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Research article

Use of "natural therapy" technology in the framework of social and psychological rehabilitation of the elderly

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Abstract: The article is devoted to the peculiarities of using "natural therapy" technology in the process of social and psychological rehabilitation of the elderly. The article analyzes the relevance of the problem of social isolation, maladaptation and loneliness of elderly people in different countries of the world, and in Ukraine in particular, leading to sustainable social and psychological dysfunctions and substantiates the need to overcome them. The author's methodology for evaluating the effectiveness of socio-psychological rehabilitation sessions with the elderly using the rehabilitation implements of natural therapy is proposed. The mechanisms and technologies of social and psychological rehabilitation of the elderly using the rehabilitation concept of natural therapy are proposed and have been tested. As part of the research, an experiment was conducted among 100 people, half of whom were engaged in an individual rehabilitation course using the technology of the ecological rehabilitation concept of natural therapy. The article describes the results of the proposed classes for the participants of the experimental group and presents proposals in the field of improving rehabilitation measures based on natural therapy in the framework of the social and psychological rehabilitation of the elderly.

Keywords: social rehabilitation; psychological rehabilitation; natural therapy; social isolation; loneliness; garden therapy

1. Introduction

Elderly people in Ukraine have a low level of social adaptation and do not have the possibility of qualitative adaptation to the processes that are actively developing within the framework of the dynamics of the social structure of society. As a result, older people have low levels of social comfortability and standard of living. These factors increase the social isolation of a significant number of people on the basis of age, which is unacceptable for modern development of civilization. At the same time, the high level of social exclusion of older people also indicates a separate level of social inequality both at the level of a separate society and at the civilizational level, as evidenced by the studies of Seyfzadeh et al. [1], Dury [2] and other scientists. These scientists actualized this problem and empirically proved its relevance.

The problem of social isolation of the elderly is relevant for most countries of the world. This is because the functioning of modern society assumes that older people with the onset of a certain age (the indicated age frames can range from 55 to 70 years old) reduce their own professional activity, and this, in most cases, leads to a restriction of social and communicative activity, which, after a certain time, leads to deepening social maladaptation and social isolation. It seems that, in the 21st century, this problem should not be relevant due to the high level of communication technologies and a wide range of opportunities for social implementation. But, as practice shows, this problem remains relevant due to the fact that professional realization remains the leading form of self-realization of the individual and, to date, no effective mechanisms have been found to replace it at an older age. This problem is relevant for both Islamic and Christian countries, which proves the relevance of social isolation for older people, regardless of their religion.

In our opinion, overcoming the social isolation of the elderly is one of the main problems of the modern world, regardless of the continent and the type of socio-economic relations. In our opinion, the leading technology for overcoming social deprivation and social isolation of the elderly is social rehabilitation. Recently, an increasing number of countries began implementing innovative geriatric and social geriatric programs. These programs are aimed at creating a culture of aging both on the part of people of retirement age and a tolerant attitude toward this process among representatives of other age groups.

The level of social exclusion among the elderly in Ukraine is especially high due to the fact that during the 30 years of Ukrainian independence, there have been significant negative transformations for a significant number of Ukrainians, which substantially reduced their own level of social comfort and social well-being.

In our opinion, programs for social and psychological rehabilitation using the natural therapy complex have a high potential for overcoming the social isolation of the elderly. That is why we propose to carry out social and physical rehabilitation through the active use of ecological methods of social work, physical therapy, occupational therapy and psychology. Natural therapy is a promising complex of rehabilitation technologies in the ecological domain [3]. Nevertheless, we consider garden therapy to be the main element of the Natural therapy. This technique is based on the rehabilitation effect of the interaction between human and plants. In conditions of low mobility of the elderly, taking care of plants contributes to their social and psychological rehabilitation in any area. Due to the fact that certain types of plants can be looked after without leaving home, which makes it possible to obtain a positive rehabilitative and therapeutic effect from garden therapy for people with severe diseases of the musculoskeletal system and other diseases that affect the mobility of the elderly.

The problem of socio-psychological isolation of the elderly is not of a national and global nature, so the United Nations (UN), the governments of the G-7 and G-20 countries and other international organizations and social institutions that take care of the problem of the quality of life and protection of the elderly should be involved in solving it. The lack of comprehensive programs for the socio-psychological rehabilitation of older people contributes to an increase in the level of social tension and social conflicts within individual countries of the world and increases the level of dissatisfaction with their own lives for tens of millions of people around the world. Our research will contribute to the development of practical solutions for improving the process of social and psychological rehabilitation of the elderly.

