SUMMARY

The emotional functioning of older people depends on many factors. Diverse and rich activity every day seems to be very important. Undertaking a large number of activities at an elderly age and fulfilling oneself in social roles (also ones newly started) is a condition for efficient functioning, life satisfaction, well-being and health. Older people are at risk of social exclusion, being unnecessary for others or even being a burden on one’s surroundings. Hence, support and inclusion programs for various tasks and activities become extremely important. The aim of the presented research was to present proposals and evaluate the effects of a program dedicated to seniors, which was to improve their quality of life, psychophysical and social health.

Material/Methods:

The program involved 50 seniors from 2 different support centers, including 43 women and 7 men, average age 77.51 ± 9.51. The assessment used the SUPIN questionnaire (Positive and Negative Feelings Scale), MMSE (Mini-Mental State Examination) and the VAS pain scale.

Results and Conclusions:

The obtained results confirmed the beneficial effect of the proposed activation program on the psychophysical health of the respondents. All subjects increased their level of positive emotions, while the level of negative ones decreased (p <0.05), hand functionality and general well-being improved, back and pain significantly decreased.

Key words: mental state, pain, rehabilitation, quality of life
INTRODUCTION

The aging process affects many aspects of human life. One of them is the emotional aspect. An extensive meta-analysis showed that the strongest increase in negative emotions and a decrease in positive emotions occurs in the 4th quarter of life (Jasielska 2011). Studies have shown that the emotional experiences of older people are less intense than those of younger age groups, emotional control is stronger and the mood more stable. Australian researchers explain the greater emotional stability in seniors because of the reduced control of the central prefrontal cortex over positive emotional stimuli and increased control over negative emotional stimuli (Izdebski, Polak 2008). Older people are also characterised by a lower level of physiopsychological reactions, which include blushing (Hurme 2002, p. 63).

The emotional functioning of older people depends on many factors. They can be strongly influenced by the negative effects of reaching older age. The so-called “great geriatric problems” include not only gait or pressure ulcers, but also problems closely related to the psyche and emotions - including depression. Depression is a disorder that affects approximately 15% of the population above 65 years of age (Dudek et al. 2006). The nationwide PolSenior study using, inter alia, the Geriatric Depression Rating Scale showed that the prevalence of depressive disorders increases with age (20% in the 55-59 age group; 25% in the 65-79 age group; 33% in the 80+ age group).

Another aspect that affects the daily emotions and moods of seniors is their social situation and place of residence. Relationships and interpersonal interactions play a big role in people’s emotional functioning. Social cohesion research in 2015 showed that at an older age social activity is lower than it is in younger people. According to the social isolation index, every tenth elderly person has limited social contacts (GUS 2016). We can observe exclusion, the feeling of being unnecessary or even being a burden on one’s surroundings. However, on the other hand we can observe the phenomenon of inclusion resulting from the growing respect caused by age and life experience (Lejzerowicz, Trylińska-Tekielska 2017).

One of the theories regarding aging is the “activity theory of aging”, which shows that very diverse and rich activity is very important in the context of the functioning (also emotional) of the elderly. According to it, undertaking a large number of activities for the elderly and fulfilling themselves in social roles (also ones newly undertaken) is a condition for efficient functioning, life satisfaction, well-being and health (Sienkiewicz Wilowska 2014).

Conscious fulfillment of free time can affect the sense of accomplishment. Lack of self-fulfillment causes a decrease in satisfaction and can lead to depression (Zacharska-Quaium, Gorzkowska 2018). Therefore, the selection of appropriate forms of spending free time, which are based on the needs and expectations of the beneficiary can have a very positive impact on their emotions and self-perception.
The presented research advances proposals of a program for activating seniors by adopting new roles and tasks in mutual interactions and self-help. Seniors were trained in simple forms of massage, which they could do on their own. The program consisted in learning new manual skills (improving hand functions) and assuming the role of a helping / massaging person and a needy / massaged person. In addition, the important goals of the program were to improve the memory processes (remembering new things), spatial imagination and eye-hand coordination. An assessment of the impact of this form of occupational therapy on the level of positive and negative emotions, as considered as a condition, was made (Brzozowski 2010).

