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COMMUNICATIONAL METHOD OF IMPACT OF „EXERCISE OF LAUGHTER YOGA“ ON THE ELDERLY BEHAVIOUR

KOMUNIKATIVNA METODA UTJECAJA „VJEŽBANJA JOGE SMIJEHA“ NA PONAŠANJE STARIJIH OSOBA

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Abstract
Watching the entertaining facilities is one of the effective methods of promoting laughter, which in turn affects the blood pressure values and well-being. The purpose of the study was to determine how laughter yoga, which does not depend on understanding humor, effect on blood pressure and well-being.
Research Methodology: In this study, we used the technique of promoting laughter, called laughter yoga which does not depend on understanding humor. It includes respiratory-laughing fun exercises that encourage laughter very quickly. The study involved fifty-two randomly selected volunteers whose average age was 52.5 years. Volunteers were based on a questionnaire on health divided into those who take medications and those who do not. Their well-being, before and after exercise, was assessed using non-standardized numerical nine-stage questionnaire with a scale of 1 to 10. Research was conducted in 2012 in the Laughter yoga club in Maribor, once a week for sixty minutes (ten weeks).
Results: The results showed that laughter yoga has statistically significant effect on the level of blood pressure by volunteers who did not take any medications (N = 41; systolic: 7.73% (p <0.0001), diastolic: 5.83% (p <0.0001)). In volunteers who took medications (N = 11), we observed a drop decrease in the value, without statistically significant differences (systolic: 2.70% (p = 0.86), diastolic: 1.41% (p = 0, 25)). Statistically significant differences (p <0.05) were observed in the average change in enthusiasm, optimism, connectivity, energy levels, mood, muscle relaxation, breathing awareness, the ability to laugh for no reason. The biggest change was measured in the sense of stress after laughter yoga exercise (60%).
Conclusion: From presented results we can conclude

Sažetak
Gledanje zabavnih sadržaja je jedna od najučinkovitijih metoda promicanja smijeha, što pak utječe na vrijednosti krvnog tlaka i blagostanje. Svrha istraživanja bila je utvrditi kakav učinak na krvni tlak i blagostanje ima joga smijeha, koja ne ovisi o razumijevanju humora.
Metodologija: U ovom istraživanju smo koristili tehniku promicanje smijeh, zvanu joga smijeha koja ne ovisi o razumijevanju humora. To uključuje respiratorno-smiješne zabavne vježbe koje vrlo brzo potiču smijeh. U studiji je sudjelovalo pedeset dva nasumično odabrana volontera čija je prosječna dob 52,5 godine. Volonteri su, na temelju upitnika o zdravlju, podijeljeni na one koji uzimaju lijekove i one koji to ne čine. Njihova dobrobit, prije i nakon vježbanja, procijenjena je pomoću nestandardiziranog upitnika sa devet faza i skalom od 1 do 10. Istraživanje je provedeno 2012. u Yoga klubu smijeha u Mariboru, jednom tjedno u šezdeset minuta (deset tjedana).
Rezultati: Rezultati su pokazali da joga smijeha ima statistički značajan utjecaj na razinu krvnog tlaka kod volontera koji nisu uzimali nikakve lijekove (N = 41; sistolički: 7,73% (p <0,0001), dijastolički: 5,83% (p <0.0001). Kod volontera koji su uzimali lijekove (N = 11), primjetili smo pad pad vrijednosti, bez statistički značajnih razlika (sistolički: 2,70% (p = 0,86), dijastolički: 1,41% (p = 0, 25)). Statistički značajne razlike (p <0,05) zabilježene su u prosječnoj promjeni entuzijazma, optimizma, povezivosti, razini energije, raspoloženju, opuštanju mišića, svjesnosti disanja, sposobnost da se smije bez razloga. Najveća promjena je izmjerena u smislu stresa nakon vježbanja joge smijehom (60%).
Zaključak: Iz dobivenih rezultata može se zaključiti da joga smijeha može biti učinkovita adjunktivna metoda za prevenciju povišenog krvnog tlaka kod

that laughter yoga may be an effective adjunctive method for the prevention of high blood pressure in those who did not take any medications. For those who took them, it will be necessary to do further research on a larger number of people and to examine the influence of drugs. By all volunteers we observed a positive and statistically significant changes ($p < 0.05$) in well-being. Most stood out the stress reduction (60.32%).

onih koji nisu uzimali nikakve lijekove. Za one koji su ih uzimali, biti će potrebno napraviti daljnja istraživanja na većem broju ljudi te istražiti utjecaj lijekova. Kod svih dobrovoljaca bilježimo pozitivne i statistički značajne promjene ($p < 0,05$) u blagostanju. Najviše se isticalo smanjenje stresa (60.32%).