2. Literature review

The problem of social isolation of the elderly and the specifics of its overcoming are investigated in the works of Seyfzadeh et al. [1], Dury [2], Chen and Schulz [4] Choi et al. [5], Iecovich et al. [6] and Anishchenko et al. [7]. These scientists focused their own research on the problem of social isolation of the elderly and ways to overcome this problem through communication and rehabilitation tools. Today, the use of ecological rehabilitation tools expands the horizons of overcoming social isolation and other types of social maladjustment of the elderly. Zaporizhzhia scientists are actively dealing with the problem of the development of natural therapy and garden therapy [3,8,9]. The specified team of scientists is engaged in the formation of the natural therapy methodology in the Zaporozhye region of Ukraine and the introduction of garden therapy on the island of Khortytsia. These scientists focus on the implementation of natural therapy and garden therapy in rehabilitation work with children, older people and veterans of military conflicts.

3. Methods

The methodological basis of the research is based on the experimental testing of the program of social and psychological rehabilitation measures for the elderly. The sample consisted of 100 respondents (50 respondents each for the experimental and control groups). The size of the experimental group was calculated based on the fact that the groups should be the same in terms of age and gender, and the quantitative indicators of 50 people met the criteria for conducting exploratory experiments. The criterion of gender differentiation in summarizing the results was used due to the principle of gender parity. The selection of the participants of the experimental group was carried out by using the omnibus method in cooperation with partner organizations that implemented rehabilitation projects on the subject of the study in these locations. The division of groups into experimental and control groups assumes that the participants of the experimental group felt the effects of the cycle of classes, while the participants of the control group did not participate in rehabilitation classes, which ensures the reliability of the experiment. Among the participants of the experiment were both men and women; the gender factor was not investigated separately within the experiment, but it was differentiated by us as an additional factor for evaluating the cycle of classes. The program of social and rehabilitation activities included classes on the elements of garden therapy, agrotherapy and animal therapy within the framework of the rehabilitation concept of natural therapy. Respondents were divided into the proportion of 50% to 50% depending on sex. The age range of participants in both the experimental and control groups was from 66 to 78 years old. Before and

after the classes, within the framework of the experiment, the research was designed based on the level of social comfortability according to the author's own questionnaire and the "aggressiveness" test [10]. Residents of the Zaporozhye region (Zaporozhye, communities of the Zaporozhye region, Novouspenovskaya community of the Melitopol region and the city of Tokmak) and the Donetsk region (Volnovakha, Olginka, Maryinka) took part in the experimental research. Before the start of the experiment, participants in both the experimental and control groups had a conversation about their general well-being. In addition to the experimental part, the research methodology included document analysis, document content analysis, an extrapolation method, theoretical situation modeling, etc.

As part of the experiment, the experimental group was asked to do the following exercises for 3 months. First, the participants of the experimental group living in the territory of settlements took part in the sowing of lavender and an open garden therapy lesson on the territory of the rehabilitation zone of the Khortitsa National Academy. After that, the group members were tested to determine the level of social comfortability and aggressiveness according to the Pochebut questionnaire; and, the blood pressure and glucose levels were measured. A similar procedure was carried out with members of the control group. After that, the participants in the experimental group were asked to actively care for plants 8 hours a week, take care of pets and livestock for 3 hours a week, and, if possible, process vegetables, fruits and berries through conservation, shock freezing and the creation of dried fruits. Individuals in the control group did not engage in these activities, but, like the representatives of the experimental group, they kept a blood pressure diary and gave blood once a month to measure their glucose levels.

