

HUMAN PHYTOREHABILITATION

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ESSENTIAL OIL OF *NEPETA CATARIA* AND ITS EFFECT ON PSYCHOPHYSIOLOGICAL STATE OF ELDERLY PEOPLE BREATHING IT IN LOW CONCENTRATION**Valentina Valerievna Tonkovtseva, Timur Rustemovich Bektambetov, Nadezhda Nikolayevna Bakova, Aleksandr Mikhailovich Yarosh**

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Introduction

Essential oil (EO) of *Nepeta cataria* L. is well-known as an aphrodisiac first of all [7]. It was revealed as a spasmolytic preparation as well [6]. Being concentrated in the air of 1 mg/m³ it reduces personal anxiety, improves general condition, mood, work capacity, vivacity and attentiveness [5].

Important task is to minimize body burden during aromatherapy due to reduction of the EO concentration in the air. It particularly concerns elderly people. But at the same time aromatherapy effect is impossible to the full.

Research objective is to investigate *Nepeta cataria* L. EO effect breathing it in low concentration on some functions of human central nervous system and cardiovascular system to find out if it does for aromatherapy.

Objects and methods

Researches were carried out in a group of 20 people, mainly women aged at 50-80 years old. The same by composition and number group was used as a control variant. Tested people of a control group were in rest listening to psychorelaxing record for 20 minutes. Experimental group were placed in the same room during the same time listening the same psychorelaxing record but breathing evaporated EO of *Nepeta cataria* L. till the final concentration in the air of 0,1 mg/m³. Tests were conducted before and after procedures.

To assess procedure effect on cardiovascular system we measured heart rate (HR), systolic (BPS) and diastolic (BPD) blood pressure (BP).

Correction task, WAM test (well-being, activity, mood) and scale of anxiety and depression were applied to rate EO effect on nervous system [1,3,4].

Results were processed statistically due to paired test t-criterion by Student [2].

Results and discussion

According to parameters of WAM test experimental and control groups didn't have any reliable difference initially (table 1).

After psychorelaxation session (control) psychoemotional condition of tested people held on the same level.

After aromapsychorelaxation session (experiment) reliable differences weren't registered as well. Otherwise, aroma session with *Nepeta cataria* L. EO didn't influence on psychoemotional condition of tested people.

Table 1

**Effect of *Nepeta cataria* L. EO on psychoemotional condition of tested people
(Parameter of WAM-test, standard units)**

Parameter	Experimental group initially	Control group initially	Experim.group after test	Control after test
General condition	157,40 ±3,85	155,90 ±7,69	156,70 ±6,14	163,30 ±5,55
Well-being	158,30 ±4,10	160,45 ±6,57	157,70 ±5,84	163,40 ±5,36
Mood	158,05 ±4,19	158,60 ±6,23	159,65 ±5,49	162,95 ±5,81
Weakness - capacity to work	155,60 ±4,33	151,90 ±8,03	155,75 ±6,18	158,25 ±5,69
Tension – relaxation	146,75 ±5,87	151,90 ±6,96	149,85 ±6,42	156,15 ±5,08
Inertness –vivacity	155,85 ±4,59	153,85 ±7,47	153,75 ±7,00	160,85 ±5,77
Absend-mindedness – attentiveness	140,25 ±8,56	142,25 ±8,71	139,75 ±8,05	149,05 ±7,38

Psychoemotional condition of tested people from both groups (experimental and control) according to scale of anxiety and depression didn't present any reliable differences (table 2).

Session of psychorelaxation didn't reveal any reliable variations of test parameters in control group.

At the same time session of aroma psychorelaxation also didn't cause any reliable changes of test parameters in experimental group as well.

Table 2

**Effect of *Nepeta cataria* L. EO on psychoemotional condition of tested people
(by scale of anxiety and depression, standard units)**

Scale	Experimental group initially	Control group initially	Experim.group after test	Control after test
Anxiety, standard units	7,30±0,92	7,20±1,01	7,30±0,84	6,50±1,14
Depression, standard units	7,75±0,79	7,70±1,02	7,50±0,58	7,64±0,98

Rating of procedure effect on mental capacity by correction task (literal variant) found initial difference between parameters of control and experimental groups unreliable (table 3).