MATERIAL AND METHODS

50 people (43 women and 7 men) aged 60 to 97 years entered the study, the average age was 77.51 ± 9.51. The research was carried out in 2 institutions including:
1. The Senior Support Center (Polish: OWdS) - Day Care Facility / 35 people (30 women and 5 men)
3. The criteria for inclusion in the study were: full verbal contact, being aged 60+, no acute inflammation around the back and arms, no sensory disturbances, no massage contraindications, and the ability to move independently.

Research tools

The basic tool was the Positive and Negative Feelings Scale (Polish: SUPIN), 20 adjective version (S20), Polish adaptation of the PANAS scale. This version of the questionnaire examines emotional states. It contains 10 adjectives describing positive feelings (PU), such as animated, lively, strong and alert, and 10 adjectives describing negative feelings (NU), such as embarrassed, scared, nervous. The study participants were asked to assess how much each adjective described their emotions over the past two weeks on a five-point scale, in which 1 meant slightly or not at all, 2 – a little, 3 – moderate, 4 – quite strongly, 5 – very strongly.

VAS scales were used to assess pain in the spine and back area.

In order to diagnose the cognitive processes of the surveyed seniors prior to joining the program, the MMSE (Mini-Mental State Examination) scale by Marshal F. Folstein, Susan E. Folstein and Paul R. McHugh was used. This tool is considered one of the best known, and is used to study cognitive abnormalities. The scale is used in screening and in observing the severity of the disease. 11 categories of functions are assessed, including: orientation in time and space, remembering, attention, understanding, writing, reading. The maximum number of points obtainable is 30, while the minimum is 0. The conventionally accepted limit is 23 points, in the case of achieving a lower result there is a high probability of having cognitive disorders (Folstein M.F, Folstein S.E, Fanijang, 2009).
overall result allows for the assessment of the level of the general cognitive functioning of the examined person.

Participants, after completing the program, also completed an original questionnaire developed for the purposes of the study, examining their self-esteem and satisfaction with the program.

**Test procedure**

The program lasted about 2 weeks. The subjects participated in 3-4 massage sessions, they were previously trained and informed by therapists regarding its performance. Prior to the program, the SUPIN, MMES, and VAS pain scores were evaluated. After the evaluation, the assessment was carried out using the SUPIN, VAS and a self-assessment questionnaire. Participants qualified for the tests were matched in pairs (randomly or according to their preferences to ensure full comfort during the tests). At each massage session, each participant had a massage and performed it themselves (role swap). The goal of the massage session was not its professional performance, but the greatest possible commitment, willingness to help another person and creative own work and imagination. Therapists accompanied the participants from the side and helped if needed. The massage was performed on a specialist, professional massage chair (Prestige Reh- Habys), with multifunctional seat adjustment, shoulder, head, lower limb support, adjusting the position to the needs of a given person. The massaging person was standing (Fig. 1) or sitting (Fig. 2,3), depending on their abilities. Each therapy session lasted about 10 minutes.

A positive opinion was obtained from the Senate Scientific Research Committee of the University of Physical Education in Warsaw SKE 01-07 / 2018.

![Fig. 1. Standing position during the program (own source)](image)
Statistical analysis

The basic statistical measures were used in the description of the test results: arithmetic means, ranges of values (min-max), standard deviations and percentages. The significance of the differences between the groups in the case of quantitative variables was assessed using the Mann Whitney U test. The calculations were made using the Statistica 13.0 PL program. In assessing the significance of differences, the level of $\alpha = 0.05$ was adopted.

RESULTS

The results regarding the evaluation of the state of emotions before and after the program according to the SUPIN questionnaire proved to be statistically significant for all surveyed seniors. Differences between both NU negative emotions before and after ($p < 0.001$) and between the level of positive emotions before and PU after ($p < 0.05$) were demonstrated. The results are shown in Table 1.
Considering the division into groups of study participants by support center (OWdS and DPS), statistically significant differences appeared in each group of respondents. In terms of negative emotions, greater differences were observed in seniors from the day center (OWdS), and at the same time at a higher initial level. The data is presented in Table 2.

