharmacological strategies for coping with stress and anxiety, Complementary and Integrative Practices in Health (PICS) that enable good results under the conditions of life of people suffering from various diseases, among them, stress and anxiety.[9]

It should be noted that the complementary therapies address the subject in a holistic manner and are represented by safer technics, non-invasive and with favorable cost-effectiveness ratio, listed in responsibility between the professional and the user. Triggers, with a growing interest by therapies that align with PICS.[10]

Set in the Unified Health System (SUS), by means of Ministerial Decree N 971 from 17th July 2006, known as the National Policy on Complementary and Integrative Therapies (PNPIC). It aims at ensuring the completeness in health care.[11] In the years 2017 and 2018, by means of Decree N 145 and 702, respectively, broadened the menu offered for 29 therapeutic resources, among these, the aromatherapy.[12-13]

It defines as complementary therapy that uses essential oils extracted from aromatic plants for the treatment of clinical symptoms and the promotion of health and well-being of the individual integrating body, mind and spirit. It assumes that the benefits of aromatherapy are due to the characteristic and specific chemical constituents of the essential oils[14-15], many of whom have action in relief from stress and anxiety.

Explores the therapeutic potential of lavender (*Lavandula angustifolia*) by the pharmaceutical industry, cosmetics, food and perfumery. Cites the importance for aromatherapy, due to its chemical composition in which are substances such as lanolin, linalil Acetate, 1.8-cineole and ß-ocimene. Attentive to the first two because of the greater degree of importance reaching, respectively, up to 51% and 35% concentration.[15-16]

It applies to the outcomes of stress and anxiety, the essential oil of ylang-ylang (*Canaga odorata*), as well as to decrease blood pressure, sedation, relaxation and performance in mood and cognitive performance. These therapeutic properties are due to the chemical constituents, such as ß-caryophyllene (22%), linalool (40%), and benzyl acetate (15%) extracted from the leaves and flowers.[17]

It proposes and develops, in this study, a strategy of careful aligned to the PICS based on the use of aromatherapy to assist nursing teachers to cope with the anxiety and stress that are associated with the performance of their professional responsibilities. It was established as a research question: "What is the effectiveness of aromatherapy applied through massage, using the essential oil of *Lavandula angustifolia* or *Canaga odorata* at a concentration of 3% diluted in neutral cream, to the stress and anxiety of teachers of nursing in a public university?"

OBJECTIVE

- To investigate the effectiveness of the use of aromatherapy with essential oils of lavender (*Lavandula angustifolia*) or ylang-ylang (*Cananga odorata*), associated with massage, for the relief of anxiety and stress.

METHOD

This is a quantitative study, field research, exploratory-descriptive and correlational with quasi-experimental design of type before and after.[18] It was developed in a public institution of higher education in the countryside of the State of São Paulo.

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There were composed inclusion criteria for the composition of the sample: being a teacher of that institution, teaching lessons for the undergraduate nursing course, obtain a minimum score of 35 points on the State-Trait Anxiety Inventory - subscale Condition,[19] accept by listening the aroma of the essential oil of *Lavandula angustifolia* and *Cananga odorata*, and declare not to be pregnant. Holiday absence during the period of collection and loss of follow-up of the intervention were the exclusion criteria adopted. There was forwarded electronically an invitation to the institutional email address of 81 teachers, of whom 27 (33.34%) demonstrated interest. Between the months of August and September 2017, recruited and randomly allocated participants in one of the intervention groups: group lavender or ylang-ylang group. It is demonstrated in Figure 1 the quantitative distribution of the sample between the study groups, as well as the follow-up to the steps of the research:

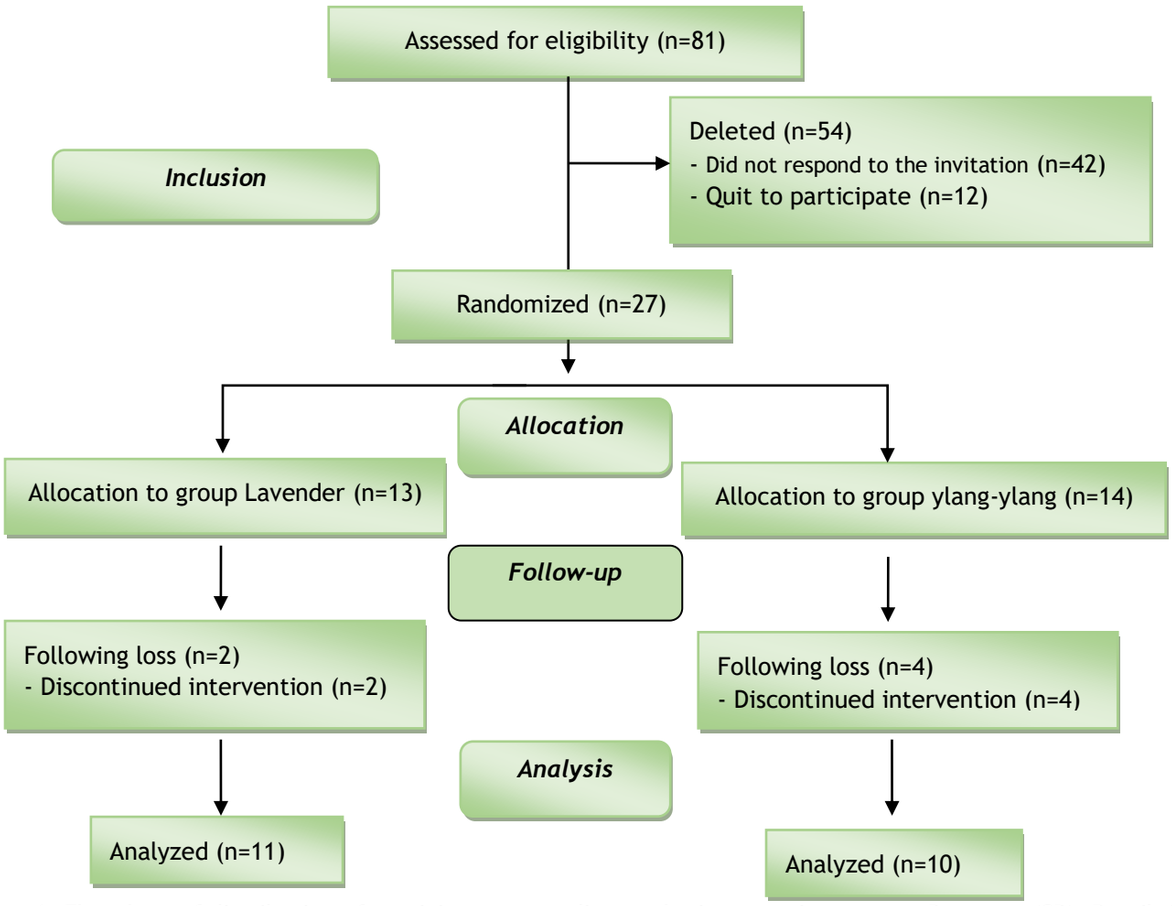

Figure 1. Flowchart of distribution of participants according to the intervention groups. Botucatu (SP), Brazil, 2019.

The intervention was performed between the months of August, September and October 2017, constituted of six sessions of massage with aromatherapy, with duration of 10 ± 5 minutes each and with an average interval between sessions of 48 hours. Selected as the effleurage massage technique, applied to the posterior cervical and thoracic regions; selection of massage technique has been guided by not exerting pressure on the area massaged, which could stimulate meridian points and thus exert confounding factor in the results.[15]