After psychorelaxation control group didn't show reliable changes of test parameters. While after aroma psychorelaxation in experimental group pace of work had reliable variations during the second minute of the test. At the same time a number of mistakes decreased reliably during both minutes of this test.

Table 3

**Effect of *Nepeta cataria* L. EO on mental capacity
(by parameters of correction task)**

Parameter	Group	Initially	After test	P b/a<
Tempo 1, symbol/min	Control	228,50±16,41	230,95±16,47	
	Experiment	235,40±15,44	240,15±18,32	
Mistakes 1, symbols	control	1,15±0,41	0,95±0,32	
	experiment	1,70±0,37	0,76±0,19	0,01
Tempo 2, symbol/min	control	213,00±17,74	226,05±17,06	
	experiment	202,60±12,77	244,85±18,73	0,005
Mistakes 2, symbols	control	1,45±0,58	1,29±0,48	
	experiment	1,85±0,44	0,70±0,24	0,01

Initially (before test) reliable differences between values of BP and HR in both groups (control and experiment) weren't registered (table 4). At the same time either experimental or control group presented normal average value of BPS, BPD – optimum by JNC6, HR were normal as well.

After session of psychorelaxation parameters of BP and HR in control group didn't differ from initial data. But in experimental group session of aromarelaxation caused reliable reduction of BPS and HR.

Table 4

Relaxation effect on BP and HR using *Nepeta cataria* L. EO

Group	Experimental group initially	Control group initially	Experimental group after test	Po b/a<	Control group after test
BPS, mm of mercury	123,60 ±3,45	120,80 ±3,90	115,75 ±2,69	0,002	119,41 ±3,88
BPD, mm of mercury	78,05 ±1,88	77,75 ±1,86	76,80 ±1,73		76,70 ±2,09
HR, heartbeat/min	72,05 ±1,94	70,85 ±1,36	68,25 ±1,64	0,0008	70,40 ±1,38

Therefore *Nepeta cataria* L. EO breathing it in low concentration didn't have any effect on psychoemotional condition of tested people. Though it stimulated mental capacity (reliable increasing of work rate during the second minute of the test). Moreover its accuracy level went up.

Consequently the principal result of *Nepeta cataria* L. EO effect on human higher nervous activity is stimulation of mental capacity. Light hypotensive and bradycardial influence of *Nepeta cataria* L. EO is considered as a positive property for its practical appliance, especially in work with people suffered from hypertension.

Pointed positive changes were registered in case of very low *Nepeta cataria* L. EO concentration in the air, that is 0,1 mg/m³.

Conclusions

1. *Nepeta cataria* L. EO didn't effect on psychoemotional condition of tested people breathing it in concentration 0,1 mg/m³.
2. During correctional task *Nepeta cataria* L. EO presented a light stimulative effect on mental capacity and increased its accuracy in the same concentration.
3. *Nepeta cataria* L. EO in concentration 0,1 mg/m³ possesses light hypotensive and bradycardial effect.

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Essential oil (EO) of *Nepeta Cataria* didn't make any effect on psychoemotional state of tested people. In a test proof the EO stimulated mental capacity and improved its accuracy a bit. EO of *Nepeta Cataria* possesses some hypotensive and bradycardial effect.

Key words: *essential oil; aroma session; aromatherapy; Nepeta Cataria; psychorelaxing record; mental capacity; psychoemotional state*

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ESSENTIAL OIL OF *SALVIA SCLAREA* AND ITS EFFECT ON PSYCHOPHYSIOLOGICAL STATE OF ELDERLY PEOPLE BREATHING IT IN LOW CONCENTRATION

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Introduction

Essential oil of *Salvia sclarea* L. is quite popular in aromatherapy [6]. It was found as an antidepressant [8], stress-limiting [9] and hypotensive remedy [5]. *Salvia sclarea* L. composition is rather close to *Lavandula angustifolia*: its main components are linalil acetate, linalool, geranyl acetate and terpineol [7]. To minimize body burden in terms of aromatherapy is an important task. It's possible due to reduction of EO content in the air. It