INTRODUCTION

According to the World Health Organization /**1**/ chronic diseases (heart disease, stroke, cancer, diabetes and chronic obstructive pulmonary disease) are the leading cause of death in the world, representing 63% of all deaths. Cardiovascular diseases, according to the WHO, are in a great advantage, because 17.3 million people per year die of them, that represents 30% of all deaths. The data in Slovenia is not more optimistic. Institute of Public Health /**2**/ lists the information that in year 2010 compared to the year 2009, died in Slovenia 3% more people with cardiovascular diseases, that means 40% of all deaths. In view of these facts which confirm that chronic diseases in the world and in Slovenia are on the rise, some scientific articles by various authors (Bennett, 2003; Bennett, & Lengacher, 2006a, 2006b, 2009; Berk et al ., 1977; Fry, & Savin, 1988; Lefcourt, Davidson - Katz & Kueneman, 1990, Miller, & Fry, 2009) demonstrate the impact of humor and laughter on health and well-being . Norman Cousins described in his book Anatomy of an Illness as prescribed by the patient /**3**/ the power of laughter on the basis of his own experiences. He has facilitated his disease with thirty minutes of laughter, high doses of vitamin C and at least two hours of sleeping. This magic combination helps him to relieve pain and strengthen faith in life.

A new method of promoting laughter, called Laughter yoga /**4**/, has already been implemented in more than seventy countries around the world. It is a combination of laugh-breathing exercises. In this study, we focused to measure the impact of Laughter yoga on blood pressure and well-being of participants in a free laughter yoga club, which operates once a week. Many of the literature reflect a positive and scientifically proven effect of laughter and humor on well-being in many chronic diseases which include high blood pressure /**5**/.

Laughter is also a form of aerobic exercise. Mc. Irrespective of all, the existing results speak about the positive effects of laughter and almost no results talk about its side effects. Also interesting is the statement by the gentleman who had cancer and was told that because of the anger, reactions and depression in relation to his diagnosis he became very unpleasant for him-self and the surrounding area. Now, is he due to laughing therapy much more open to new ideas, he is also kinder to others and within him-self even slightly stronger. Laughter for no reason or Laughter yoga /**6**/ is not well known in our society and is a relatively new method, which some accepted, others not. Hasan, H., & Hasan, TF /**7**/ in their study found a statistically significant connection between personal satisfaction and the ability to laugh, which means that the people who were laughing, were emotionally more satisfied. The effects of laughter on the disease and well-being were also written by the Cousins /**8**/ and Adams & Mylander /**9**/. Cousins effectively influences his illness with a regular activity of laughter in different ways (humor, laugh like that, video funnies) as specific therapy. Adams's in his Gesundheit Clinic introduces a method of laughter and humor as an important complementary technique in the treatment of patients. He argues that positive attitude and laughter play a significant effect on attitude to the disease and relationship to the medical staff. Bennett et al. /**10**/, /**11**/, /**12**/, /**13**/, /**14**/ describe the importance of laughter for well-being, which in turn may also affect treatment. Returning to stress, which can cause many diseases, it can be seen in the literature review, that laughter reduces stress hormones and stimulates the immune system (Berk et al., 1989; Lefcourt, Davidson - Katz & Kueneman, 1990; Kataria, 2002; Bennett et al., 2003). If we feel better, we are optimistic, we have a higher level of energy, less stress, more relaxed muscles and we are more excited. In our body are triggered biochemical

processes that may affect our mental and physical health /**15**/, /**16**/. Berk et al. /**17**/ poin out that laughing reduces stress hormones, such as epinephrine, cortisol, noradrenaline, which may affect a number of disease complications, as for example, in cardiovascular diseases /**18**/ and type 2 diabetes /**19**/, and to have feelings of great importance in the development of many diseases /**20**/. Kataria /**21**/, who was developed this technique together with his wife, on the basis of scientific papers concluded that our body does not distinguish between sincere and done laughing. Endorphins are released with both. And because the laughter yoga is a combination of a beautiful smile-playful exercises, which include breathing /**22**/, and because we do not need a reason for it, the result is, viewed from the point of view that the people were more able to laugh for no reason after the exercise, extremely positive. Nowadays, this technique is somewhat unusual, because we all are used to laugh with a reason - laugh for no reason with exercises, can make by adult unserious impression and for many people this is inappropriate. For this reason, the exercise in group is much easier because individual is more easily drawn into the action.