Standardized the sequence of the massage in 12 sequential steps, described as follows: (a) Relaxation and stretching of the shoulders and neck; (b) Application of aromatic solution; (c) Superficial effleurage between the scapula, meaning the vertebral column for the shoulders (5x); (d) Deep paravertebral effleurage, caudal direction - cephalic and involving the trapezius muscle when finishing the movement (5x); (e) Superficial lateral cervical effleurage and trapezius muscle sense medium-lateral (5x); (f) Deep posterior cervical effleurage alternating right and left side in the caudal direction - cephalic (10x); (g) Deep lateral cervical effleurage (5x); (h) Repetition of the previous movement, whereas the contralateral side; (i) Deep cervical effleurage with the index and middle fingers; (j) Repetition of the fourth movement; (k) Repetition of the fifth movement; and (l) Relaxation and stretching of the neck and shoulders.[15]

Joined the group Lavender aromatherapy with massage by the use of an aromatic solution prepared with neutral cream which has been diluted the essential oil of *Lavandula angustifolia* at a concentration of 3%; the group ylang-ylang, by its turn, we used the essential oil of *Cananga odorata* also at a concentration of 3%. So manipulated both the creams by a nurse with training in aromatherapy and on average it was applied in each participant a volume of 10mL of

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this solution/session. It should be emphasized that the results of previous research carried out by this group of researchers based on the use of this concentration of essential oil.[15,20]

It was verified that the effectiveness of the intervention by means of psychological and biophysiological parameters based on the theoretical to the anxiety and stress that ratifies the correlation between these two symptoms, as well as the relationship we have with the biophysiological parameters. Considering the psychological outcome, before the beginning of the first massage session and at the end of the sixth, there was applied two questionnaires: the State-Trait Anxiety Inventory - subscale E (STAI-E)[19] and the List of Symptoms of Stress (LSS).[21] Held for biophysiological outcome the measurement of Heart Rate (HR), of the Systolic Blood Pressure (SBP) and Diastolic Blood Pressure (DBP) and Oxygen Saturation ($SatO_2$), immediately before and after each session of massage.

It is clarified that the STAI-E corresponds to a scale based on 20 self-evaluated assertions related to the emotional aspects, transient, stressed by the experience of anxiogenic feelings. It punctuates each statement as a Likert scale of 1 to 4 points, classifies it the sum of the respondent about the state of anxiety as low (from 20 to 34 points), moderate (35 to 49 points), high (from 50 to 64 points) and very high (from 65 to 80 points).[19]

It explains that the LSS consists in a ratio of 59 psychophysiological and psychosocial symptoms, mark alternatives concerning the frequency organized according to a Likert scale ranging from never (0), few times (1), often (2) or always (3). Scores from zero to 177 points and stratifies into five levels of stress: null (zero to 11 points), low (12 to 28 points), medium (29 to 60 points), high (61 to 121 points) and over-high (above 120 points).[21] In addition, we applied a sociodemographic questionnaire elaborated by the authors in order to characterize the population studied.

Resign to a mask in Microsoft Excel® spreadsheet for organization of the data that have been processed by the Statistical Analysis System (SAS), version 9.3. Operationalized the normality test, because there was a normal distribution, there was applied the Student t test for continuous variables for the analysis of the data before and after the intervention, considering the Confidence Interval (CI) of 95% and p-value < 0,5.[18]

Submitted the project of this research to ethical procedures[22] and there was approved by the Ethics Council on Research (CEP) of the Faculty of Medicine of Botucatu, obtaining assent on 8th August, 2017 (CAAE: 71373517.9.0000.5411). In addition, registered in the Brazilian Registry of Clinical Essays, under the identifier RBR-4gzmt4.

RESULTS

It was a sample with 21 teachers distributed in groups lavender and ylang-ylang, respectively 11 and 10 participants. Predominated the female gender, aged above 51, respondents of Catholicism, PhD at the level of training and over 31 years in the profession. Presents the sociodemographic characteristics in Table 1, as well as the statistical comparison of these variables between the two groups of research and, in this sense, it should be emphasized that only the age range from 61 to 70 presented a difference by ratifying the homogeneity of the sample.

