MEDICAL UNIVERSITY – VARNA
"Prof. Dr. Paraskev Stoyanov"
Faculty of Public Health
Department of Health Care

Yanka Georgieva Markova-Dimitrova

MODELS FOR HEALTH CARE AND WELFARE OF LONELY LIVING ELDERLY PEOPLE

AUTHOR'S SUMMARY

of the dissertation for the award of educational and scientific degree "Doctor"

Scientific subject

„Health care management"

Supervisors:
Prof. Silviya Borisova, DrPH
Ass. Prof. Marinela Grudeva, D.P

Official reviewers:
Prof. Dr. Sonya Toncheva, DrPH
Prof. Dr. Ivanichka Serbezova, D.P

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The dissertation contains 176 pages and is structured in five main chapters. Includes 65 figures, 10 tables, and 9 enclosures.

The bibliographic list includes 184 literature sources, of which 124 are in Cyrillic, 48 are in Latin and 12 are Internet addresses.

The dissertation is discussed and directed for defense by the extended departmental council of the Department of Health Care at the Medical University "Prof. Dr. P. Stoyanov"- Varna, on 24.09.2019.

The public defense of the dissertation will be held on October 16, 2019 from 13.30 am in Hall A at the Medical College of the Medical University "Prof. Dr. P. Stoyanov"- Varna, at an open meeting of the Scientific Jury.

The defense materials are available in the Department of Doctoral School of the Medical University - Varna and are published on the website of the Medical University - Varna.

CONTENTS

ABBREVIATIONS USED

ST	State Gazette
DCC	Diagnostic - Consultation Center
EU	European Union
MSA	Medical and social assistance
MSI	Medical and social institution
MPHAT	MULTI-PROFILE HOSPITAL FOR ACTIVE TREATMENT
MH	Ministry of Health
INU	International Nursing Union
MC	Medical Centre
NHIF	National Health Insurance Fund
NSI	National Statistical Institute
NCPHA	National Center for Public Health and Analysis
UN	United Nations
GP	General practitioner
GD	Government Decree
USA	United States of America
WHO	World Health Organization
ANA	American Nursing Association
NANDA	North American Nursing Diagnosis Association
ICNP	International nursing practice
INGESA	National Institute of Health /Spain - Ceuta, Melia/
NANDA	North American Nursing Diagnosis Association
NIC	Nursing Interventions Classification
PAHO	Pan American Health Organization
PES	Problems, etiology, symptom
SHCEK	Institute for Social Security and Child Protection /Turkey/
VIPS	well-being, respect, prevention, safety

I. INTRODUCTION

"I learned that people will forget what you said,
people will forget what you did, but people
will never forget
how you made them feel ... "
Maya Angelou

One of the major global problems of humanity in the 21st century is the aging of the population. According to the NSI, on the average one adult person suffers from 4-6 chronic diseases. In most cases, chronic illnesses lead to impaired vital functions, partial or complete loss of self-care, mobility, communication, and employment opportunities. All this requires the organization of a system of permanent medical and social care.

Studies conducted in different countries related to improving the organization of medical and social assistance to the population indicate different approaches to the analysis of the effectiveness of its provision, mainly in a stationary conditions. The provision of health and social services in the home environment and their effectiveness is an up-to-date problem for developing effective approaches to the provision of home healthcare [169].

Successful achievement of this goal requires a comprehensive approach, in joining the efforts of a large group of specialists from different fields of medicine and therapy - general practitioners, specialist doctors, nurses, rehabilitators, psychologists, social workers, occupational therapists and others.

The relevance of the topic of this dissertation is determined by the perspectives on the healthcare and social well-being of lonely living elderly people who require skilled, long-term and comprehensive nursing care.

The analysis of the literature shows that there are a number of studies on the problem of old age and aging, integrated and long-term care for the elderly people, but we do not find a targeted study of the specific activities of the nurse provided in the home conditions with lonely living elderly people.

The current study has created the opportunity to substantiate and outline the areas and fields of care for the health and well-being of lonely living elderly people. It has fixed the need for home healthcare for the elderly people, support and assistance to maintain quality of life. The study of the problem will make it possible to evaluate the importance of healthcare, as well as to apply the Model for the healthcare and welfare of lonely living elderly people at home.

II. AIM, TASKS, MATERIAL AND METHODOLOGY OF THE STUDY

2.1. Aim and tasks of the study

Aim: To study the basic biological and psycho-social needs of lonely living elderly people in the Veliko Tarnovo district and to justify optimal models of care for preservation, maintenance and restoration of health and well-being.

To achieve this goal, the following **tasks** have been set:

1. To explore the main priorities in European research on aging.
2. To make a theoretical analysis of the database of the Bulgarian Research Area on Aging.
3. To determine the biological and psychosocial determinants of the quality of life of older people.
4. To analyze the organization of care for elderly people at home in the Veliko Tarnovo district.
5. To examine the opinion of specialists from out-of-hospital, hospital care and social services on the provision of home healthcare and social care in the Veliko Tarnovo district.
6. To approve a home care model with the purpose of tracking the quality of life of the elderly people at the beginning and after 6 months, using a standardized questionnaire.
7. To develop models for the care and health of lonely living elderly people at home.

2.2. Working hypotheses

The following working hypotheses were formulated on the basis of the studied literature and the goal of the dissertation:

1. The implementation of organizational models of care will lead to the preservation, improvement and restoration of health and will increase the well-being and satisfaction of lonely elderly people.

2. In the process of caring for the elderly, the nurse is not actively involved in providing them at home.
3. The interaction between health professionals and lonely elderly people is unsatisfactory and lacks feedback.
4. We assume that the active participation of the nurse in the care for the health and well-being will significantly improve the quality of life for lonely elderly people.

We developed the hypotheses, taking into account the need to optimize home healthcare by the elderly people.

2.3. Stages of the research activity

Dissertation activities were conducted in 8 stages:

Stage	Activity	Venue of conduct	Toolkit	Period
Stage 1	Analysis of specialized literature in connection to the relevance of the studied problem.	town of Veliko Tarnovo	Specialized literature; specialized bases publications data.	March 2018 - December 2018
Stage 2	Designation of goals and tasks of the dissertation research; selection of appropriate methods; development of tools for its conducting.	town of Veliko Tarnovo	Informed consent for including in experiment; Health and Wellbeing Questionnaire; Questionnaires.	April 2018 - November 2018

Stage 3	Creating an organizational model for the care of lonely elderly people; demographic survey.	town of Veliko Tarnovo	Schematic model of care; Questionnaire assessment of the condition and care; Visual Analog Scale;	December 2018
Stage 4	Analysis of received results; determination of experimental and control group; quality of life assessment.	District Veliko Tarnovo	Preliminarily set criteria for selection of patients;	November 2018 - December 2018
Stage 5	Implementation of care models for the period of 6 months. Assessment and analysis of the condition of the elderly people through filling in a status assessment information card.	District Veliko Tarnovo	Information card for assessment of the condition; Questionnaire to evaluate health and quality of life	January 2019 - June 2019
Stage 6	Analysis and assessment of the condition of the elderly people; self-assessment of the condition; quality of life assessment.	District Veliko Tarnovo	Questionnaire for satisfaction with the care model; Information card for the status assessment.	July 2019

Stage 7	Statistical processing and analysis of the results at the different stages of the study.	town of Varna town of Veliko Tarnovo	STATISTIC A 8.0 Stat. Soft. Inc. and IBM SPSS Statistics Version 23.	July 2019 - August 2019
Stage 8	Formulation of conclusions, contributions, Recommendations derived from the dissertation	town of Veliko Tarnovo		August 2019 - September 2019

Criteria for participation of elderly people: lonely living elderly people; age – 65 – 74 years; the presence of a health problem that requires care in a home environment; informed consent to participate in the experimental study.

Exclusion criteria: lonely living elderly people in a household with loved ones and family; mental illness.

For the purposes of the experiment, 100 individuals from the Veliko Tarnovo district, who are in the age group of 60 to 74 years old, living alone, were included for the period from December 2018 to May 2019. The 6-month experimental study includes four visits to lonely living elderly people. The venue is the home of the elderly person in the towns of Veliko Tarnovo, Gorna Oryahovitsa, Lyaskovets, Svishtov and neighboring small settlements. The sample contains 31 people in the experimental group and 32 people in the control group.

Questionnaires, a visual analogue scale for health assessment, a questionnaire for quality of life and health status evaluation were developed with the purpose to achieve the goals and objectives of the study.

The following principles were observed when conducting the experiment:

- **Control -** to eliminate the influence of possible unexplored factors, the development in the experimental group is observed and compared with that of the control group;
- **Randomization** - random selection of study in the experimental and control group, which ensures an equal baseline for both groups;
- **Repetitions** - enough repetitions are applied to detect differences in the development of the indicators.

2.4. Study material and methodology

2.4.1. Object and scope of the study

For **object of observation** of this study we determined:

- **Older people living alone - 100;**
- **Patients** hospitalized in the therapeutic and surgical wards of MPDHAT "Dr. Stefan Cherkezov" AD Veliko Tarnovo; MHAT"Dr. Dimitar Pavlovich" EOOD. Svishtov - **300**;
- **Medical specialists** involved in the process of providing healthcare for older people from hospital and out-of-hospital care - DCC "Dr. St Cherkesov" EOOD Veliko Tarnovo; DCC I EOOD Veliko Tarnovo; "Norma" Medical Center Svishtov; ET "IPMP-LK Dr. Hristo Popov" Svishtov; Retirement home for elderly people "Veneta Boteva" Veliko Tarnovo; "Hospice-Elena" OOD Elena; Retirement home for elderly people "Maria Louisa" Svishtov and in small settlements (village) **- 200;**
- **Specialists providing social services to the elderly** - Retirement home for elderly people "Veneta Boteva" Veliko Tarnovo; "Social Activities" Directorate Municipality of Veliko Tarnovo; "Hospice-Elena" OOD Elena; Retirement home for elderly people "Maria Louisa" Svishtov **- 40;**

Logical units of the survey

- Medical specialist, working in the field of the out-of-hospital and hospital care;
- Social worker practicing in the field of social services;
- An adult over 65 years of age in need of care at home.

2.4.2. Indications for the logical units defined

Indications at the first logical unit:

- concerning options for providing healthcare at home;
- related to the nurse's willingness to provide activities within the scope of her professional competencies to preserve, protect and restore the health of the elderly;
- related to the conditions and opportunities created by the legislative and regulatory framework in the Republic of Bulgaria for providing healthcare at home;

Indications at the second logical unit:

- related to the medical-social services provided at home to elderly and lonely living people;
- concerning the need to improve the existing legal framework in the Republic of Bulgaria related to home healthcare and social services;

Indications at the third logical unit:

- related to the need for home healthcare;
- concerning self-esteem of emotional state and physical health;
- relating to the need for medical and social care at home;
- related to the level of satisfaction of the elderly with the care provided at home.

The study was realized through typological selection. At the stage of

preparation for the scientific study the required number of observation units was calculated at 95% significance level. The calculations were made for both quantitative and qualitatively measurable features. In the process of gathering information, as it was targeted the survey was conducted in each group with a larger number of respondents. In the first stage the centers for the study were identified - Veliko Tarnovo, Gorna Oryahovitsa, Svishtov. In the second stage, observation units were selected using self-random sampling.

For medical professionals, the study was conducted as a representative one. With the view of the randomness of the selection, medical specialists during the first shift of the working day in the medical establishments from outside the hospital and in the hospital medical care were interviewed. The surveyed 200 medical specialists represent 27% of the medical specialists working in the mentioned medical establishments.