4. Results

The problem of social isolation, as we have already found out, is relevant for different countries. According to Chen and Schulz [4], one of the effective ways to overcome it is to develop the communicative abilities of older people and master modern communication technologies. This point of view is appropriate, but at the same time, older people should be motivated to increase their own involvement in activities in a particular area of public life. Moreover, being under conditions of social isolation and loneliness can lead to psychological problems and behavioral disorders, as evidenced by the results of a study by Choi et al. [5]. Features of the transformation of both modern Ukrainian society and those societies within which Ukrainians lived before the restoration of independence (the Austro-Hungarian Empire, the Russian Empire and the USSR) have led to the fact that social groups that are not at the forefront of social dynamics are prone to social isolation and loneliness. A 2008 study by Iecovich et al. [6] has shown that older Jewish community members living in Ukraine and Russia were in social isolation, which confirms our hypothesis that the departure from active social practices leads to automatic social isolation; this problem, in the post-Soviet countries, including Ukraine, is much more relevant than in other countries of the world. The relevance of social rehabilitation for the elderly and the use ecological means of rehabilitation in the framework of work with this group of patients in their study has been proved by the Ukrainian team of scientists headed by Anishchenko et al. [7]. Regarding the ecological methods of social and psychological rehabilitation, we include, among other things, the technologies of the rehabilitation concept of natural therapy (agrotherapy, animal therapy, garden therapy and other types of therapies that use therapeutic and rehabilitative effects within the framework of the interaction of the human-nature system).

5. Discussion

The results of our research proved that our proposed course of classes based on natural therapy is effective in the social and psychological rehabilitation of the elderly due to the reduction of the levels of social isolation and social adaptation. In our opinion, this state of affairs is due to the fact that the components of natural therapy are based on natural components that were close to the elderly during their childhood and youth, when they did not have a high level of social maladjustment or social isolation. In addition, interacting with nature is natural and important for a person throughout their life, and it is lost with age. The results of our experiment proved the effectiveness of classes at the physical, social and mental levels. Pozdniakova-Kyrbiatieva and Mosayev, as part of their study, argued that the use of natural therapy and other ecological methods of social and psychological rehabilitation, in addition to their effectiveness, constitute an important element in the implementation of the European Green Deal and Ukraine's accession to it [8]. Today, in the territory of the east of Ukraine, especially in the city of Zaporozhye, therapeutic garden and agro-therapeutic locations are being actively created, and Ukrainian rehabilitation specialists are actively experimenting with the use of animal therapy technologies in rehabilitation programs (apitherapy, hippotherapy, dolphin therapy, etc.). At the same time, in Ukrainian rehabilitation, most of the innovative concepts and technologies are primarily aimed at children with different diseases. This story has signs of ageism, because, despite the importance of the rehabilitation of children, one should not forget about the elderly. This category of the population, like others, needs high-quality social rehabilitation. For more than 3 years, a number of public organizations, with the financial support of the Small Grants Program of the Global Environment Fund, have implemented a number of inclusive rehabilitation projects in the territory of Ukraine aimed at people with disabilities, women and the youth [11]. These projects have received international recognition at the UN level at the International Environmental Forums.

According to Mosaev, Myshchenko et al., during the Ukrainian-Russian military conflict, social psychological rehabilitation has been receiving additional developmental perspectives within social hubs [9]. Within the framework of social hubs, there is an opportunity to concentrate efforts and establish communications between refugees of all ages and socially active citizens of big cities. The formation of life in a new place of residence stimulates the activation of their own resources of representatives of different ages. The concept of concentration of resources to improve the efficiency of the provision of social services makes it possible to create at least four centers for social and psychological rehabilitation that focus on using natural therapy and other rehabilitation technologies.

6. Practice implication

After the end of the experiment, we came to the following conclusions. The survey on the definition of social comfortability gave the following results. Thus, the level of social comfortability among the participants in the experimental group increased by 8%. Among women, this index was 12%, and it was 4% among men. The most positive changes occurred in the category of 68–72 years old. In our opinion, these indicators can be explained by the fact that the best indicators were shown by the younger participants in the experiment because they were alone and socially isolated for the shortest time interval compared to other participants in the experiment. The level of social comfortability had increased, mainly among women, and relatively minimally compared to men;

this is because men have the social feature of being less adaptable to the realities of social life; therefore, this gender aspect has a significant impact on both the levels of social exclusion and social comfortability in general. Among the representatives of the control group, positive dynamics in the sphere of increasing the level of social comfortability were observed only in 2% of the participants in the experiment. Why was it important for us to measure the level of social comfortability? It was because, in our opinion, it is this definition that characterizes the individual's assessment of their position in society, that is, one's own level of satisfaction, torment and fulfillment in the framework of social practices. The concept of social comfortability and even a certain comfort zone is an important indicator for people with high levels of social maladaptation and social isolation. According to Russell [12], this indicator is important for social integration for people with autism. Therefore, by analogy, within the framework of our research, we included in the methodological part the measurement of the dynamics of the level of social comfortability. And, as the results of the experiment showed, this marker can be used in the research of the level of effectiveness of social rehabilitation technologies. The experiment itself showed that the classes offered to the participants in the experimental group had an effect in the field of social rehabilitation of the elderly. In our opinion, this was also facilitated by the communicative effect of involving older people in the experiment, and, undoubtedly, the effectiveness of the rehabilitation course of classes and exercises itself should be recognized.