The study using the MMSE scale showed a lower level of mental state in people living in DPS as compared to people attending OWdS. The obtained result is statistically significant (p <0.05). The average of the points obtained in seniors in DPS was 22.6 and this is lower than the adopted threshold of 23, the average for seniors with OWdS was 26.43. The results are shown in Table 3.

In the subjective assessment of pain in the spine area on the VAS scale in both groups, a significant reduction was noted after the program, the data are presented in Table 4.

In the questionnaire summarizing the impressions/self-evaluation of the program, 34.5% of respondents said that they were satisfied with the program, and 65.5% that they were very happy with the program. 80% of respondents indi-

Table 1. Average results regarding positive (PU) and negative (PN) feelings, total before and after test

<table>
<thead>
<tr>
<th>Factors</th>
<th>PU-BEFORE</th>
<th>PU-AFTER</th>
<th>NU-BEFORE</th>
<th>NU-AFTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average and SD</td>
<td>31.6 ± 7.5</td>
<td>34.4 ± 8.0</td>
<td>20.1 ± 10.9</td>
<td>16.8 ± 8.8</td>
</tr>
<tr>
<td>The significance of differences (P)</td>
<td>0.015</td>
<td>0.000</td>
<td></td>
<td></td>
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</tbody>
</table>

Table 2. Average results of the level of positive and negative feelings in seniors in DPS (Social Welfare Home) and OWdS (Senior Support Center)

<table>
<thead>
<tr>
<th>Factors</th>
<th>DPS</th>
<th>OWdS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PU</td>
<td>NU</td>
</tr>
<tr>
<td>Average and SD</td>
<td>Before</td>
<td>After</td>
</tr>
<tr>
<td>31.1 ± 4.9</td>
<td>33.4 ± 7.9</td>
<td>17.9 ± 11.8</td>
</tr>
<tr>
<td>The significance of differences (p)</td>
<td>0.031</td>
<td>0.014</td>
</tr>
</tbody>
</table>

Table 3. Results of research on cognitive functions using the MMSE scale, including the group of seniors from DPS and OWdS / mean, standard deviation (SD), minimum (min), maximum sum of points (max) and level of significance p

<table>
<thead>
<tr>
<th>MMSE</th>
<th>DPS</th>
<th>OWdS</th>
</tr>
</thead>
<tbody>
<tr>
<td>average</td>
<td>22.64</td>
<td>26.43</td>
</tr>
<tr>
<td>SD</td>
<td>4.91</td>
<td>3.21</td>
</tr>
<tr>
<td>min</td>
<td>14</td>
<td>13</td>
</tr>
<tr>
<td>max</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>P</td>
<td>0.0049</td>
<td></td>
</tr>
</tbody>
</table>

Table 4. Average values of pain intensity scores on the VAS scale in the subjects including the support center, before and after the program

<table>
<thead>
<tr>
<th>Back pain in VAS scale</th>
<th>DPS</th>
<th>OWdS</th>
</tr>
</thead>
<tbody>
<tr>
<td>before</td>
<td>4.5±2.6</td>
<td>3.2±2.4</td>
</tr>
<tr>
<td>after</td>
<td>3.0±2.7</td>
<td>1.6±1.7</td>
</tr>
<tr>
<td>The level of significance (p)</td>
<td>p&lt;0.05</td>
<td>p&lt; 0.001</td>
</tr>
</tbody>
</table>
cated an improvement in mental well-being, 82.9% an improvement in physical well-being. When asked about continuation, 97.1% of respondents expressed a desire to continue massages after the program. 96.6% of respondents said they did not experience any difficulties during the program, 3.4% had a problem remembering the sequence order in the massage. Of the respondents, 82.9% observed an improvement in hand skills/fitness after the program, and 17.1% did not notice any changes. 73.5% of participants felt better as massaged people, 2.9% as massaging people, and 23.5% declared that they felt good in both roles.

**DISCUSSION**

The main aim of the study was to assess the impact of the proposed program for activating seniors on various areas of their psychophysical and social health. The entire project included a broad assessment including algometric measurements (pain sensitivity threshold measurements), anesthesiometry (skin sensation measurements), assessment of daily activity on the Lawton scale (IADL). This work presents a significant part of the research on changes in positive and negative emotions after the program. It turned out that activity in the form of Occupational Therapy through massage fulfilled its role. All subjects reported an increase in the level of positive emotions and a decrease in the level of negative emotions, the largest changes in the latter occurred in seniors using daily support centers ($p <0.000$).