2.5. Sources for gathering information

- **Opinion of doctors,** working in the field of out-of-hospital care – Svishtov, Veliko Tarnovo, Gorna Oryahovitsa;
- **Opinion of doctors,** working in the field of hospital care –Svishtov, Veliko Tarnovo, Gorna Oryahovitsa;
- **Opinion of healthcare professionals,** working in the field of out-of-hospital care – Svishtov, Veliko Tarnovo, Elena, Gorna Oryahovitsa;
- **Opinion of healthcare professionals,** working in the field of hospital care – Svishtov, Veliko Tarnovo, Gorna Oryahovitsa;
- **Opinion of social workers,** working in Svishtov, Veliko Tarnovo, Elena, Gorna Oryahovitsa;
- **Opinion of persons aged 65 and over** in need of MSA at home – Svishtov, Veliko Tarnovo, Elena, Gorna Oryahovitsa, Petko Karavelovo; Vardim; Belyakovets;

- **Available national and international regulatory documents**, related to health, citizens' rights, nursing activities and out-of-hospital and hospital healthcare.
- **Scientific literature available** - studies of our and foreign authors on the problem.

2.6. Methods of the study

- ***Documentary Method*** **-** study of normative documents, strategies, rules and guidelines related to the provision of health and social services to the elderly people.
- ***Method of Inquiry*** **-** a direct survey to study the health and well-being of lonely living elderly people participating in the experiment; direct individual anonymous survey with medical professionals; doctors and nurses working in the field of out-of-hospital and hospital care; social workers; people over 65 years of age and in need of care at home.
- ***Monitoring Method*** - monitoring the implementation of the recommendations on health and well-being of the elderly people.
- ***Experimental method*** - a model for a prospective study of the healthcare and welfare of lonely living elderly people in the Veliko Tarnovo district.

2.7. Statistical methods for processing the information

Methods of analysis including statistical grouping of data are applied; statistical evaluation:

- **Confidence probability (significance) - $p<0.05$**. At a critical significance level $p<0.05$, i.e 95% guaranteed probability.
- **Confidence Interval (CI) -** represents the limits to which, at a given warranty probability, the true value of the indicator is found.

95% confidence intervals are used.

- **Variational analysis** to examine the variations of variables.
- **Analysis of variance** to test hypotheses for equality between more than two average values.
- **Non-parametric analysis** - taking into account distributions other than normal, as well as when finding connections and matching criteria $\chi 2$ (chi-square) of Pearson.
- **Correlation analysis** - to determine the strength of existing relationships in dependence on bounds of the correlation coefficient, by the Pearson and Kendall method.

The experimental results were analyzed according to the following statistical methodology:

- **Student's Test** for independent samples, where the null hypothesis consists in assuming equality of the respective theoretical means (the difference between the empirical average values is not statistically significant). The non-parametric Mann-Whitney test is also used to confirm the results of the Student's test, where the null hypothesis is usually formulated as an assumption of equality of the relevant theoretical medians. The two tests have similar cognitive function;
- The comparisons also used two-factor **analysis of variance**, which tested three null hypotheses: one for the main effects of the two factors and one for the effect of their interaction.
- The reliability of some of the formed generalized scales was tested using the classical theory of tests - **Cronbach's alpha coefficient.**
- **Factor analysis** is applied by the method of principal components, confirming the unidimensionality of the latent space of the scales, as well as for the formation of factor scores (FS - factor scores). The factor loadings represent

indicators of discriminatory strength of the test unit. They must be positive (in the sense of the test unit) and approximately equal in magnitude.

- When examining some of the generalized scales means from **Item Response Theory** are used. The GPCM and 2-PL models from IRT allow the calculation of EAP results (EAP – scores), which to be used in the statistical analyzes. The distribution of these results is close to standard normal.
- **The linear correlation coefficient R** indicates the direction and strength of the linear statistical association between the variables for which it is calculated. The values of r vary between -1 and 1. Together with the value of r, its **significance** P is also carried out, which represents the achieved level of significance (p-value) from the check of the null hypothesis that the true value of the coefficient is zero.
- **Chi-square test (ChiSquare)** is used for establishing the existence of a statistical association between appropriately structured variables. The null hypothesis here is that the variables are independent.

All null hypotheses are tested by the reached p-value significance level. The basic interpretation of p-value is the probability of a first-kind error - an error that would occur when the null hypothesis is rejected, provided that it is actually valid. Therefore, sufficiently small p-values suggest rejecting the null hypothesis. The usual threshold value is 0.05 (5%). The p-value values are given along with the corresponding validation statistics.

The main purpose of statistical processing is to provide objective arguments in favor of the hypothesis that the quality of life is improved in certain aspects in the experimental group.

Upon statistical processing is used STATISTICA 8.0 Stat. Soft. Inc. and IBM SPSS Statistics Version 23.

2.8. Survey toolkit

- **Questionnaire No. 1** - to study the opinion of the elderly on the indications studied with 34 questions, of which 31 were closed, 3 were half closed and 3 were open.
- **Questionnaire № 2** - to study the opinion of medical specialists on the investigated indications with 21 questions, 16 of which are closed, 4 half-closed and 1 open.
- **Health Assessment Questionnaire No. 3** - to study lonely living adults' views on quality of life at the beginning and end of the experiment.
- **Visual Analog Scale (VAS) -** continuous scale in the form of a line and two endpoints ranging from 0 to 100; from the worst possible health condition (0) to the best possible health condition (100). Insert a line perpendicular to the visual analogue scale at the point corresponding to health.
- **Informed Consent -** it was developed for the purpose of the study, presents the purpose and what the study includes, certifies consent to participate in the experiment.
- **Health and wellbeing model assessment questionnaire -** covers the key factors on which health depends. It contains 17 closed-ended questions to evaluate the expected results of the Care Model implementation.
- **Scientific literature available -** studies of our and foreign authors on the problem.

III. RESULTS AND DISCUSSION

3.1. Demographic characteristics of the Veliko Tarnovo district

Veliko Tarnovo District is located in the central part of North Bulgaria and the western part of the North Central Region. Its territory covers an area of 4 662.6 m² (4.2% of the country's territory). The largest municipalities in the district are Veliko Tarnovo, Gorna Oryahovitsa and Svishtov. The relief in the northern part is lowland plain and in the south - hilly plateau and mountainous. Most of the settlements in the district (49.4%) are of the "sparsely populated" type, ie. with a population of up to 200 people. The settlements without population are in three municipalities of the district, which are located in the southern, mountainous parts - Veliko Tarnovo municipality (21 settlements without population), Elena municipality (21 desolate settlements) and Zlataritsa municipality (9 settlements without population). There are 14 towns located on the territory of the district, most of which are municipal centers. Of these, 3 towns (Veliko Tarnovo, Gorna Oryahovitsa and Svishtov) are in the category of medium-sized cities and 1 in the category of small cities – Pavlikeni. Regarding the population size in the individual settlements, in the territory of Veliko Tarnovo district, there are two zones:

- ***Area with settlements with larger population***, which gives grounds for them to operate service facilities for primary care of the population - primary schools, kindergartens, outpatient clinics, community centers and more. This zone includes the municipalities in the northern, plain part of the Veliko Tarnovo district;
- ***Area with settlements of the so-called. "Scattered type"*** (ex neighborhoods and cottager's settlements) in the mountainous parts of the district. These types of settlements are sparsely populated, with populations below 100, even below 50 people. The small number of the population in the greater part of the settlements in the mountainous parts of the Veliko Tarnovo district poses serious problems with the service of the population and the resources used.

As of December 31, 2017, the population of the Veliko Tarnovo district is 239 132 people, which represents 3.4% of the country's population and ranks the district ninth in terms of population of the 28 districts in Bulgaria. Compared to 2016

The population of the district decreased by 3 127 people, or by 1.3%. The males were 115 655 (48.4%) and the females were 123 477 (51.6%) (Fig. 1.).

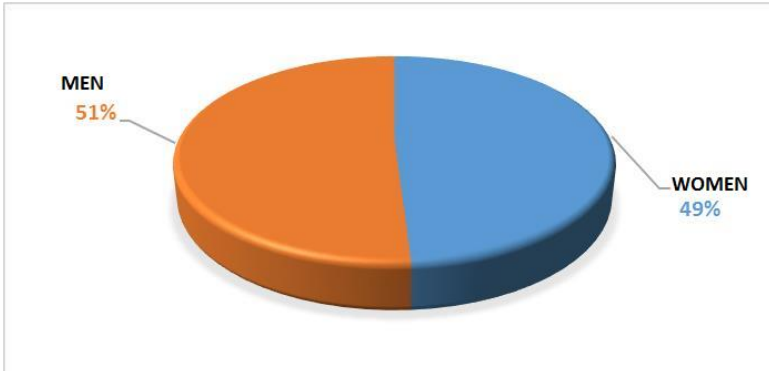

Figure 1. Population breakdown by gender, Veliko Tarnovo district 2017 (by NSI)

According to NSI data, as of 12.04.2019, people aged 65 and over are 55 435, or 23,5% of the population of the district. The share of the population in this age group is increasing by 0.9% compared to 2017. The aging process is more expressed by women than by men (Fig. 2). The relative share of women over 65 years is 59.3%, and of men - 40.7% of the population of the district. The difference is due to the higher mortality rate among men and, as a consequence, the lower average life duration for men. In regional terms, the share of people aged 65 and over is highest in the municipalities of Suhindol (30.9%), Polski Trambesh (30%) and Pavlikeni (29%).

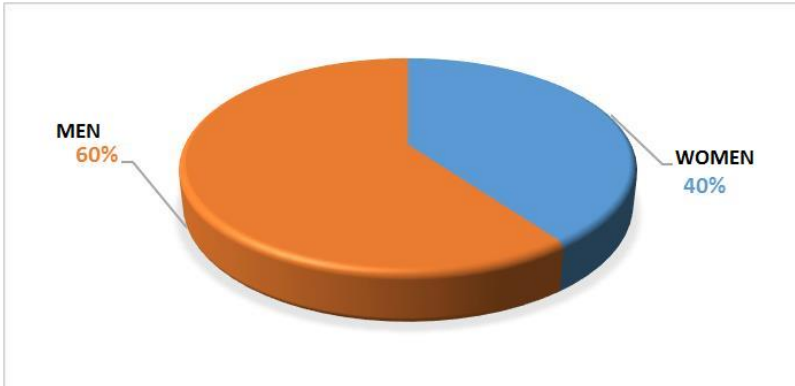

Figure 2. Relative share of people over 65 years, Veliko Tarnovo District, 2019

The share of the elderly population in the municipalities of Veliko Tarnovo is the lowest - 19.6%, Strazhitsa - 21.8%. The aging of the population in the district leads to an increase in its average age, which is 44.7 years at the end of 2017 (42.9 years for men and 46.3 years for women).

There are **factors that create risk** for different population groups: demographic factors that are directly related to the risk groups and the development of medical and social services in Veliko Tarnovo Municipality; unemployment for people of working age; limited access to employment; place of residence; limited access to public health services, including those living in small towns, away from urban centers; the lack of intersectoral services that include health, education and social activities are poorly developed and this makes it difficult to provide comprehensive support to vulnerable groups.

According to data from mayoral deputies, retirement clubs and social workers of the Social Assistance Directorate, lonely

living elderly people in the territory of Veliko Tarnovo municipality are 570 people, and there are 621 people in the district.

3.2. Well-being and health of lonely living elderly people in the Veliko Tarnovo district

Elderly people well-being is an aspect that is determined by the retained ability to actively perceive one's own health status and to realize itself in all components of the environment. Maintaining a high level of this quality is more important than prolonging life, because in such cases death is not an unexpected event and the patient is mentally prepared for it.