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Table 1. Relative and absolute distribution of sociodemographic characteristics and analysis of homogeneity of the groups lavender and ylang-ylang. Botucatu (SP), Brazil, 2019.

Variables	Lavender Group		Ylang-Ylang Group		P-value§
Gender	N	%	N	%	
Female	10	90,91	9	90%	1,0
Male	1	9,09	1	10%	1,0
Age					
31-40	3	27,27	1	10%	0,6524
51-60	7	63,64	3	30%	0,2696
61-70	1	9,09	6	60%	0,0446
Marital Status					
With a partner	5	45,45	7	70%	0,4879
Without a partner	6	54,54%	3	30%	0,4879
Religion					
Catholic	7	63,64	6	60%	1,0
Other	2	18,18	3	30%	0,9028
Not declared	2	18,18	1	10%	1,0
Family income*					
5 or more	11	100,00	10	100%	1,0
Schooling					
Mastership	2	18,18	5	50%	0,2795
Doctorate	6	54,55	1	10%	0,0893
Post-doctorate	1	9,09	3	30%	0,5078
Free teaching	2	18,18	1	10%	1,0
Time in the profession					
11 - 20 years	3	27,27	3	30%	1,0
21 - 30 years	2	18,18	3	30%	0,9028
>31 years	6	54,55	4	40%	0,8188
Time in the institution					
1-10 years	3	27,27	1	10%	0,6524
11-20 years	2	18,18	5	50%	0,2795
>21 years	6	54,55	4	40%	0,8188

§Test of Proportions. *Calculated based on minimum wages.

Characterized, in-group Lavender, the absence of smoking and 8 (72.73%) participants reported consuming alcoholic drink in character of low risk, three participants (27.27%) reported health problems in drug treatment, among them, rheumatoid arthritis (methotrexate), breast cancer (tamoxifen), hypertension (indapamin). It was observed in group ylang-ylang, one (10%) participant smoker, six (60%) use of alcoholic beverage in character of low risk and the same amount stated health problems in medical treatment: uterine hyperplasia (oral contraceptives), endometriosis (oral contraceptives), gastritis (omeprazole) and diabetes mellitus type 2 (metformin and canaglifozin). Declared itself in both groups a percentage greater than 80% about the knowledge and access to integrative and complementary practices in moments prior to this data collection.

Distributed biophysiological parameters in tables 2 and 3. Indicate the values for the systolic and diastolic pressures in Table 2 and observed that the group Lavender, when compared with ylang-ylang, presented results with more sessions in which observed statistical difference.

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Table 2. Statistical analysis of systolic and diastolic blood pressure outcomes before and after intervention in lavender and ylang-ylang groups. Botucatu (SP), Brazil, 2019.

Groups	Sessions	Systolic Blood Pressure					Diastolic Blood Pressure				
		Pre		Post		*p-value	Pre		Post		*p-value
		A	SD	A	SD		A	SD	A	SD	
Lavender	1	113,64	14,33	104,55	10,35	0,10	74,55	6,87	71,82	6,03	0,33
	2	109,09	9,43	95,45	8,20	**0,001**	74,55	6,87	69,09	5,39	0,051
	3	107,27	9,04	93,64	9,24	**0,002**	73,64	8,09	63,64	8,09	**0,008**
	4	110,00	17,88	103,64	12,86	0,34	75,00	10,72	69,55	7,89	0,18
	5	112,73	11,90	101,82	12,50	**0,049**	77,27	12,72	68,64	8,39	0,07
	6	114,55	13,68	100,91	10,44	**0,016**	73,18	8,44	61,36	10,97	**0,010**
Ylang-ylang	1	105,00	13,54	96,00	10,74	0,11	72,50	9,78	61,50	2,03	**0,037**
	2	106,50	10,01	97,50	12,74	0,09	70,50	7,61	59,50	10,65	**0,016**
	3	102,00	13,99	98,00	13,16	0,46	65,00	8,49	60,00	8,16	0,19
	4	105,00	9,71	96,50	9,44	0,06	66,50	8,83	61,50	8,18	0,20
	5	99,50	15,35	97,00	14,94	0,71	65,00	12,69	61,00	13,70	0,50
	6	108,50	15,28	101,00	13,70	0,26	67,00	12,51	60,00	14,14	0,25

* P-value according to t-Student. Standard deviation (SD). Average (A).