After assessing the level of social comfortability at the first and second stages of the experiment, we summed up the results of diagnosing the level of aggressiveness [10]. The relevance of determining the level of aggressiveness in our research is due to the fact that this indicator is a common marker of psychological and behavioral disorders, as evidenced by a study by a team of Polish psychologists headed by Florek et al. [13]. According to this team of scientists, during the COVID-19 pandemic in Poland, it was the general level of aggressiveness and occasional alcohol consumption that increased, which, in our opinion, became a manifestation of social exclusion and social maladaptation. Therefore, when determining the methodological basis of the research, we included an indicator of the level of aggressiveness in it. Within the framework of this research, at the end of the rehabilitation process, the level of aggression among the representatives of the experimental group decreased from a high rate to an average of 16%. Among men, this index was 20%, while among women it was 12%. In 6% of the participants in the experimental group, the average indicator of aggressiveness was transformed into a low one in 6% of the respondents. Most of the changes in the indicator of the level of aggressiveness were recorded in the participants of the experiment from 73 years old. In our opinion, such changes occurred due to the fact that, due to them being less emotionally intelligent, men accumulate the feeling of aggression and do not have mechanisms for its canalization. As a result, this increases the level of social maladaptation and social isolation. This is especially true for the oldest age categories due to the peculiarities of their socialization and sociocultural values. An increase in the level of aggressiveness after the rehabilitation course was not observed in any of the participants in the experimental group. Representatives of the control group showed no significant changes in the indicator of the level of aggressiveness at the end of the experimental period.

The methodology of the research included, in addition to assessing the levels of social comfortability and aggression, an assessment of two indicators of the physical state of health. We agree with the South Korean researchers led by Lee on the importance of the influence of blood pressure [14], as well as a team of Thai scientists led by Tamornpark et al., who consider blood

glucose levels to be one of the most important medical indicators of the quality of life [15]. That is why blood glucose and blood pressure indicators have become sociobiological markers of the effectiveness of the rehabilitation process as part of the research of the effectiveness of our rehabilitation program.

According to the results of glucose tests at the beginning of the experiment and at the end, 22% of the participants in the experimental group showed a positive trend in the normalization of blood glucose. Among men, this percentage was 14%, and it was 28% among women. It should be noted that, among the representatives of the experimental group, complaints about high blood sugar were received from 24%. At the same time, another 12% had glucose levels close to the limit for determining type 2 diabetes mellitus, and an additional 18% of the participants in the experimental group were at risk of developing diabetes mellitus due to their professional activity and genetic predisposition. In our opinion, these results were achieved due to the reduction of stress during the distracting rehabilitation activities and the increase in physical activity, which usually has a positive effect on the blood glucose level. The blood sugar test results of the participants in the control group showed no significant changes during the experiment.

According to the results of the study, after the course, 44% received a positive physical rehabilitation effect, 52% a social rehabilitation effect and 58% a psychological rehabilitation effect (Figure 1).

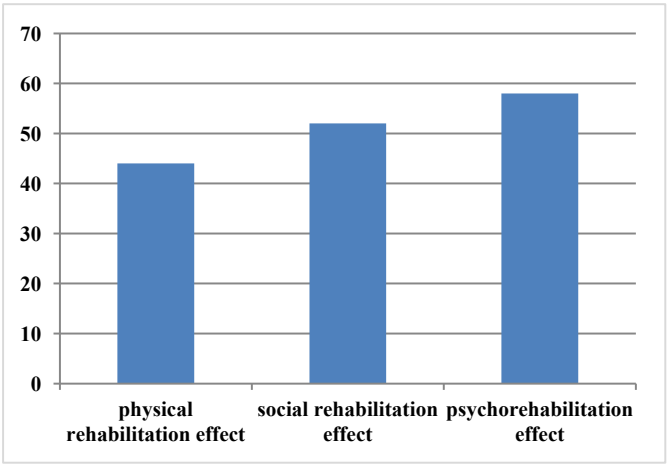

Figure 1. Rehabilitation effects of course components (%).