A sociological study of the quality of life and the opportunities for maintaining the well-being of the elderly and old people in the Veliko Tarnovo district was conducted. The survey included 300 MSA users and 100 lonely elderly people from the Veliko Tarnovo district.

To determine the impact of age-related changes and their impact on quality of life, viability, care and service needs, we included people between the ages of 60 and 74 living in the Veliko Tarnovo District (n = 139).

In order to accurately determine the characteristics of the subjects surveyed, we examined some of the main indicators that enable demographic analysis, namely, gender, age and place of residence. We also looked at some socio-economic factors - education, employment, household size.

In the two groups surveyed by gender distribution, women predominate - single ones (n = 62), users - (n = 194). Men were respectively 38% (n = 38), 35.6% (n = 106) (Fig. 3).

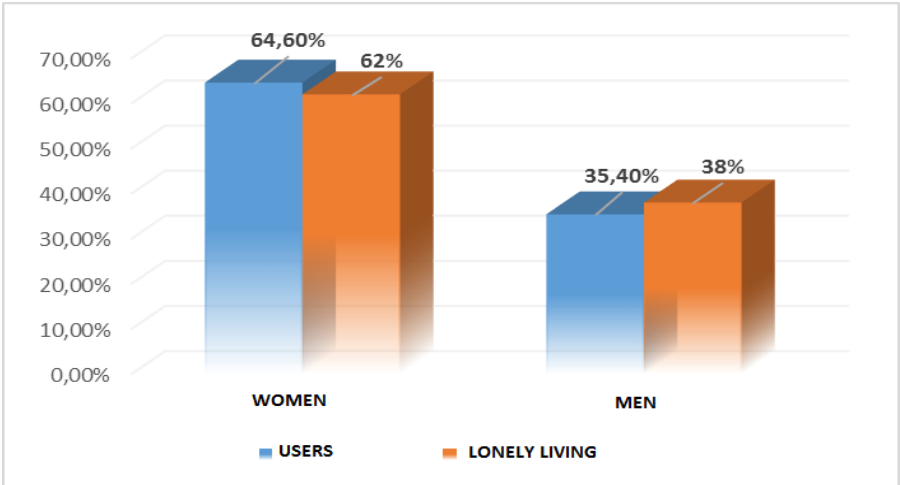

Figure 3. Distribution of respondents by gender

The age group characteristic shows the highest relative share of people between 55-65 years - 40,4%. The next age group is 65-80 years old - 31.9%, over 80 years old are 27.7%.

Among the two groups, the majority of respondents were people with primary education, followed by people with secondary education (Fig. 4). The level of education is important to us because of the direct link between knowledge and awareness of consumers regarding their illness, information needs, understanding of information provided by healthcare professionals and obtaining informed consent regarding homecare, the role and contribution of the nurse in optimizing them.

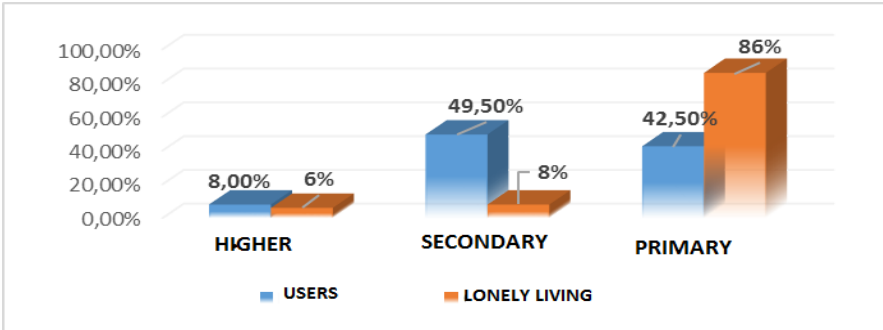

Figure 4. Degree of education of the respondents

The survey includes elderly people who take care of themselves from different largest settlements - a village, a municipal town, a regional town. The distribution data is presented in Figure 5 and Figure 6.

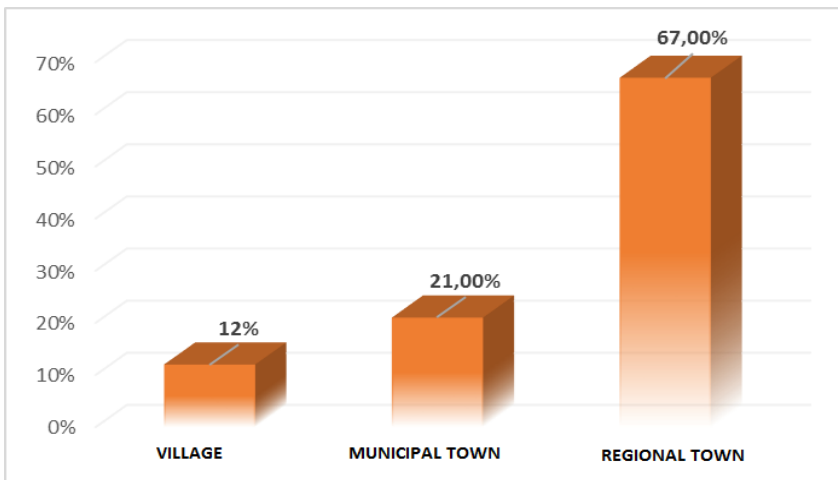

Figure 5. Distribution of lonely living elderly people by residence

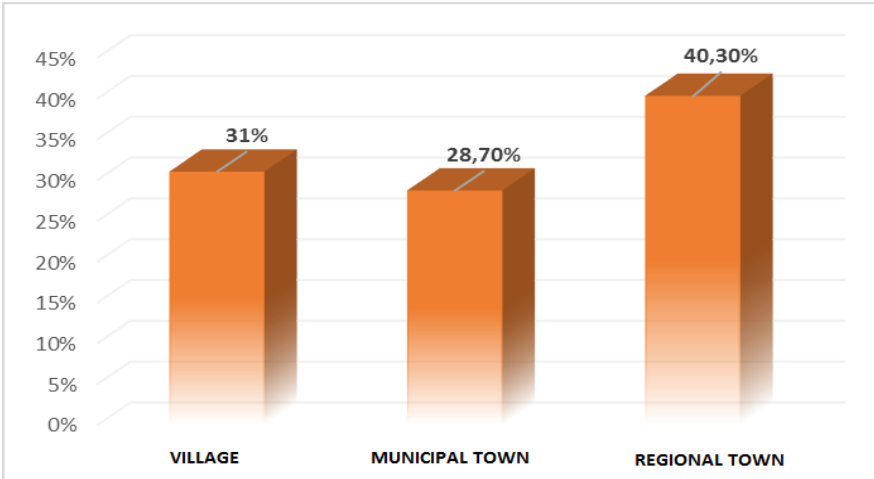

Figure 6. Distribution of users by place of residence

An important factor is the material and economic condition of this population. Surveys show that the main income of the elderly is pensions, and a small part of them rely on social benefits 32% and 24% receive additional help from a child and relatives.

Material status also affects the quality of life. More than half of respondents (57%) spend their money on purchasing: medications for permanent treatment, food and essential goods.

A large proportion of lonely living elderly people report having several diseases that impede their daily activities (80%), (Fig. 7). Diseases of the musculoskeletal system (67%) prevail, followed by arterial hypertension (54%) and diabetes mellitus (17%). A small proportion of respondents said that they did not have any disease (n = 3). We found that there was a significant difference between the incidence rate of users and lonely living elderly people ($\chi 2 = 438{,}665$; $p < 0.001$).

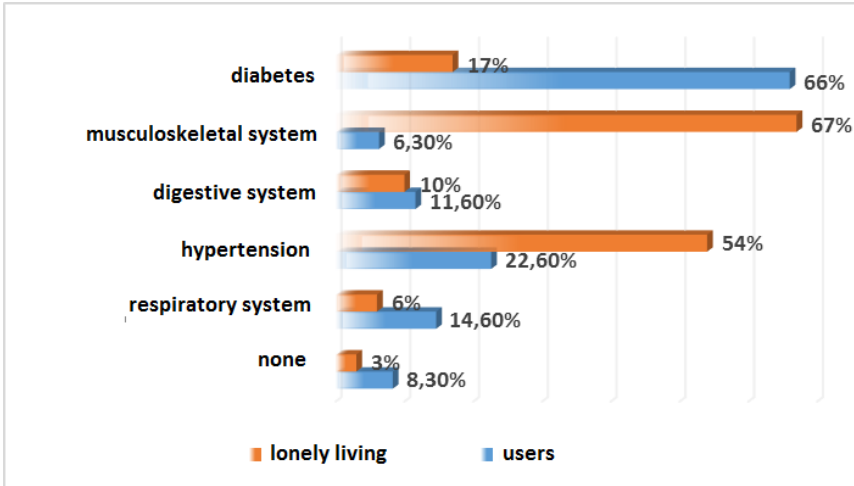

Figure 7. Illness among lonely living elderly people

Diabetes mellitus (66%), followed by arterial hypertension (22.6%), is predominant in users with MSA provided.

The presence of the diseases calls for a different number of medications (Fig.8).

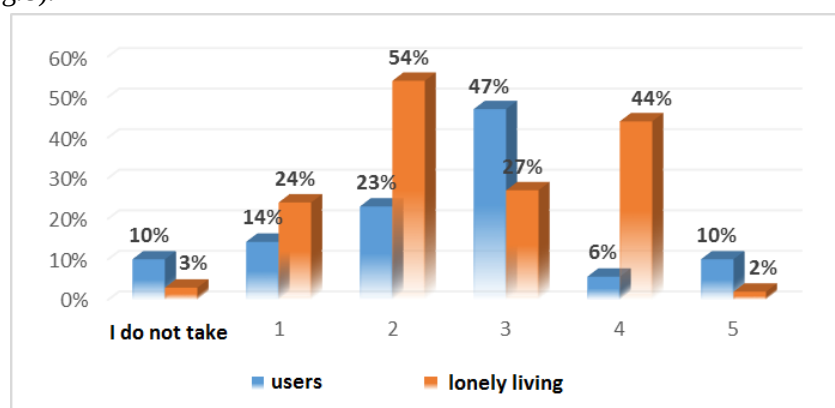

Figure 8. Daily medication intake

The chronic nature of the illnesses leads to restrictions in the daily activities of the respondents - moving in and out of the home, dressing and undressing, looking after their appearance and maintaining personal hygiene, shopping and preparing food, eating and drinking, cleaning the home. (Table 1)

Table 1. Daily activities performed by users at home

Activity	Users n = 300				Lonely Living n = 100			
	alone		with somebody else's help		alone		with somebody else's help	
	Number	%	Number	%	Number	%	Number	%
Moving at home	166	55,3	134	44,6	100	100	0	0
Movement outside of the home	159	53	141	47	57	57	43	43
Dressing and undressing	194	64,6	106	35,3	63	63	37	37
Intake of food and liquids	253	84,3	47	15,6	86	86	14	14
Keeping of personal hygiene	247	82,3	53	17,6	75	75	25	25
Care for the appearance.	248	82,6	52	17,3	91	91	9	9
Preparing food	239	79,6	61	20,3	87	87	13	13
Shopping	242	80,6	58	19,3	43	43	57	57
Cleaning the home	236	78,6	64	21,3	34	34	66	66

In specifying the needs, it has been found that a significant proportion of single elderly people have self-care problems. One quarter of them need help with personal hygiene, 37% need help with

dressing and undressing, one in four (43%) - when traveling outside the home, more than half of respondents do shopping (57%) and clean their home with someone else's help (66%).