Illustrates by means of Table 3 the behavior of the variables of heart rate and oxygen saturation before and after the six sessions of massage. Identifies that this last variable remained stable in the two phases of data collection, a fact that was confirmed by statistical analysis did not indicate a statistically significant reduction. Referring to the heart rate, there was a variation before and after the intervention and although it has shown a decrease in all the averages of the sessions of the intervention was not achieved significance level.

Table 3. Statistical analysis of outcomes heart rate and oxygen saturation before and after intervention in lavender and ylang-ylang. Botucatu (SP), Brazil, 2019

Groups	Sessions	Heart Rate					Oxygen Saturation				
		Pre		Post		*p-value	Pre		Post		*p-value
		A	SD	A	SD		A	SD	A	SD	
Lavender	1	74,36	10,75	72,55	6,67	0,14	96,45	0,93	96,73	2,10	0,70
	2	74,55	10,16	72,09	10,77	0,58	96,64	1,56	96,73	1,96	0,81
	3	72,82	13,29	72,00	13,96	0,88	96,18	1,99	96,73	1,70	0,90
	4	78,00	14,36	74,27	9,64	0,48	96,64	1,91	96,73	2,52	0,40
	5	77,82	16,07	75,64	14,26	0,73	96,55	1,50	96,73	1,66	0,59
	6	75,00	7,64	74,18	8,48	0,81	96,27	1,19	96,73	1,54	0,64
Ylang-ylang	1	85,20	14,27	81,50	10,58	0,51	95,50	1,71	94,80	2,14	0,43
	2	82,10	10,50	79,80	8,81	0,60	94,90	1,44	95,00	1,33	0,87
	3	84,60	16,25	9,20	12,70	0,41	95,20	2,39	96,00	1,88	0,41
	4	84,60	12,83	1,90	11,89	0,63	95,20	2,14	95,80	1,68	0,49
	5	83,00	10,01	77,70	4,00	0,14	94,90	1,52	95,40	2,31	0,57
	6	74,36	10,75	72,55	6,67	0,14	94,30	1,56	94,80	1,98	0,54

* P-value according to the t-Student. Standard deviation (SD). Average (A).

We present the results of psychophysiological variables in Table 4 represented by statistical analysis of the STAI-E and the LSS, before being initiated the intervention and at the end, which occurred after the sixth intervention. There is a decrease in the score from both instruments, and the score of the LSS that whose reduction was higher when compared to the STAI-E. It is evident that while the stress reduced the score in a percentage of 8.72% (lavender) group, and 8.90% (group ylang-ylang); the anxiety has reached the magnitude of 45.14% and 34.28%, respectively. There was not identified in both outcomes reduction with statistical significance.

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Table 4. Statistical analysis of Trait Anxiety Inventory Score-State (State Subscale) and list of symptoms of stress before and after the intervention of massage with Aromatherapy. Botucatu (SP), Brazil, 2019.

Groups	Pre-intervention		Post-intervention		P-value*
	Average	SD	Average	SD	
State-Trait Anxiety Inventory-State Subscale					
Lavender	43,82	4,19	40,00	6,60	0,1211
Ylang-Ylang	44,90	6,65	40,90	7,32	0,2175
List of Symptoms of Stress					
Lavender	35,00	12,08	23,00	18,30	0,0846
Ylang-Yang	46,30	27,37	25,40	15,23	0,1052

*P-value according to the t-Student. Standard deviation (SD).