METHODOLOGY

In this study, we used the technique of promoting laughter, called Laughter yoga, which does not depend on the understanding of humor, but includes breathing - laughing fun exercises, which quickly lead to laughter. The study included randomly selected volunteers who attend the Laughter Yoga Club in Maribor. They have signed the statement on the participation and completed a questionnaire on health, through whom we wish to know the health status of volunteers. In this study we also want to know how people feel before and after the regular exercise of laughter yoga. For that reason we included non-standardized numerical nine-stage questionnaire about well-being. Parameters by volunteers evaluated were: enthusiasm, sense of stress, optimism, connectedness, energy levels, mood, muscle relaxation, breathing awareness, the ability to laugh for no reason. The questionnaire was structured so that the people evaluated mentioned parameters before and after exercise on a scale 1 to 10. Number 1 represented at least and number 10 represented the most.

Sample

The study included randomly selected volunteers who attend the Laughter Yoga Club in Maribor. They have signed the statement on the participation and completed a questionnaire on health (about medicines and disease they had or have). Condition for participation in the study was the minimum age of eighteen years. Upward age was not limited. The study involved fifty-two randomly selected volunteers (four men and forty-eight women), their mean age was 52.5 years. The youngest volunteer was twenty-four, the oldest was seventy-six. Volunteers were, based on a questionnaire on health, divided into those who take some drugs (N = 11) and those who do not take them (N = 41).

Methodology

The study was based on a quantitative methodology by which we carried out measurements of blood pressure before and after 1 hour Laughter yoga workout. Research was performed in 2012 in the Laughter Yoga Club in Maribor, once a week for ten weeks. In the study we were interested to find out how Laughter yoga impact on blood pressure and well-being by participants who take some drugs and how by those who do not take them. We compared the effects of both.
Blood pressure measurements on the brachial artery were performed before and after exercise. At the same time we also want to know how people feel before and after the regular exercise of Laughter yoga. For that reason we included non-standardized numerical nine-stage questionnaire about well-being. With it volunteers evaluated: enthusiasm, sense of stress, optimism, connectedness, energy levels, mood, muscle relaxation, breathing awareness, the ability to laugh for no reason, before and after exercise on a scale 1 to 10. Number 1 represented at least and number 10 represented the most.

The methods of collecting and processing data

After reviewing the relevant literature, we designed the study. Research was performed in 2012 in the Laughter Yoga Club in Maribor, once a week on Thursdays at 19.30, for ten weeks. For each participant, who has a voluntary approach to

research by signing the statement on the participation, we have prepared the folder in which the data was collected. At the first training all participants completed a questionnaire on health (about medicines and diseases they had or have). Blood pressure measurements were performed by automatic measuring instruments. With non-standardized numerical nine-stage questionnaire about well-being volunteers evaluated: enthusiasm, sense of stress, optimism, connectedness, energy levels, mood, muscle relaxation, breathing awareness, the ability to laugh for no reason, before and after exercise on a scale 1 to 10. Number 1 represented at least and number 10 represented the most. The obtained data was processed with the program VassarStats. The first part of the statistical analysis consisted of basic descriptive statistics, which obtained information regarding the frequency, average value, standard deviation (SD) and dispersion of the sample. A more detailed analysis, we made with the bilateral t-test for dependent and independent samples. In order to assess the applicability of the chosen method, we used the calculation of odds ratios (OR) at 95% confidence interval (CI). P-values <0.05 were considered statistically significant.

RESULTS

Table 1: Average values of blood pressure (BP) measurements (mmHg) before and after Laughter yoga exercise of volunteers who do not take any medications (N = 41) and their statistical significance.