With all the difficulties of day-to-day activity, elderly living alone are forced to cope. Coping in turn leads to a low standard of living.

In the study of daily activities, we found that there was a significant difference in different cities (χ_2= 45.39; p <0.001). The most active in terms of daily activities are the elderly people from Veliko Tarnovo (72.90%), and the least active are those from the villages (42.0%).

In the course of our study we found that the respondents had hearing problems, vision problems, need of dentures, need of medical and technical means of movement that affect their quality of life.

Lonely living elderly people have great difficulty in communicating with different institutions, especially residents of small settlements in the municipal and regional center. The highest relative share is the elderly from small settlements (84%), followed by those in Veliko Tarnovo (80%), (χ2 = 32.35; p <0.001).

Particular attention should be paid to the self-esteem of the elderly regarding their physical and mental health. More than half of the respondents rated it “satisfactory”, which was accompanied by a low frequency of seeking medical help, regardless of the respondents' illnesses (59%). Rating "relatively good" - 19%, "good" - 11%, and 7% cannot judge. A small proportion rate their physical health as excellent (4%).

More than half of the respondents rated their emotional state as satisfactory, due to the low assessment of physical health, the low income, the narrowing of the circle of people for

communication, loss of spouse, loss of a child, lack of adequate care in the home environment depending on needs (65%). Negative emotions create feelings of loneliness, oblivion and unnecessaryness (14%) by lonely living elderly people (Fig. 9).

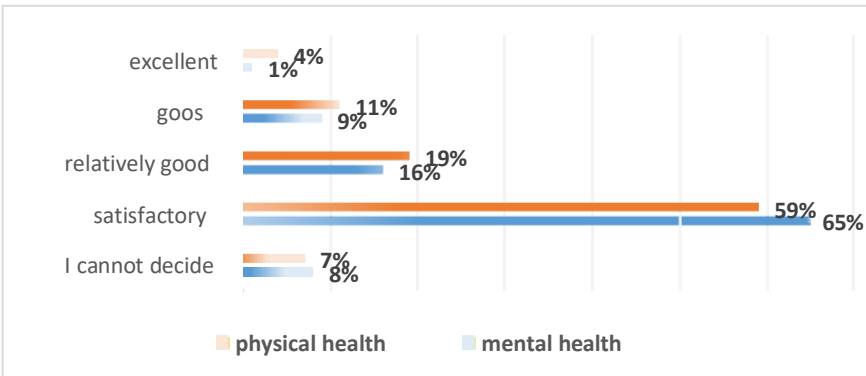

Figure 9. Self-esteem of lonely living elderly people for their emotional and physical state

MSA users' self-esteem about their physical and emotional state is higher. Health is rated as "satisfactory" by 41% (n = 123), "relatively good" - 29% (n = 87), “good” - 14.3% (n = 43) and 13.6% (n = 41) cannot judge. A little more than half of the respondents from Veliko Tarnovo expressed their desire for information on this topic (χ^2= 10,25; p = 0,006). Communication with friends, neighbors and colleagues is an important social factor for the social, emotional stability and decent quality of life of the respondents.

The study analyzes the awareness of people aged 60 and over about people and organizations providing medical and social assistance. The majority of respondents turn to the GP and the nurse (Fig. 10).

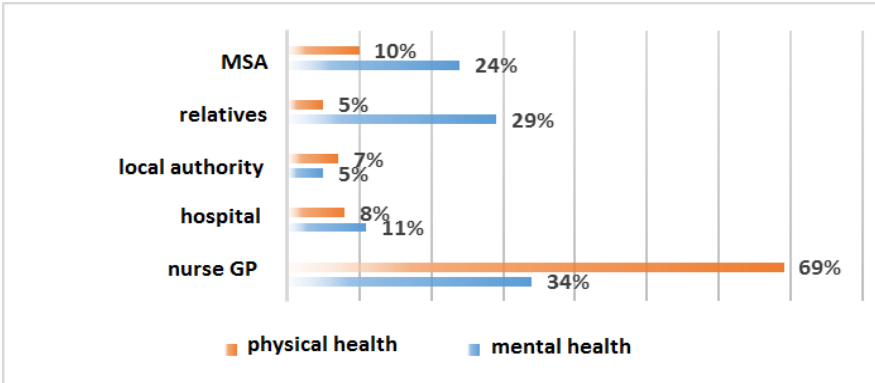

Figure 10. Medical Assistance Organizations

The possibility of receiving different medical services is different in the settlements. Urban residents have better opportunities to receive specialized medical care, dental care, doctor's home visits, laboratory tests, medication and technical aids, call a nurse to perform medical procedures, help from a caregiver while it is difficult for people in small settlements (42.0%) ($\chi 2 = 20.13$; $p < 0.001$). The results are presented in Table 2. Almost all the lonely living elderly people turn to their relatives (30%) and PFM (25%) to receive various medical services. The bodies of the local authority are mainly reached by people living in small and remote settlements - villages and neighborhoods located in hard to reach territories. Another alternative to medical care is found in paid people.

Table 2. General characteristics of the people surveyed by place of residence and care received

Provided medical-social care	Adults and lonely living people		Total
	Town	Village	
At home	124	95	219
In the day hospital	46	28	74
In hospital	139	118	257
In a nursing home	168	9	177
Did not use service	23	35	58

The need for home medical services is reflected in the answers of the surveyed people: blood pressure measurement (67%), rehabilitation (16%), dressing (6%), injection (4%), level measurement of blood sugar (3%), alternative treatments (3%), training of relatives close to caring for them (1%).

Regarding the level of satisfaction with the medical care provided, consumers point out the GP first (83.3%), followed by a nurse (68.5%) specialist doctor (55.6%). Of the social services, that are most desirable are the payment of household bills (58%), escort (to see a doctor - 24%), receiving a pension (11%), assistance in contacting various institutions. Among the people providing social assistance the nurse is pointed. Social interactions of older people with friends, colleagues and neighbors are an important factor in their good emotional state and better quality of life. (Fig. 11). Survey results show that a small proportion of lonely living elderly people rely on their help (12%). The help and support from friends, neighbors is significant ($\chi 2 = 27.77$; $p < 0.001$). For the effectiveness of the provided

MSA the preferences of the needy are important.

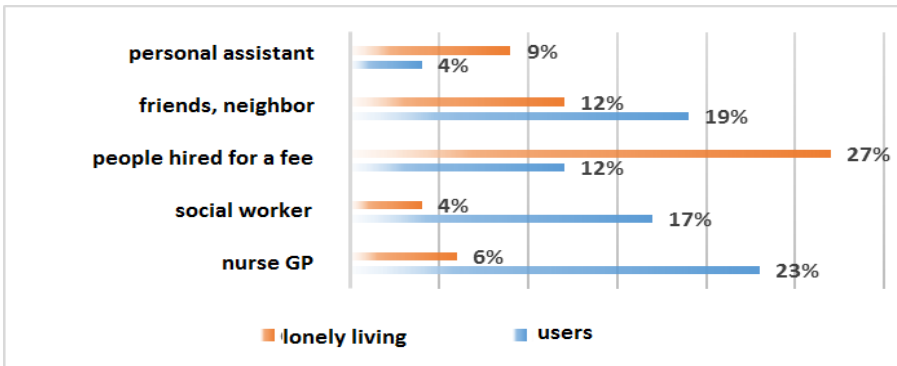

Figure 11. People providing help and support

The analysis of the results of the conducted anonymous survey among people aged 60 and over identified the following trends (Fig. 12).

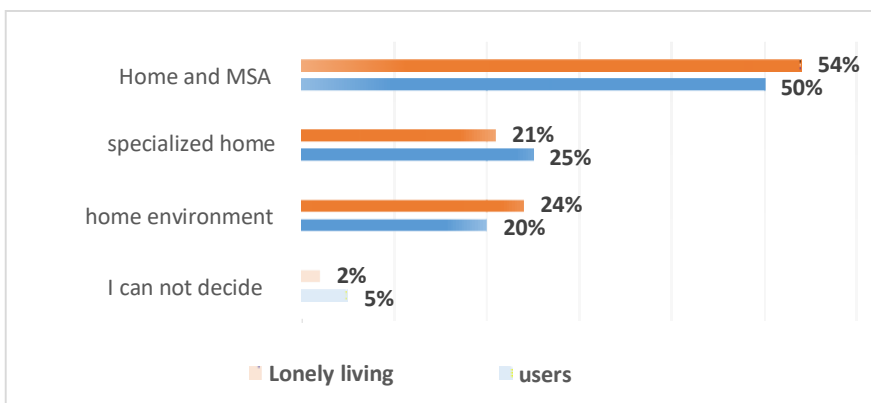

Figure 12. Opinion of people at the age of 60 and over about the care model

More than half of the respondents prefer to stay in the home environment and receive the necessary MSA according to their needs. The reasons for the choice are: attachment to the birthplace and father's home; unwillingness to disrupt the usual way of life; danger of breaking contact with family and friends; friends and neighbors; distrust to the medical and social institution.

One in four wants to get MSA in an institution, and one in four wants to stay in a home environment and use an institutional MSA periodically. A very small percentage of the respondents cannot make their choice. The significant difference in the relative share of consumers and lonely living elderly people ($\chi 2 = 34.00$; $p < 0.001$) made an impression.

3.3. The opinion of medical professionals concerning the quality of healthcare provided to elderly people at home.

The provision of medical-social assistance to the elderly is carried out by different specialists with different levels of qualification. The study included 20 healthcare professionals from different fields of care provided in Table 3.

Table 3. Distribution of medical specialists

Medical Specialists	Doctor number	Medical nurse - number	Social worker
Out-of-hospital Assistance	25	78	-
Hospital help	23	33	-

Medico-social establishments	-	41	40
TOTAL	**48**	**152**	**40**

Among the surveyed medical professionals women predominate (84%). The majority of respondents are healthcare professionals practicing in out-of-hospital medical care (51%), hospital care (22%), medical and social care facility (27%).

The majority of the surveyed specialists carry out their activities in the regional city (Fig. 13).

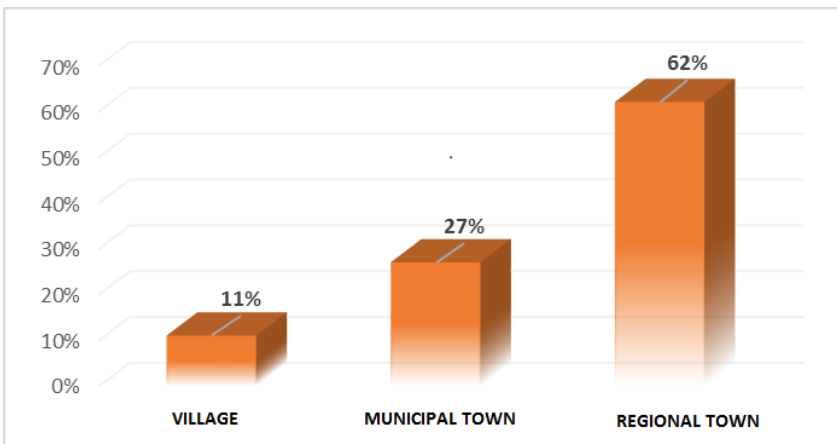

Figure 13. Distribution of specialists for performing activities in a settlement

Home care should be provided by a well-trained and competent team. High professional competence is a prerequisite for achieving the quality of medical services (Fig. 14).