DISCUSSION

Indicate, through tools used for psychological evaluation, two characteristics of this group of teachers: have anxiety in moderate level and average stress. Corroborate the results of a previous study that identified in the literature psychosocial risks that relate to the work of the Faculty of Nursing, among these, stress and anxiety are listed.[23]

It is emphasized that these results demonstrate that the role played by the Faculty of Nursing involves a complex set of elements related to the professional assignment and the particular context of life. Exemplify situations of relational and communicational barriers, labor condition and the overload of activities, the quest for career progression, in addition to the dual role of women as factors anxiogenic that culminate in a summation of responsibilities: teach, supervise and take care.[4,7]

Presented in the participants' sociodemographic characteristics a profile predominantly female, with average age of 51 to 60, Catholic religion, family income greater than five minimum wages, featuring more than 21 years in the institution where the study was developed, and more than 31 years exercising teaching, the level of doctorate was the most frequent in variable training. It was observed in the distribution of age groups, a characteristic represented by the absence of participants aged between 41 and 50, indicating a social context with a decrease in the recruitment of teachers, impacting on their dynamics and sustainability.

Explores, among these variables, the females as prevalent in nursing agreeing with other studies. It should also be taken into account, a particularity of the sample in this study, join two professions historically performed by women: nursing and education.[24-25]

Considering the other characteristics, other studies align to the media age and family income, but differ in the level of training, because, in these investigations it is observed the predominance of master.[24-25] It is justified by the fact that the institution that hosted this research serves as a criterion for hiring teachers the level of doctorate.

Do not observed between the psychological parameters favorable results for the aromatherapy is using the essential oil of lavender or ylang-ylang. Identified a decrease in the score of the two instruments - IDATE and LSS, after having been held six sessions of the intervention, however, without magnitude statistical significance. There is difficulty in finding effective results in the psychological parameters, by means of application of self-scales, in other studies of aromatherapy.[20,26]

It is evident, however, the change between the categories of stress identified in the comparison of mean score before and after the intervention: of medium to low level of stress. Note that the average reduction of the population for this outcome was greater among the group of ylang-ylang group than in lavender, which leads to the hypothesis that the first essential oil can be more assertive to the characteristics of the group of participants.

It was investigated the effectiveness of aromatherapy with 36 undergraduate students through the application of the same scales. He composed a speech with seven sessions, with a duration of 10 minutes, twice weekly, using the essential oils of lavender (*Lavandula officinalis*), sour orange (*Citrus aurantium var. amara*), ylang ylang (*Cananga odorata*) and cedar (*Cedrus atlantica*), and two drops diluted in 5 mL of saline solution that have been inhaled. There was a reduction of 24% and 18% in the stress levels of state anxiety; while the control group only reduced the stress in 11%.[27]

In comparing the results of this research, indicates that the results for anxiety were higher than the stress, the use of essential oil of ylang-ylang at a concentration of 3% applied dermal, and olfactory showed better results than the synergy used.

It outlined a placebo-controlled study, and unicego using essential oils of scents of lavender (*Lavandula officinalis*) and geraniums (*Pelargonium graveolens*) 0.5% each diluted in 20g of polymer gel, for a sample of 39 nursing students. Self-applied this solution in the region of the wrists, the body of the sternum, periumbilical region and soles of feet, with circular movements three times a day for 60 days.

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Demonstrated with these results similarities between those identified in this study when the use of essential oils of lavender and geranium were not statistically significant, but they point to decrease anxiety in the group that used lavender.[26]

We used the STAI-E as a tool to verify the effectiveness of the inhaled aromatherapy for anxiety of nurses using a blend with four essential oils (*Eriocephalus punctulatus, Citrus bergamia, Citrus lemon and Citrus aurantium var sinensis*). Identify results similar to those observed in this investigation, although the essential oils, aromatic method applied and the level of anxiety are distinct.[27]

In this sense, measured the psychological outcome by means of a visual analogue scale that showed no favorable results in the concentration of 1% or 20% with citrus essential oil,[28] by aligning the results found in the subjective impressions of the participants of this research.