N = 41	Before exercise	After exercise	Difference	95% CI; p-value*
	BP (mmHg) ± SD	BP (mmHg) ± SD		
Systolic BP	133,15 ± 18,94	120,65 ± 14,79	9,39 %	12,48 ± 2,54; p < 0,0001
Diastolic BP	87,75 ± 12,86	81,42 ± 10,90	7,21 %	6,38 ± 2,48; p < 0,0001

* *t-test*

Table 1 shows the change in blood pressure at volunteers who did not take any medications (N = 41). By these volunteers, we observed that the systolic blood pressure decreased on average by 12.48 mmHg or 9.39%, diastolic blood pressure by 6.38 mmHg or 7.21%. We get a statistically significant difference (p <0.0001) between the mean values of observed variables.

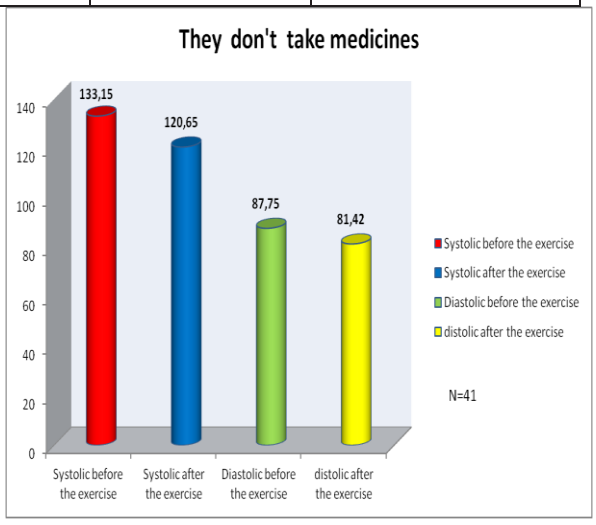


Figure 1: Average values of blood pressure measurements (mmHg) before and after laughter yoga exercise of volunteers who do not take any medications (N = 41).

Figure 1 shows the mean change in systolic and diastolic blood pressure at volunteers who were not taking medications (N = 41). Systolic blood pressure decreased on average by 12.5 mmHg. It was reduced from the measured average value of 133.15 mm Hg to 120.65 mmHg. The change in diastolic blood pressure was slightly lower. It decreased from 87.75 mm Hg to 81.42 mm Hg, which is an average of 6.33 mmHg.

Table 2: Average values of blood pressure (BP) measurements (mmHg) before and after laughter yoga exercise of volunteers who take medications (N = 11) and their statistical significance.

N=11	Before exercise	After exercise	Difference	95% CI; p-value*
	BP (mmHg) ± SD	BP (mmHg) ± SD		
Systolic BP	141,54 ± 22,89	137,72 ± 23,23	2,70 %	3,83 ± 4,09; p = 0,06
Diastolic BP	90,18 ± 8,80	88,90 ± 8,33	1,41 %	1,25 ± 6,18; p = 0,66

* *t-test*

Table 2 shows the change in average systolic blood pressure at volunteers who take medications (N = 11) from 141.54 mmHg to 137.72 mmHg, which represents 2.70% (p = 0.06), and the change in the average diastolic blood pressure from 90.18 mmHg to 88.90 mmHg, which corresponds to 1.41% (p = 0.66).

Figure 2: Average values of blood pressure measurements (mmHg) before and after laughter yoga exercise of volunteers who take medications (N = 11).

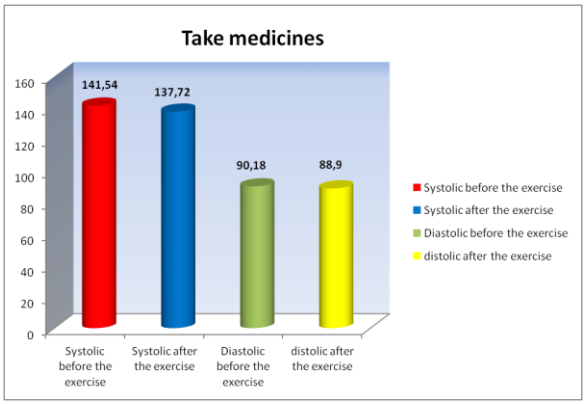


Figure 2 shows the changes in systolic and diastolic blood pressure at volunteers who take medications. From the presented results it can be seen that the average systolic blood pressure decreased by 3.81 mmHg (from 141.54 to 137.72

mmHg). Average diastolic blood pressure also decreased from 90.18 mmHg to 88.90 mmHg, which means an average of 1.28 mmHg.