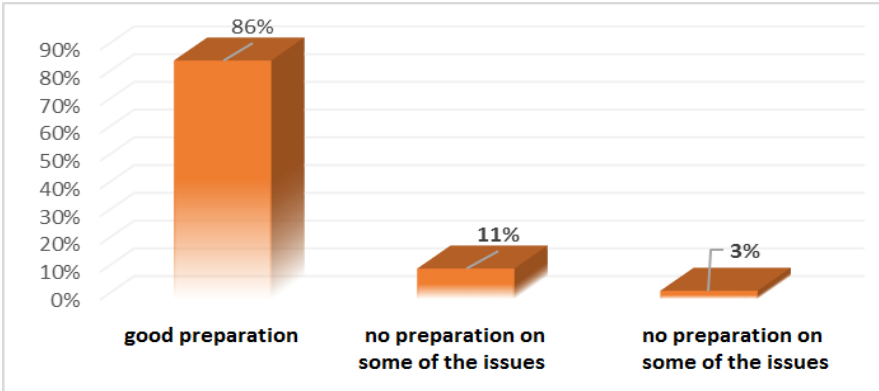

Figure 14. Level of competence in solving medico-social problems by the elderly (according to nurses)

A large number of healthcare professionals believe that they are well prepared for home care by the elderly people (86%). Few of them are not competent enough on all issues (11%). In our opinion, these nurses need to acquire specialized knowledge and skills in the care of diabetic patients, and they need to be involved in various forms of additional training to enhance their competence.

The data from the study show that social workers have insufficient vocational training in providing social assistance at home.

In analyzing the results of the study, we found differences in the opinions of health professionals and social workers regarding the accessibility of information on the full range of medico-social services offered (Fig. 15).

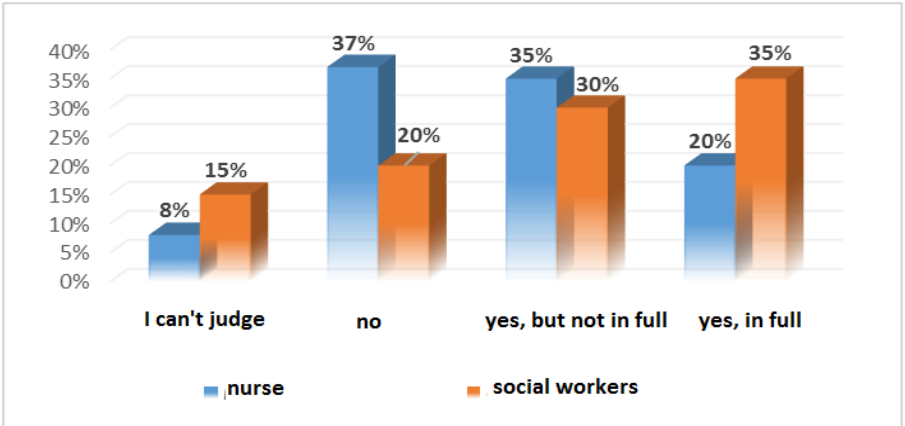

Figure 15. Availability of information on medical-social services for the population

The majority of the surveyed medical specialists consider that the most important role in solving the problems of the elderly and disabled people related to the provision of medical and social services are the medical institutions - home for medical and social services and hospice, family and relatives.

A significant number of healthcare professionals believe that a change is needed in the legislative system regarding the effectiveness of medico-social assistance for the elderly (31.5%), and slightly more than half cannot evaluate (62%). The trend is also similar to the need for change in the legislation, with the highest relative share in this field of medical professionals against social workers ($\chi 2 = 6.68$; $p= 0.035$), (Fig. 16).

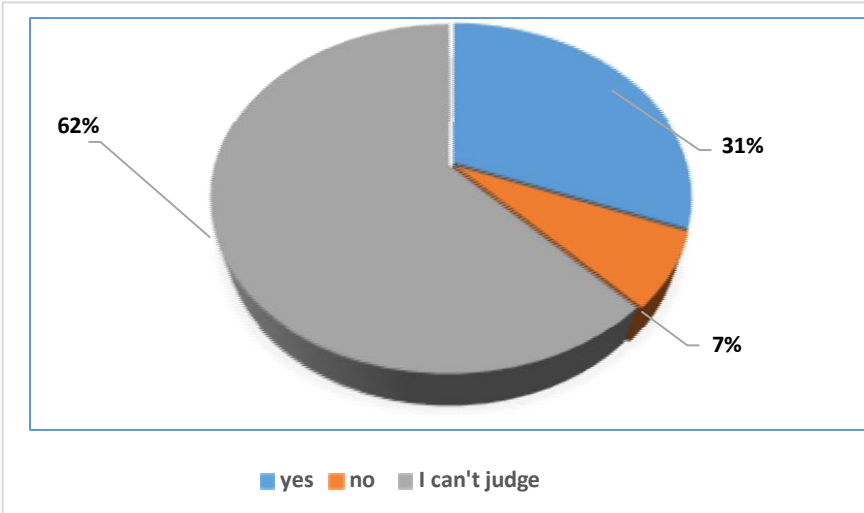

Figure 16. Opinion of medical professionals on the need for change in the existing legislative system

More than half of social workers are of the opinion that legislative change is needed (Fig. 17).

Experts point to the reasons for ineffective inter-agency cooperation:

- the imperfection of the existing legislative and regulatory framework related to home healthcare and social services;
- inaccessibility of information in full volume to the population;
- the specifics of the population served;
- the lack of a register of the needy;
- shortage of personnel.

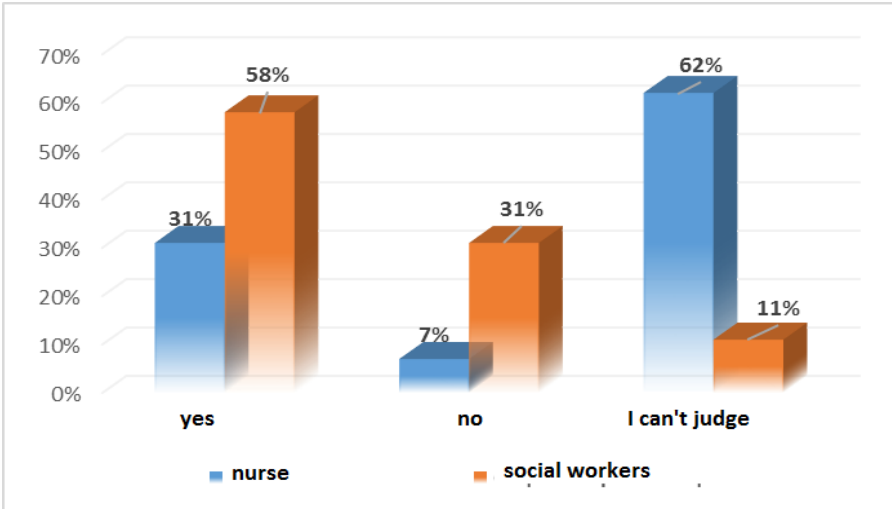

Figure 17. Opinion of social workers and nurses on the need for change in the existing legislative system

The effectiveness of MSA also depends on inter-agency cooperation. A significant proportion of healthcare professionals consider cross-sectoral collaboration ineffective (74.5%). (Fig. 18)

For improving the effectiveness of the provided MSA, healthcare professionals offer activities such as: improving the legislative and regulatory framework (31.5%), moral support for those providing MSA (19%), creating conditions for advanced training (15%) , improvement of the material and technical base and decent remuneration of the work done (77%), increase of the volume of medical care at home (79%). In their responses, the respondents indicate an individual approach to each needy, accessible information, enhancing the prestige of the professions related to the care of the elderly, jointly

activities with volunteers, church representatives and charities.

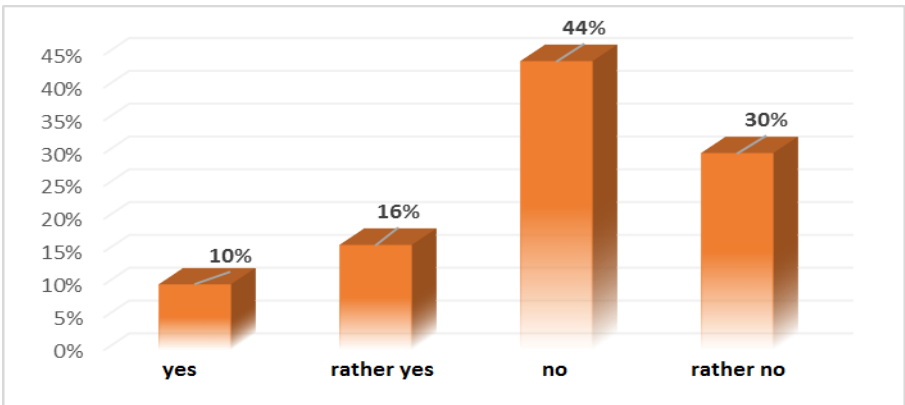

Figure 18. Evaluation of efficiency of interagency cooperation in providing SMA

Care activities for the elderly are difficult and related to the emotional and psychological workload of health care professionals. In our study, almost half of the social workers (45%) and more than a quarter of the health professionals (30%) reported having emotional psychological problems that could affect their attitude toward work and the elderly. The significant difference is the relative share of social workers who want to be trained in providing psychological support ($\chi 2 = 34.00$; $p < 0.001$). Specialists cite the reasons for this are the specifics of the service contingent, difficulties in contacts, age-related changes in the mentality of the elderly, lack of social contacts and contact with loved ones, lack of staff, low pay of work.

Regardless of all these reasons, professionals provide emotional support to the lonely living elderly people in need (Fig. 19).

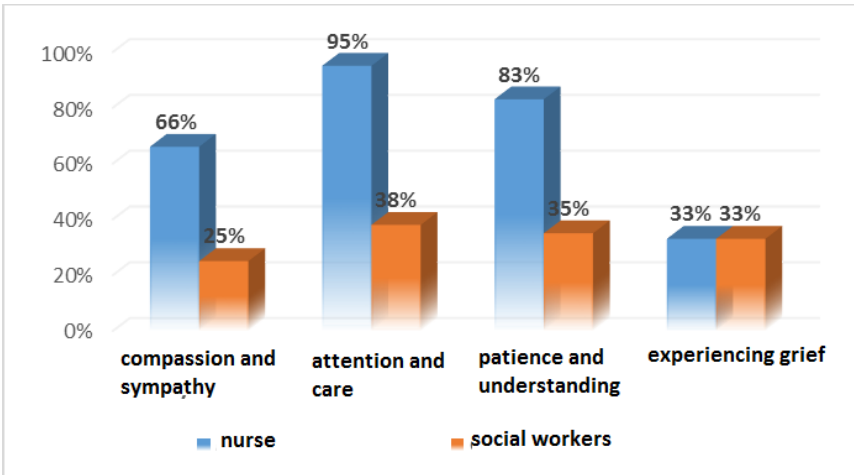

Figure 19. Emotional support provided

The data shows the need to train social workers in the psychological sciences. One of the objectives of the study is to identify the needs of lonely living elderly people in the Veliko Tarnovo district. According to the experts, the needs of lonely living elderly people have a complex nature - medical assistance, social assistance, assistance in daily activities, domestic help. Depending on their competencies, the specialists are providing respective MSA. The most desirable medical service according to the analysis of the results of the specialists' evaluation is blood pressure measurement (22.5%), first aid (20%), injection (19.5%), prescribing of medicines for permanent treatment (18.5%), blood sugar measurement (12.5%), prevention and

treatment of decubital wounds (12.5%), training of relatives and loved ones (8.5%). Social workers, according to their competencies, provide other services to those in need: medication provision (52.5%), psychotherapy (15%), blood pressure measurement (12.5%).

The ranking of the most desirable social services is as follows: escort / doctor visit / (30%) contact with organizations and institutions (28%), communication assistance (20.5%). According to social workers, the most desirable social services are contact with organizations and institutions (72%), assistance in communication (42.5%).