In addition to the well-known advantages of massage it can be assumed that the indirect impact on the increase in the level of positive emotions and a decrease in the negative had to do with contact with other people in a similar situation, as well as the relaxation that massage gives. Interestingly, almost all the surveyed seniors (96.6%) did not have problems with the implementation of the proposed form of massage, despite numerous diseases and limitations (some of them moved in a wheelchair or with a Zimmer frame). Touch itself is recommended as a therapeutic agent, especially for people who do not have the possibility of physical contact and intimacy with other people on a daily basis, including people who are lonely or have painful illnesses. Studies show that even simply reaching out and touching a person can bring physical benefits (Cavaye 2012).

For older people, massage has a positive effect on well-being and quality of life. As a result of massage, large amounts of serotonin, histamine, dopamine and other compounds are released that affect the patient’s mood (Piejko, Nawrat-Szoltysik 2014). Sansone and Schmitt conducted a study in which they gently massage people in nursing homes suffering from chronic pain and dementia, as well as experiencing anxiety. The study was divided into three phases, each lasting 12 weeks, and showed that at the end of each phase of the program the level of anxiety and pain decreased (Cavaye 2012). Studies conducted on a group of people after strokes showed that the use of a 10-minute massage reduced the severity of pain and anxiety symptoms lasting up to 3 days after surgery, as well as improved sleep quality (Piejko, Nawrat-Szoltysik 2014). In turn, research con-
ducted in intensive care units, in which 113 patients underwent 4 massage sessions, showed that this form of therapy causes relaxation, feeling better and improvement in mood (Cavaye 2012). A study by Sharpe and assistants on people over 60 years old who have been subjected to massage or visualization and relaxation exercises for 4 weeks shows that massage therapy reduces depression, stress and anxiety, as well as improves mood and has a positive effect on health (Cavaye 2012). On the other hand, studies by Ogawa and assistants showed an improvement in well-being and a feeling of relaxation among geriatric patients who underwent a 15-minute hand massage (Ogawa 2014).

As it results from the above-mentioned studies, 10-15 minutes of intervention is enough to obtain positive health effects through massage or touch. In the presented studies, due to the different health condition of the examined people, the time of performing the massage was limited to 10 minutes, and the whole program to 2 weeks (3-4 massage sessions). Activation of the surveyed seniors involved finding themselves in a new role (strengthening psychosocial functions), once as a person in need of help, and once as a person showing and giving it. In addition, study participants had the opportunity to spend time with other people and integrate more. People living next to each other or staying in one center do not always know each other well or even talk to each other. Other important goals of the program were to improve psychophysical health, sensory stimulation: hand fitness, superficial sensation in the fingers, memory exercise, the stimulation of creativity and a reduction of back discomfort. The observed differences in the results between the groups and the lower results of cognitive functions in DPS residents are not a big surprise. One of the reasons for this may be the fact that in OWdS 61.8% of respondents declared full support from relatives, while in DPS only 40%. Loneliness has a great impact on emotions. Research assessing the quality of life of older people who benefit from institutional assistance, conducted by Burzyńska and co-authors, showed that the subjective assessment of the quality of life of the respondents was affected by the frequency of contacts with loved ones. Those respondents who did not have them at all rated their quality of life as the worst (Burzyńska et al. 2017). An important result in the presented research turned out to be a varied assessment of the mental state measured by the MMSE scale. Seniors attending OWdS turned out to be the group with a higher level of cognitive function than seniors from DPS. The OWdS ones live independently, coming to the center every day for various activities; while people living in residential DPS usually have different, more advanced health problems, thus more often they require help and support in their daily functioning. The largest differences between the groups were noted in the functions: orientation in place, attention and counting, recalling and drawing, in favor of seniors from day centers.