Table 3: Average differences of well-being changes before and after laughter yoga exercise of volunteers who do not take any medication (N = 41) and their statistical significance.

Do not take any medication N = 41		Change (%)	Average ± SD	p-value	95% CI
enthusiasm	before	33,27	6,73 ± 1,91		
	after		8,97 ± 1,54	p < 0,0001	2,26 ± 0,59
sense of stress	before	63,25	5,17 ± 2,44		
	after		1,9 ± 1,56	p < 0,0001	3,30 ± 0,71
optimism	before	28,77	7,08 ± 1,86		
	after		9,12 ± 1,12	p < 0,0001	2,02 ± 0,43
connectedness	before	37,40	6,18 ± 2,31		
	after		8,49 ± 1,85	p < 0,0001	2,23 ± 0,49
energy level	before	42,64	6,07 ± 1,89		
	after		8,65 ± 1,83	p < 0,0001	2,73 ± 0,51
mood	before	40,83	6,57 ± 1,88		
	after		9,25 ± 1,6	p<0,0001	2,52 ± 0,62
muscle relaxation	before	38,41	6,42 ± 2,15		
	after		8,89 ± 1,12	p < 0,0001	2,45 ± 0,64
breathing awareness	before	45,99	5,71 ± 2,16		
	after		8,34 ± 1,76	p < 0,0001	2,64 ± 0,86

the ability to laugh for no reason	before	39,32	6,49 ± 1,99		
	after		9,04 ± 1,29	p < 0,0001	2,54 ± 0,60

Table 3 shows the changes in well-being and statistical processing of data by volunteers who did not take any medication (N = 41). From the date we can observe that volunteers were after laughter yoga in less stress (63.25%), that they had more energy (42.64%) and that they are more aware of breathing (45,99%). All parameters were after exercise statistically significant (p <0.0001).

Figure 3: Average values of well-being changes before and after laughter yoga exercise of volunteers who do not take any medication (N = 41).