According to health professionals and social workers, more than half of lonely living elderly people need help cleaning their home (66%), performing daily activities (57%), shopping (43%), dressing and undressing (37 %), maintaining personal hygiene (5%).

3.4. Analysis of the physical and psycho-social needs of the elderly people

In the period March - August 2019, an age analysis of the biological and psychosocial needs of the elderly in the absence of home care was conducted. The patients observed were of different age groups, with different diagnoses and stages of disease. Patients in the 65-74 age group after stroke were 23 (27%). Patients with fractures with different localization were 14 (29.7%). In the terminal stage of oncological diseases, 12 patients with a median age of 65-74 years were observed. Patients with chronic respiratory failure second and third degree, as a complication of chronic obstructive pulmonary disease, were 9 (37.5%), (Fig. 20).

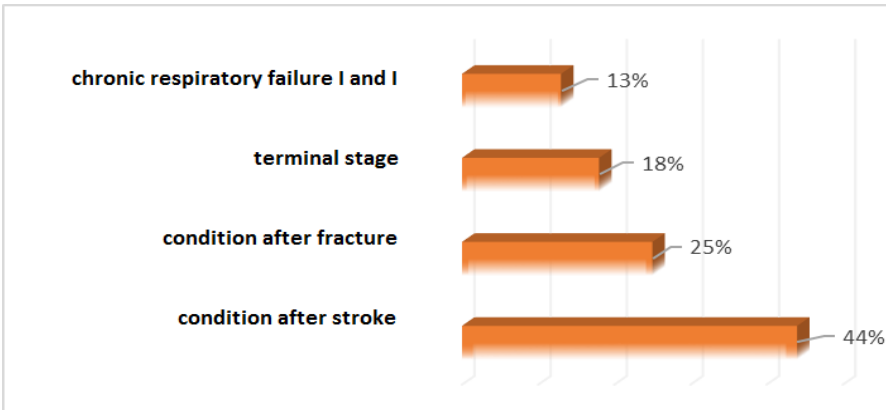

Figure 20. Percentage of patients per nosology unit

In order to identify the biological and psycho-social needs of the respondents, we developed a special questionnaire that included:

- biological and medical problems of the patient: nutrition, pain, control of pelvic functions, limitation of autonomy and independence, attention, thirst, respiratory disorders, skin problems, asthenic syndrome, thermoregulatory disorders in the form of hypothermia;
- psychological problems: understanding of the disease, level of support, guilt and more;
- social problems: a sense of social exclusion, financial difficulties.

To identify the contribution of the individual biological needs of the elderly to ensuring quality of life

at home we applied correlation analysis. This part of the study involved 89 adults, with an average age of 67.1 ± 2.4 years. To determine health and well-being, we used a Questionnaire that reflects the overall self-assessment of the patient's own health in the dynamics of the last year, as well as several areas of health care: physical functioning, limitations on the role of physical health issues, pain, emotional well-being, role limitations due to emotional problems, social functioning, preservation of vitality.

When examining age differences in biological care needs, it was found that the greatest difficulty and contribution to the decline in quality of life for people in the age group 60-74 years is: inadequate nutrition - 24.5 ± 2.3 %, restriction of self-confidence in performing daily activities due to impaired motor activity, pain syndrome, hypothermia syndrome - 31.4 ± 3.1%, $p < 0.05$ and other biological reasons 98.4 ± 8.7%.

The most common in biological view by lonely living elderly people are:

- pain management - 47%;
- decrease in the degree of dehydration - 14,7%;
- reduction of respiratory disorders - 9,8%;
- control of pelvic functions - urination and defecation - 15.7%;
- coping with thermoregulatory disorders 33.6% (Fig. 21).

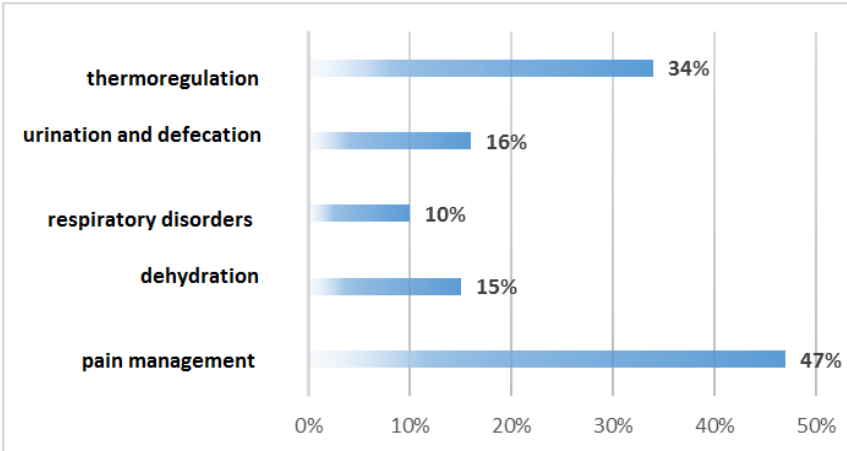

Figure 21. Physiological needs of the elderly

When examining age differences in psychological care needs, we found a significant difference between the opinions of older people ($\chi 2 = 56.01$; $p < 0.001$).

Older, single living people need:

- information about his disease - 24,2%;
- fight against depressive state - feeling of fear anxiety, fear of death - 35.1%;
- struggle with guilt - 21.3%
- more social contacts - 87.5%;
- more care - 73.3%;
- accessibility to medicines - 13.7% (Fig. 22).

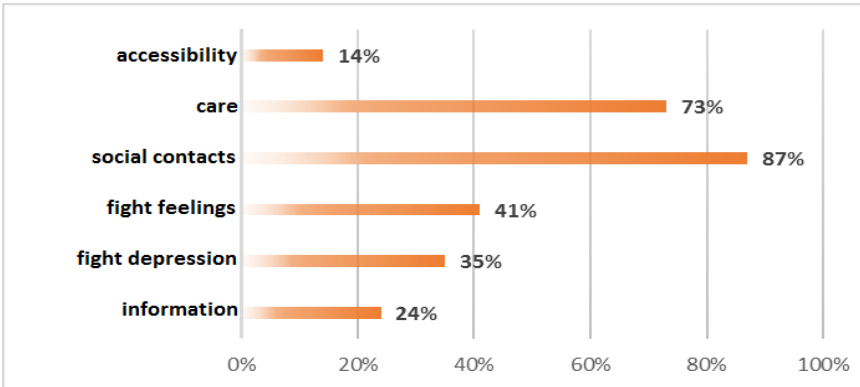

Figure 22. Physiological and psycho-social needs of lonely living elderly people

In studying social needs, we have found that with increasing age, the need to reduce social exclusion decreases.

In this phase of the study, we identified the most important biological and psychosocial determinants of the quality of life of older for cares at home.

The data obtained form the basis for the development of a bio-psycho-social model for activating the care for the elderly and old people at home. As a result of the analysis, an assessment was made of the activities that lead to the highest possible quality of life, by satisfying the established biological and psycho-social determinants.

3.5. Introducing and evaluating the effectiveness of a Model for the healthcare and welfare of lonely living elderly people

Two groups of lonely living elderly people will be formed to perform the Care Model experiment: a non-experimental group (n = 32, average age 67.4 ± 1.8 years) and an experimental group (n = 31, average age 67.9 ± 1.6 years).

Adults from the non-experimental group will receive standard care activities from medical and social services, and those included in the experimental group will be cared for under the developed Care Model.

The criteria for inclusion in the experimental group of lonely living elderly people are the presence of a disease requiring home care, patients in the age group between 60 and 74 years, the exclusion criterion is the presence of mental illness which requires care and impedes verbal contact with the patient.

The monitoring period is planned to be 6 months, at the end of which the effectiveness of the developed model will be evaluated. The performance evaluation of the Model will be made on the following indicators:

- quality of care: appearance, violations of skin integrity, rashes, cramps, violation of hygiene rules;
- disorders of the patient's general condition - phlebitis, infiltrates, edema, etc.
- improving patient autonomy - daily care, nutrition, physiological needs, hygiene and more.

The health care index will be determined according to the Barht scale on the basic needs of Virginia Henderson and include the following questions:

1. **Nutrition:** I do not need help, I can use all the necessary utensils (10); For example, I need help preparing food (5); Completely dependent on help, Need help by nutriton (0).
2. **Personal hygiene:** Face wash, oral cavity, toothbrushing, shaving (10); No need for assistance (5); Needs help (0).
3. **Apparel and Appearance:** No need for external assistance (10); Need help, e.g. when dressing, putting on shoes, etc. (5); Totally needs help (0).
4. **Hygiene:** Performs hygienic care without assistance (5); Needs help (0).
5. **Control of pelvic functions (urination, defecation):** No need for assistance (20); Need help partially (with the help of aids) (10); He is in constant need of help in the gross violation of the pelvic function (0).
6. **Movement and correct posture:** No need for assistance (15); Needs control or minimal support (10); Needs considerable support, wheelchair accessible (5); Cannot move (0).
7. **Disease Awareness:** No need for information (15); Needs additional information and support (10); Information and support are needed to monitor health (0).
8. **Monitoring vital signs (RR, heart rate, breathing, temperature):** There is no need for support and assistance (15); Needs additional support (10); Needs support in control of vital indicators (0).
9. **Performing manipulations and activities:** No manipulations have been assigned (10); Needs an activity assigned by a doctor (0);

After the patient's response (home environment), the total score is determined by the questions asked, if he ranges from 0 to 20, this corresponds to the patient's total dependency , from 21 to 60 - marked dependence, from 61 to 90 - moderate dependence, 91 to 100 points - complete independence in daily activities.

The analysis of the specific dimensions of health - physical, mental and social of lonely living elderly people revealed low self-esteem and low quality of life (Fig. 23).

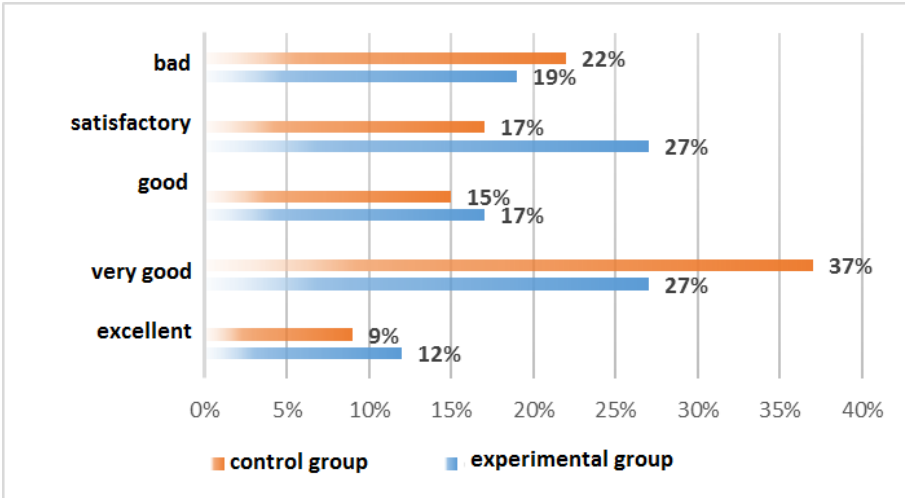

Figure 23. Health Rating

Health was rated as more satisfactory by women than men in the 65-70 age group (F = 6,080). Dissatisfaction with health and well-being expressing a high proportion of lonely living elderly people between 70 and 74 years of age (F = 6,080, p <0.05). The Student's t test showed a statistically significant difference in favor of the experimental group [t (61) = 12.486; p-value <0.001]. The result was confirmed by the Mann-Whitney test [Z = 6.482; p-value <0.001].