Chocholowska and assistants found that the older a person feels, the more pain they feel, and this is associated with malaise. Massage is an effective method to improve the mood of older people. It reduces pain and facilitates contact with another person (Chochowska, 2011). In addition to the areas mentioned above, the
The aging process also includes psychological aspects. Among them, first of all, you may notice difficulty with memorising. The problems also concern spatial imagination, inference, and hand-eye coordination. In old age, the risk of dementia increases twice every five years. How quickly and to what extent cognitive problems will occur is influenced by education, quality of life, personality type, activity (Kiejna, Ciałkowska-Kuźmińska, 2013). The main purpose of the presented program was to improve the above function through multi-sensory stimulation.

The results of the final questionnaire indicate that the respondents noticed the measurable benefits of the massage program and were satisfied with them. Almost everyone (over 97%) declared their willingness to continue participating in this type of activity. Seniors judged that their hands’ efficiency had improved significantly. An additional positive aspect of the program was pain reduction, mood improvement (reduction of negative emotions). In addition, the subjects will emphasize benefits such as acquiring new massage skills, memory training, and social integration. Seniors showed creativity and had the opportunity to help another person.

Due to the fact that the number of older people in society increases significantly with each decade (this is confirmed by the nationwide research of PolSenior2), there is a great need to create new, multisensory and publicly available support programs whose main goal is the psychophysical and social well-being of the individual, getting them out of loneliness and making them feel needed by others for the rest of their life. The presented program may constitute an attempt and a sure proposal in this respect. Both positive and negative emotions are closely related to human functioning from an early age, a sense of awareness and control over them seem to be an important aspect of quality of life. The perspective of longevity is getting closer and more frequent, modern science and various neuropsychological theories regarding the functioning of our mind should help us create a better longevity that can impact on all of us. Interesting scientific reports related to this area and case reports of the functioning of long-lived people can be found in the study of Maria Pąchalska (2019).

An integrated self system includes the individual (objective and subjective) and social (collective and cultural) self (Pachalska 2019). This concept, however should include the minimal (working) and longitudinal (autobiographical) self, which is the basis for the formation of the self system. Therefore, I have developed a modified model of the self system, which requires the nesting of the minimal (working) and longitudinal (autobiographical) self and a change in understanding of the concepts of individual and social self in terms of the thought process (cf. Fig. 4). Therefore:

1. The individual self includes:
   A) The objective self, understood as the organism, i.e., in Goldstein’s (1995) approach, constitutes the body together with its states and the processes occurring in it. The subject self has consciousness, but it lacks self-awareness and meta-consciousness (awareness of mental operations on its own subject). The subject does not express their own thoughts but acts accord-
ing to ready-made schemes: he/she is not the author of the selves. As soon as you realize the existence of the outside world, your subject self also becomes the object of perception. This process enables the subjective self to be formed;

B) The subjective (cognitive) self, having consciousness, self-awareness and meta-consciousness, enabling one to know oneself and act in accordance with one’s own needs and values as well as the requirements of the environment. He/she has a sense of separateness, autonomy, insight (introspection), the possibility of self-assessment and self-control and creativity (Pachalska 2019). The subjective self conditions the appearance of individual identity.

2. The social self, includes:
   A) the relational self, understood as an image and description of the I-You (interactions), from an individual and social perspective taking into account relationships with other important people and social groups around which, according to Richard Brown (1987), social identity develops.
   B) the cultural self, understood as an image and description of the I-We from an individual and social perspective including a nesting in the culture or subculture of a given social group around which cultural identity develops.
The microgenetic approach to the self-system takes into account the concept of the nesting of the minimal (working) and longitudinal (autobiographical) self in the individual and social self in the processual approach, and creates the basis for the development of the self system. It also allows a better explanation of the disruptions of this system in the elderly, and thus allows them to offer them more effective rehabilitation activities.

The original program of activating seniors proved to be effective and highly rated by the surveyed seniors regardless of the support center they use. Because the exercises focused on the needs of seniors, it also brought measurable benefits to their psychophysical health, and thus the integration of the self system, and thus the improvement of quality of life.

CONCLUSIONS

1. Activation of seniors through Occupational Therapy in the form of massage significantly reduced the level of negative emotions and raised the level of positive in the examined people.
2. The elderly living in stationary social welfare homes are characterized by a lower level of cognitive function than seniors living alone.
3. The original program of activating seniors proved to be effective and highly rated by the surveyed seniors regardless of the support center they use. It also brought measurable benefits to their psychophysical health.

REFERENCES


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