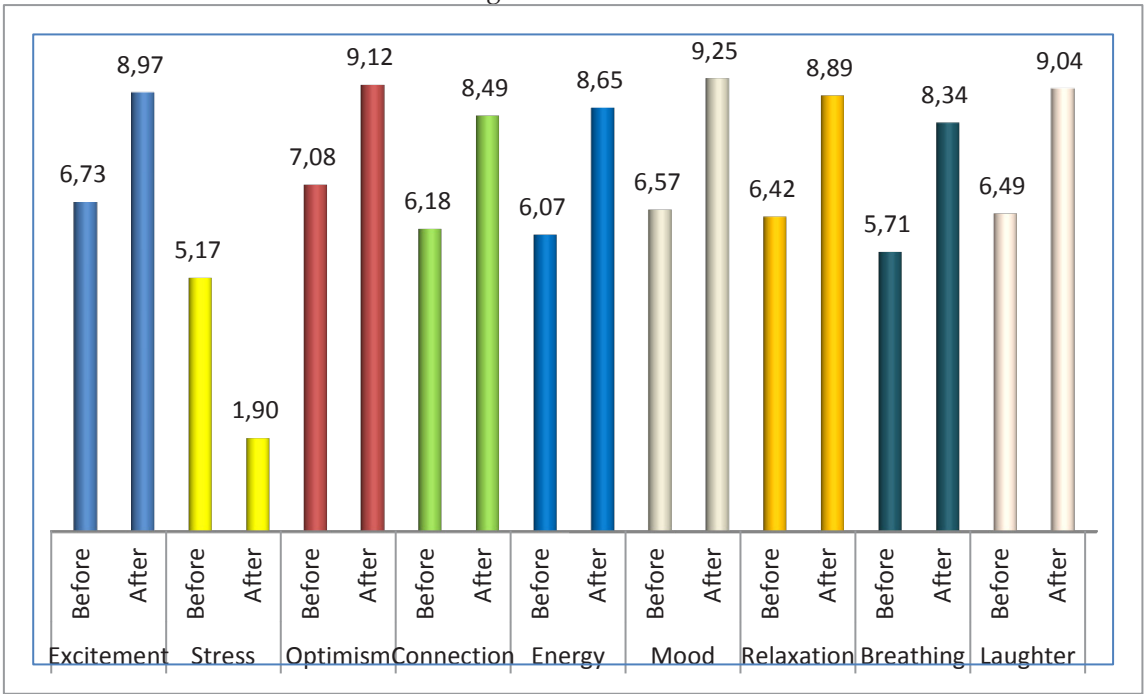


Figure 3 shows the average value of well-being changes before and after exercise, as assessed on a scale of 1 to 10. We can see that the enthusiasm increased for 33.27%. The feeling of stress stood out and was reduced to 63.25%. After exercise optimism increased for 28.7%, also connectedness by 37,40%. The energy level was higher after exercise for 42.64%, while the mood for 40.83%. Volunteers also feel more relaxed muscles, namely 38.41%, their breathing was after the workout for 45,99% more intensive than before the workout. After training they had a feeling of being easier to laugh, for 39.32%.

Table 4: Average differences of well-being changes before and after laughter yoga exercise of volunteers who take medications (N =11) and their statistical significance.

Do not take any medication N = 11		Change (%)	Average ± SD	p-value	95% CI
enthusiasm	before	22,68	7,24 ± 1,97		
	after		9,17 ± 1,08	0,0008	2,00 ± 0,95
sense of stress	before	40,01	4,48 ± 2,78		
	after		2,09 ± 1,72	0,007	2,36 ± 1,57
optimism	before	23,92	7,81 ± 2,31		
	after		9,39 ± 1,07	0,01	1,54 ± 1,17
connected-ness	before	25,90	7,37 ± 2,36		
	after		9,33 ± 1,12	0,002	2,00 ± 1,12
energy level	before	29,27	6,79 ± 2,14		
	after		8,9 ± 1,42	0,001	2,00 ± 0,99
mood	before	21,96	7,22 ± 2,02		
	after		9,29 ± 1,08	0,0007	2,00 ± 0,97

muscle relaxation	before	29,62	7,18 ± 3,39		
	after		8,81 ± 2,01	0,04	1,72 ± 1,72
breathing awareness	before	27,24	6,74 ± 2,56		
	after		8,91 ± 2,07	0,001	2,09 ± 1,01
the ability to laugh for no reason	before	21,80	7,44 ± 2,11		
	after		9,04 ± 1,52	0,001	1,72 ± 0,90

Table 4 the average change of well-being of volunteers who take medications (N = 11). It can be seen that stand out changes of stress feeling (40,01%), the level of energy (29.27%), and a muscle relaxation which has changed for 29.62%. All parameters were after exercise also statistically significant ($p < 0.0001$).

Figure 4: Average values of well-being changes before and after laughter yoga exercise of volunteers who take medications (N =11).