IV. MODELS FOR HEALTHCARE AND WELFARE OF LONELY LIVING ELDERLY PEOPLE AT HOME

4.1. Assessing the health and quality of life of lonely living elderly people

In the study of the needs and the introduction of a new model of care for lonely living elderly people, the areas in which they need knowledge to perform daily activities, skin care, care for the general condition and disease prevention were examined. Practical approaches have been developed to educate lonely living elderly people (Fig. 24)

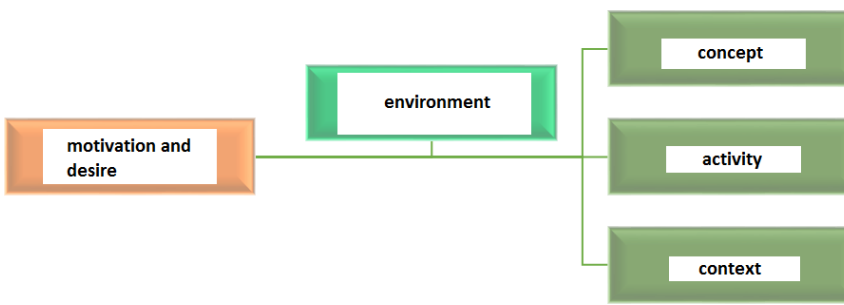

Figure 24. Practical training approaches

In order to provide acceptable care for the elderly, nursing activities need to be directed towards the formation of habits for interpreting deviations in vitality, motor activity and eating habits. They need to be trained in adapting to a balanced diet, exercise, proper medication and social activity.

A large proportion of lonely living elderly patients are concerned about the restriction their physical health imposes on physical activity (Fig. 25).

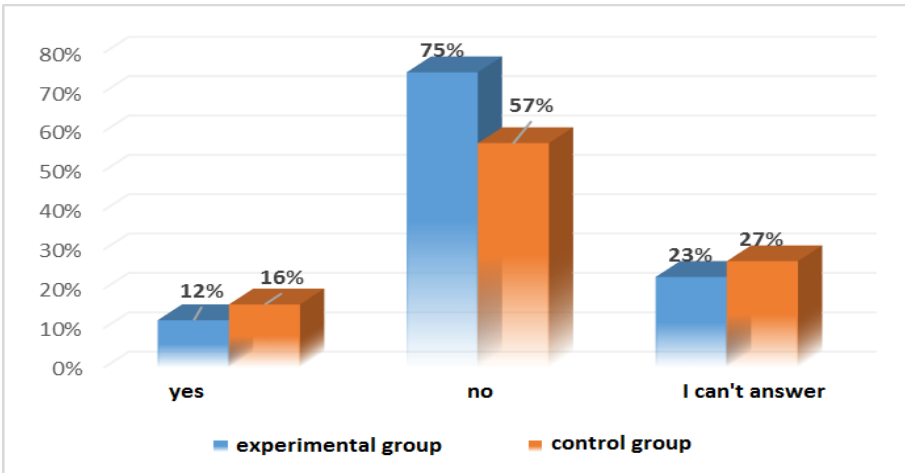

Figure 25. The effect of health on physical activity

The Student's t test did not show a statistically significant difference [t (61) = 0.763; p-value <0.448]. The result was confirmed by the Mann-Whitney test [Z = 0.674; p-value <0.501].

The analysis of the results of the opinion survey of medical professionals and lonely elderly people

showed that there was a significant difference in the areas in which training related to their assessment was needed ($p < 0.05$).

The purpose of the Health and welfare model is to enhance the quality of life of lonely living elderly people by satisfying disturbed biological and psychosocial needs. At the same time, they should be aware of the importance and benefit of adhering to a particular motor regime as far as possible, adherence to a diet, regular intake of prescribed medication.

The interviewed lonely living elderly people were given the opportunity to assess their health (Fig. 26).

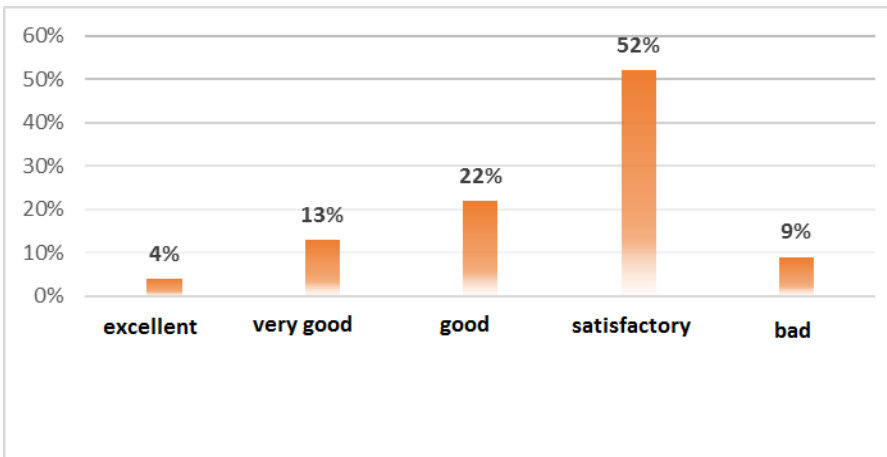

Figure 26. Elderly self-esteem for their physical health

For us, this self-assessment is important because it provides information about the patient's problems - functionality, availability of impaired needs, and more. The nurse analyzes this information, identifies the patient's problem, plans care for the patient and

nursing interventions, assesses the results achieved. In examining the link between quality of life and health assessment, we found a significant difference in opinion expressed by adults who have difficulty defining quality of life and those who rate their health as "relatively good" (χ_2= 15.74, p <0.001).

Most lonely living elderly people have been diagnosed with health problems for more than 5 years (63%). Most of them do not realize the significance of their condition and the need for medical help (Fig. 27).

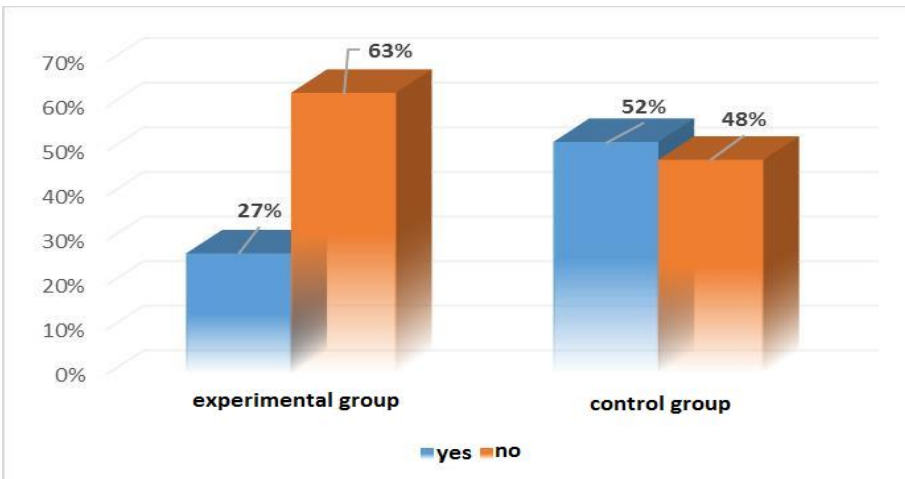

Figure 27. Impact of health status

The Student's t test did not show a statistically significant difference [t (61) = 0.763; p-value <0.448]. The result was confirmed by the Mann-Whitney test [Z = 0.674; p-value <0.501].

Assistance in daily hygiene care for adults and lonely living elderly

people is an important part of home health care. In the study of the need for assistance in the implementation of hygiene care, we found that the majority of individuals care for their appearance and general hygiene (74.5%). Most of them (23.4% of 25.5%) carry out activities on a daily basis. This fact is too unfavorable for those affected because of the proven damaging effect of appearance on their overall well-being and welfare (Fig. 28).

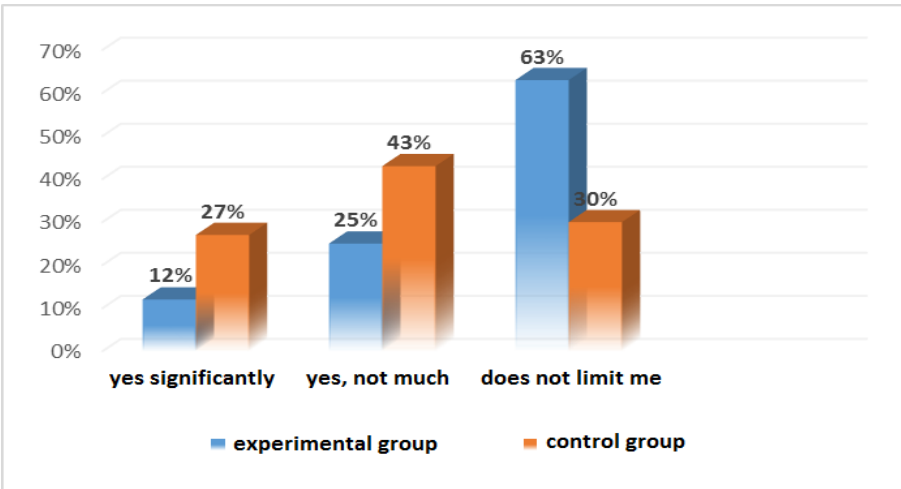

Figure 28. Appearance and general hygiene care

Meeting the need to maintain good personal hygiene with the assistance of the nurse leads to improved self-esteem and quality of life. The Student's t test showed a statistically significant difference in favor of the experimental group [t (61) = 5.475; p-value <0.001].

In both groups, the elderly reported having several chronic diseases. This leads to disruption of normal activities and a decrease in quality of life. More than half of the subjects surveyed had difficulty performing their daily exercise activities at the beginning and end of the 6-month observation period (61%). The result was confirmed by the Mann-Whitney test [Z = 4.118; p-value < 0.001], (Fig. 29)

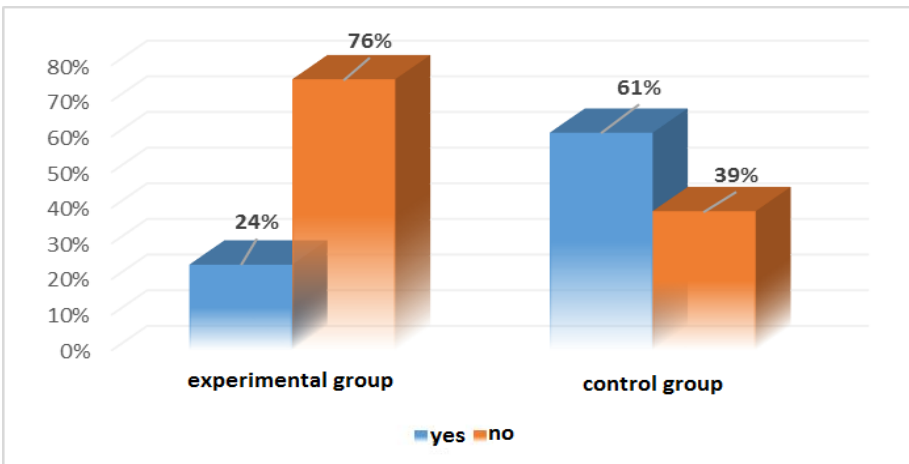

Figure 29. Daily motor activities

The elderly in the control group have the most difficulty. Elderly people with diseases (78.60%) have the desire to be educated in the field of quality of life, and this percentage decreases with increasing disease limitation (χ^2= 27.67; p <0.001). This can be explained by the fact that during this period the elderly were able to cope with the problem.