Analyzes that the heart rate showed a decrease in all six sessions, but the difference between the averages of these values was not statistically significant in any of the groups. Differs from a study that applied in massage the essential oils of lavender (*Lavandula angustifolia*) and geraniums (*Pelargonium graveolens*) at a lower concentration (0.5% each oil) for anxiety of patients in psychiatric hospitalization showed a decrease, with statistical significance, this parameter in all six sessions of massage.[20]

It was demonstrated effectiveness of other cardiovascular parameters (nasal temperature and heart rate variability) in the use of aromatherapy inhalation using the citric essential oil in healthy adults when subjected to a stressing situation induced. It has been proven that, through these outcomes, that the inhalation to 1% was sufficient to produce a balance between sympathetic and parasympathetic systems.[29]

It was identified in the sample isolated blood pressure differences in a few sessions, for example, the systolic pressure of the lavender group received four sessions with reduction of values, while the group ylang-ylang not obtained any session. In addition, decreased diastolic blood pressure values in two sessions were statistically significant for both study groups. Compared to a previous study performed with 46 nursing workers using the essential oil of ylang-ylang (*Cananga odorata*) in neutral gel self-administered in the regions of the wrist and the sternum for 46 nursing workers also not identified a decrease in blood pressure.[30]

Justifies the use of outcome of oxygen saturation due to the fact that the essential oil in aromatherapy possess properties broncodilatadoras,[15] but in this research there has been no change in values before and after the intervention and is not identified in the literature review studies that could sustain the discussion of this finding. It is emphasized that the study was applied to participants presenting a moderate state of anxiety and by means of previous investigations, it is stated that in populations with state of anxiety is high or very high, it is expected greater magnitude of the effect of aromatherapy.[20,26]

Contextualizes the scarcity of studies exploring the use of aromatherapy to relieve stress and anxiety related to the teaching work, for further research, it is suggested the use of more robust methodological designs with the aim of strengthening aspects of the effectiveness of aromatherapy through clinical designs and quasi-experimental studies extending the discussions between the various routes of administration, and the possible indications of essential oils for the characteristics of this population.

Ratifies the nursing as a profession that is dedicated to the use of aromatherapy for the care, aims to contribute to the systematization of a strategy applied during the work to relieve the stress and anxiety that affect the teachers of public university. It is, moreover, a practical and concrete way of empowering the care with tools introduced in the Health Unic System favoring the expansion of the use and the discussion of aromatherapy are included in the year of 2018 in the National Policy on Complementary Therapies.[13]

It relates as limitations of this research work environment, the context and the design of the study. Identical to the location of the room where massage sessions were conducted a flow of people and even though the doors were always closed, it was perceived an interference. Note that lead to intervention in the same location where the participants worked favored by facilitating access, however, undertook the quality of participation. It is observed when drawing that the number of participants in the hindered the statistical analysis.

Highlights the importance of conducting qualitative studies or mixed methods that allow you to use the experience of the participants about aromatherapy, given the high frequency of favorable Reports the intervention carried out by the participants of this research.

CONCLUSION

It was showed partial effectiveness of aromatherapy with lavender essential oil and ylang-ylang for anxiety and stress of teachers of nursing. It is based this result considering the decrease in individual sessions of massage with aromatherapy, parameters biofisiológicos, more specifically, the arterial pressure, in the implementation of the use of lavender or ylang-ylang, at a concentration of 3%, diluted in neutral

cream. Pointed to decrease the values of cardiac frequency and psychological parameters without, however, reach magnitude for a statistically significant reduction.

It is suggested, on account of the results of this research, the delineation of other studies involving a larger number of participants affected with more intense levels of stress and anxiety, applying an aromatic formulation with a greater concentration of essential oils and with mixed methodological designs and qualified.

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