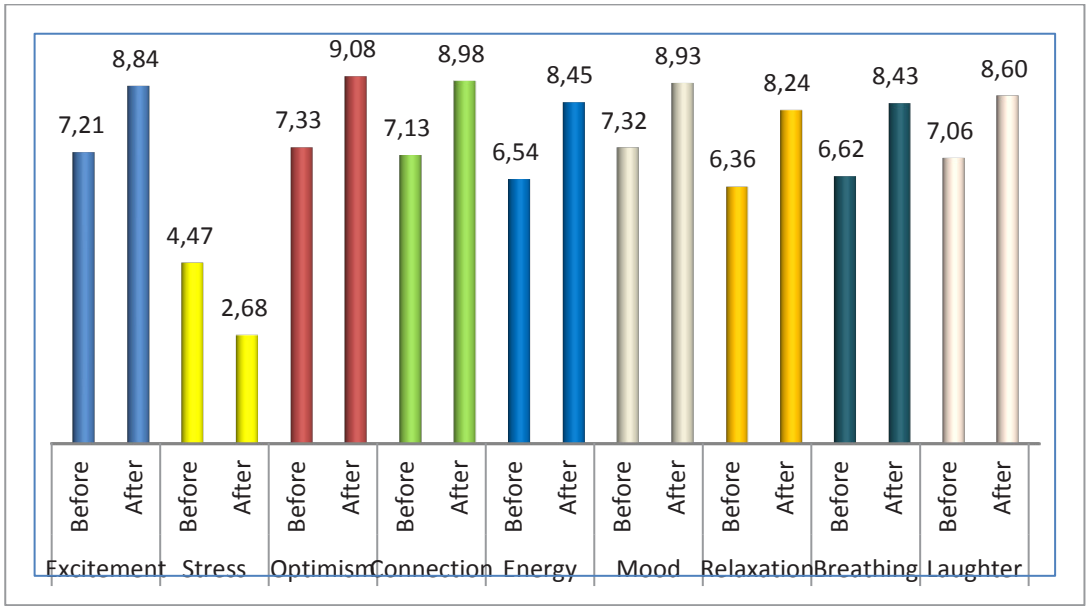
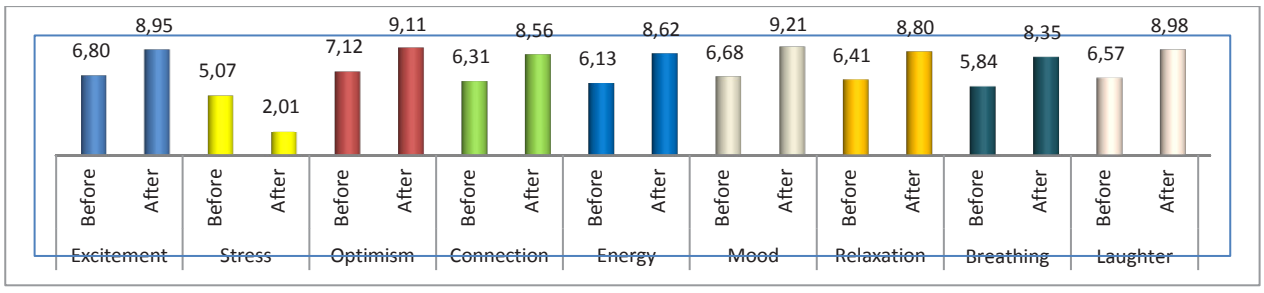


Figure 4 shows the average values of well-being changes before and after laughter yoga exercise of volunteers who take medications (N =11). Excitement has increased by 22.68%, feeling the stress by 40.01%, optimism rose up to 23.92%. Volunteers after exercise also had a better sense of connectedness, namely 25.90%. Energy level has increased by 29.27%, while the mood by 21.96%. Volunteers have a sense of greater muscle relaxation, namely 29.62%. Awareness of breath after exercise rose up to 27.24% and the ability to laugh up to 21.80%.

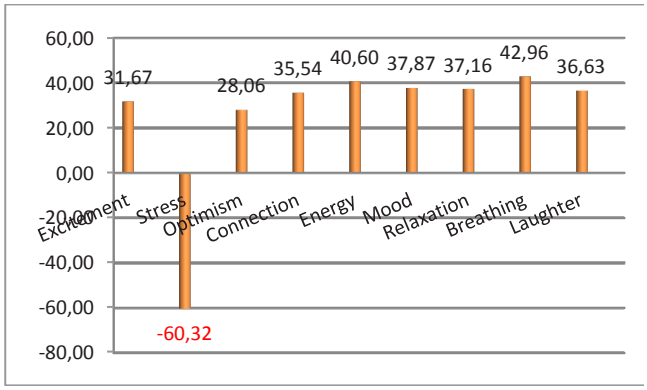
Figure 5: Average values of well-being changes before and after laughter yoga exercise for all volunteers (N = 52).



It can be seen that excitement was raised up to 31.67%, the feeling of stress decreased to 60.32%, sense of optimism increased for 28.06%, also the feeling of connectedness for 35.54%. After a workout raise the level of energy for 40.60% and 37.87% for mood. Volunteers had a greater sense of relaxation of muscles, namely 37.16%. From figure 5 it can also be seen that the volunteers become more aware of breathing, by 42.96%, and

that they can better laugh without reason (36.63%).

Figure 6: Average values of the differences in well-being changes before and after laughter yoga exercise for all volunteers (N = 52) expressed in percentages.



From figure 6 it can be seen that most changed the feeling of stress, which fell by 60.32%, also stand out the feeling of awareness of breathing, which grew 42.96%, and the feeling of energy after a workout rise, namely 40.60%. This is followed by other parameters. It is interesting that the volunteers before exercise did not have as great ability to laugh without reason, as they had after exercise (it rose up to 36.63%).