The effectiveness of the rehabilitation program for the patient (Function (1)).

$$R = \frac{K_{(1+2+...n)} + F_{(1+2+...n)}}{N} \quad (1)$$

$K_{(1+2+...n)}$ - clinical indicators,

$F_{(1+2+...n)}$ - instrumental indicators,

N - number of indicators taken into account.

After which, the effectiveness of treatment and rehabilitation measures was evaluated based on the obtained number, as follows: <1.0 - worsening condition, 1.0–1.4 - unchanged state, 1.5–2.0 - slight improvement and 2.1–3.0 - significant improvement.

The research of the dynamics of changes in blood pressure during rehabilitation classes among

the participants in the experimental group gave the following results. In 26% of the subjects, there was a tendency to reduce the increased level of pressure, although the indicators were higher than the normative indicators. In 12%, the level of high blood pressure decreased to normal levels. In 6%, the level of blood pressure decreased beyond the normative indicators. In 4% of the subjects, the blood pressure level decreased beyond that of the normative indicator, and this led to discomfort for the general state of health. In 2% of the participants in the experiment, the blood pressure relative to the normative indicators increased. The results of the control subjects for changes in blood pressure showed a 10% increase in blood pressure, a 4% decrease to normal and a 6% decrease to discomfort at the normal threshold. Considering all of the above indicators, we can conclude that rehabilitation exercises, compared with the participants in the control group, have a significant impact on the level of blood pressure. In most cases, we noted a positive trend in the change in blood pressure among the participants in the experimental group. At the same time, there were also cases of blood pressure decrease and increase by non-normative indicators. These results indicate that, within the framework of the implementation of rehabilitation programs, rehabilitation sessions should be individualized as much as possible so as to take into account the diseases and characteristics of the organism and the psychological state of the person in need of social or psychological rehabilitation by means of physical activity.

The last element of our experimental program was the evaluation of the results of the conversation with participants in both groups who took part in the experiment. Among the participants in the experimental group, 32% noted positive changes in their well-being compared with the beginning of the experiment; 36% of these participants were women and only 28% were men. Once again, we note a certain gender-based conditionality of the positive effect of rehabilitation classes using the natural therapy technology. By age, positive effects were observed evenly among participants of all ages. Among the participants in the control group, positive changes in their own well-being were noted by 8% of the participants. And, their number on the basis of gender was the same.

7. Conclusions

According to the results of the experimental research, the following results should be noted. Older people are prone to social maladaptation, social isolation and loneliness. All of the problems we have listed indicate the need for social and psychological rehabilitation of the elderly. As the results of our experiment showed, rehabilitation classes that apply the means of the rehabilitation concept of natural therapy show good results in terms of overcoming social isolation, maladaptation, the consequences of loneliness and helping to improve the physical condition of older people.

The main indicators of the effectiveness of the studied course are indicators of the levels of social isolation and mental and physical health; 18% of participants in the experimental group improved their physical health indicators, 26% improved the mental health indicators and 38% decreased the level of social isolation. The specified indicators testify to the effectiveness of all indicators for the course of rehabilitation classes; and, we noted a special effectiveness in the field of overcoming social isolation in the elderly.

The results of the study showed a high potential for using the means and the rehabilitation concept of natural therapy, but they require individualization and technical improvements based on the individual needs of each person in need of social and psychological rehabilitation, as based, among other things, on socio-demographic indicators, temperament and character, as well as the

health profile of each client of the rehabilitation institution or establishment where he/she is undergoing rehabilitation.

The main result of the study can be considered as the possibility of applying the proposed program of classes for the elderly with the aim of social and psychological rehabilitation for the elderly suffering from social isolation and other types of maladaptation.

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Conflict of interest

The authors declare that they have no conflict of interest.

Author contributions

Mykhailo A. Anishchenko contributed in the methodology, formal analysis, original draft preparation. Ellina G. Pozdniakova-Kyrbiatieva contributed in the validation, writing—review and editing, supervision. Yurii Volodymyrovych Mosaiev contributed in the Conceptualization, formal analysis, data collection, computational simulations. Oleksandr V. Krasnokutskyi contributed in validation, methodology, formal analysis. Volodymyr V. Glazunov contributed in the formal analysis, data collection. All authors have read and agreed to the published version of the manuscript.

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