DISCUSSION

In the study we were interested to find out how Laughter yoga impact on blood pressure and well-being by participants who take some medications and how by those who do not take them. For that reason we performed blood pressure measurements on the brachial artery before and after exercise. We also included non-standardized numerical nine-stage questionnaire about well-being. With it volunteers evaluated: enthusiasm, sense of stress, optimism, connectedness, energy levels, mood, muscle relaxation, breathing awareness, the ability to laugh for no reason, before and after exercise on a scale 1 to 10. Number 1 represented at least and number 10 represented the most.

In our study, we found that systolic blood pressure after exercise of laughter yoga by all participants, on average, decreased by 10.44 mmHg and diastolic by 5.15 mmHg. Both parameters were after exercise also statistically significant ($p<0.0001$). At the same time in the study volunteers were separated into those who take medications and those who do not take them. We found that the systolic blood pressure in those who take medications decreased from 133.15 mmHg to 120 mmHg (9.39%, $p<0.05$). On the other hand diastolic blood pressure also decreased from 87.75 mmHg to 81.42 mmHg (7.21%, $p<0.05$). For those who take the medications we observed on existing small sample reduction of systolic blood pressure on average by 2.7% ($p>0.05$), and diastolic by 1.4% ($p>0.05$).

Research has shown that laughter yoga has statistically significant effect on lowering blood pressure in those volunteers who do not take medicines ($p<0.05$). For those who take them, reduced blood pressure was not statistically significant ($p>0.05$). Based on these results we should not make any conclusion by volunteers who take medicines. It should be carefully studied, which medications they take and if they affects blood pressure. Nevertheless, it can be observed that the blood pressure after laughter yoga exercise decreased.

Results of the non-standardized numerical nine-stage questionnaire about well-being showed that all studied parameters have been statistically significant different. The maximum mean that we noticed was estimated on the issue of stress, which decreased by 60.32%. Extremely important is the fact that the volunteers after exercise of laughter become more aware of breathing, at an average of 42.96% - some have even stated that they feel easier to breathe. High score has also energy, since after a workout of laughter, its level rose on average by 40.54%. Despite the relatively high average change was slightly lower result in a sense of optimism, which is an average increase of 28.06%. It is important that the volunteers had the sense of connectedness, regardless of the fact that they did not know before exercise. From this follows that such type of exercise relatively quickly weaves new acquaintances and connects people - perhaps even creates new friendships.

Laughter for no reason in our society is not known and is a relatively new method, which some accepted, others not. In the performed research, we found that the volunteers after exercise

of laughter could easier laugh for no reason, namely for 36.63%. All observed values were statistically significant ($p < 0.05$). We noticed the differences between the effects on those who take medications and those who did not. By those who did not take medications these changes were being much higher than by those who take medications. This changes were also statistically significant ($p<0.05$).

Statistically, we demonstrated that one-hour laughter yoga once a week has statistically significant impact on the enthusiasm, optimism, connectedness, energy levels, mood, muscle relaxation, breathing awareness and the ability to laugh for no reason. Irrespective of this, we can also conclude that in our study the impact of laughter on the population with medications was by the evaluation of well-being slightly lower. To comment this fact more specifically this medications should be carefully studied. Now we can only assume that these volunteers feel a little worse and that specific medications may affect their well-being and possibly also the result.

In any case, it is necessary for people who are in therapy with medications to do further analysis, to deepen parameters and find out the effects of drugs and then on the basis of accurate statistical analysis derive conclusions.

CONCLUSION

Based on the performed research we can conclude that laughter yoga is an effective method to improve the well-being and that regular exercise can influence the improvement of blood pressure. We have also seen that people after exercise were much closer, which means that they are easier to contact the other. This is particularly important for building and maintaining social networks. People also immediately feel better, they had a sense of optimism, new energy, and above all they felt stress reduction. Nevertheless, the question arises how to optimally organize laughter yoga at the national level, how to involve as many people as possible and how should this practice acquired its promotion on Social and Health level for the population and for a whole system.

Notes

/1/ World health organization [WHO] (2013).
/2/ Inštitut za varovanje zdravja [IVZ]. (2011). Zdravstveni statistični letopis 2011. Slovenija. Dostopno 26.1.2014. http://www.ivz.si/Mp.aspx?ni=202&pi=18&_18_view=item&_18_newsid=2154&pl=202-18.0.
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