Model of observation and specifically the role of the nurse

has an impact on patient resilience, motor mode, creating a safe environment for movement, self-monitoring of chronically ill patients and patients with poor health control (Fig. 30).

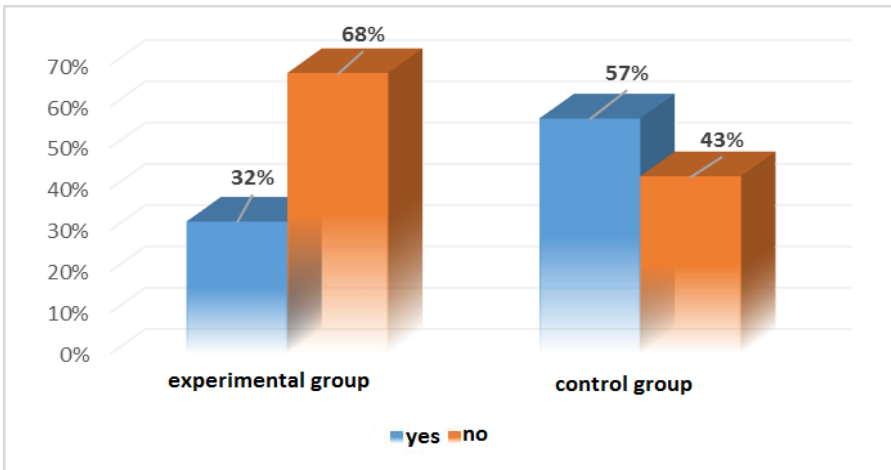

Figure 30. Observing motor mode

The Student's t test showed a statistically significant difference in favor of the experimental group [t (61) = 2.783; p-value = 0.007]. The result was confirmed by the Mann-Whitney test [Z = 2.275; p-value =0.023].

Insufficient information about the underlying illness and accompanying disorders leads to emotional disturbances. They are also affected by feelings of anxiety and fear of death, which negatively affect the emotional state. The main task of the healthcare specialist is to make a nursing diagnosis related to the psychological problem, to organize the psychological support, to provide psycho-therapeutic assistance in a timely manner in the development of a depressive state.

The influence of emotional state on the performance of

routine daily activities is presented in Fig. 31.

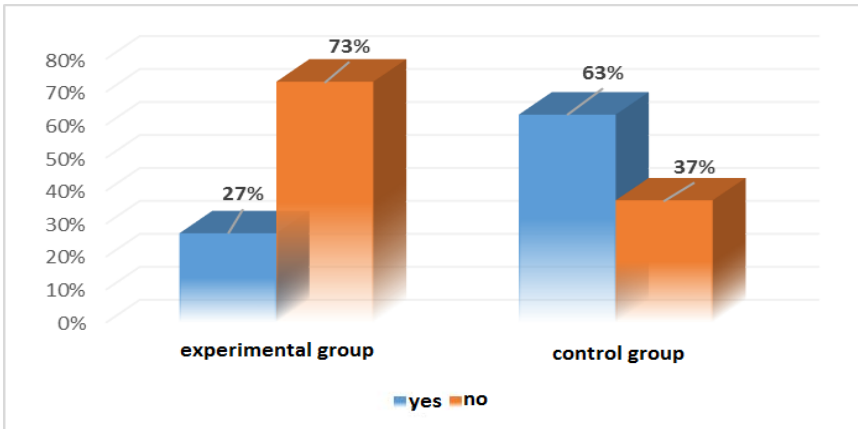

Figure 31. Influence of emotional state on performing daily routine activities

The Student's t test showed a statistically significant difference in favor of the experimental group [t (61) = 5.291; p-value <0.001]. The result was confirmed by the Mann-Whitney test [Z = 3.794; p-value <0.001]. This necessitated the training of patients by the nurse for the proper use of technical aids - cane, crutches, walker.

There is an inextricable link between the human mind, emotions and the body. By keeping their life activity, lonely living elderly people maintain social stability. Reflection of physical and emotional state on relationships with others is presented in Figure 32.

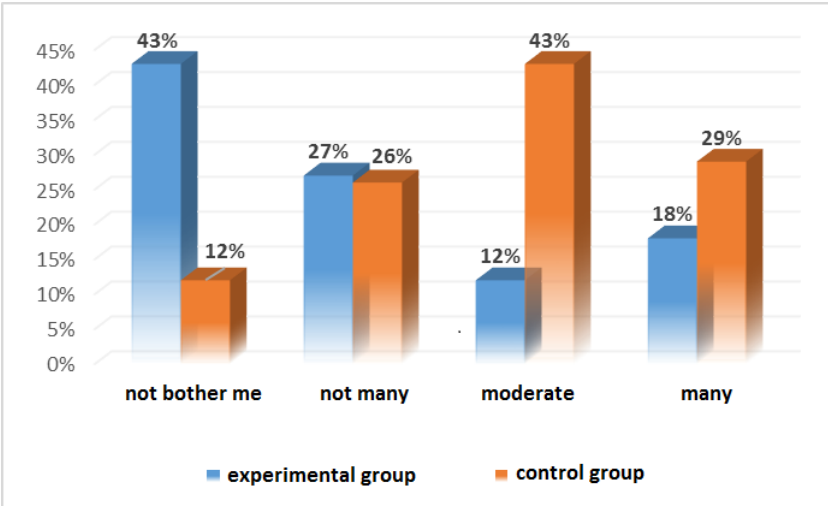

Figure 32. Reflection of physical and emotional state on relationships with others

The Student's t test showed a statistically significant difference in favor of the experimental group [t (61) = 5.957; p-value <0.001]. The result was confirmed by the Mann-Whitney test [Z = 4.654; p-value <0.001].

With advancing age, both health status and social positions change. Aging at the individual level is characterized by weakening of the functions of many organs and systems in the body. The most significant are the reduced vision and hearing and the degenerative changes in the musculoskeletal system. The health needs of the elderly are related to basic aspects of life functioning that interact with one another: functional capacity, pain and pain control, mental and cognitive status, role functioning. Of interest to us was the impact of pain and malaise on the general condition of the elderly (Fig. 33).

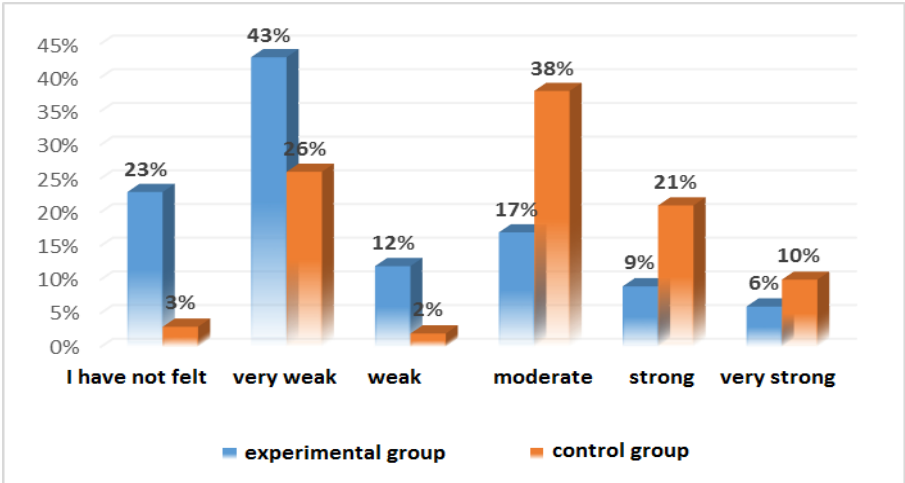

Figure 33. Impact of pain and malaise on the general condition of the elderly

The Student's t test showed a statistically significant difference in favor of the experimental group [t (61) = 5.889; p-value <0.001]. The result was confirmed by the Mann-Whitney test [Z = 4.530; p-value <0.001].

The extent to which pain impedes the motor activity of the elderly was found in the survey (Fig. 34).

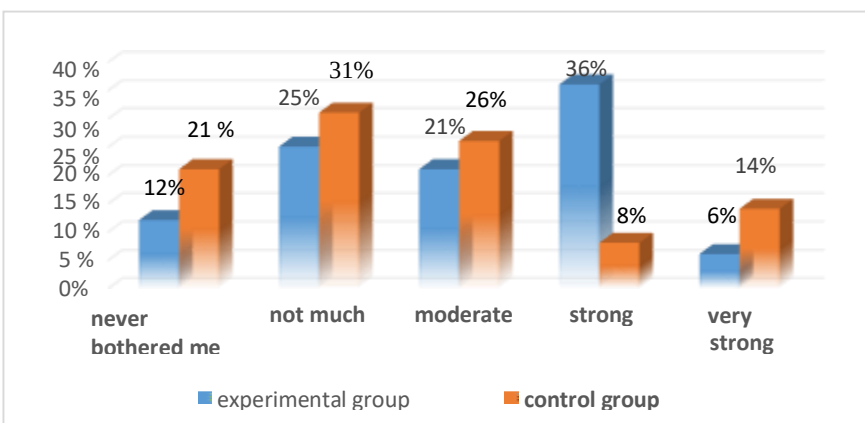

Figure 34. Effect of pain on motor activity

The Student's t test showed a statistically significant difference in favor of the experimental group [t (61) = 5.980; p-value <0.001]. The result was confirmed by the Mann-Whitney test [Z = 4.454; p-value <0.001].

Monitoring of emotional status and its cognitive aspect with advancing age shows impaired perception, weakened active attention and its switchability, delayed thought operations, memory impairment. Anxiety concerns, especially those related to one's own health, increase. The risk of depression in the elderly is increased upon somatic diseases that limit the possibility of normal physical functioning (Fig. 35).

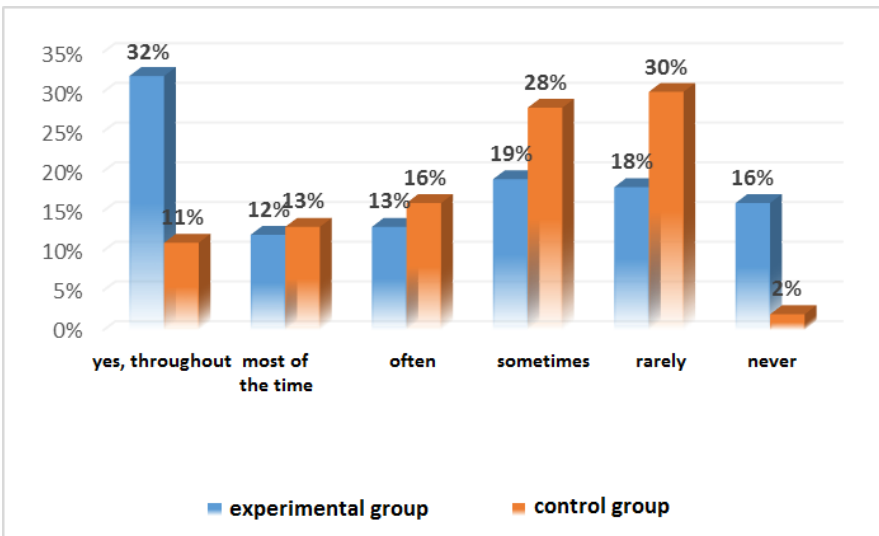

Figure 35. The influence of emotions on the well-being of the elderly

The Student's t test showed a statistically significant difference in favor of the experimental group [t (61) = 21.252; p-value <0.001].

The result was confirmed by the Mann-Whitney test [Z = 6.812; p-value <0.001].

4.2. Model for healthcare and welfare of lonely living elderly people

The conditions of nursing practice in Bulgaria were analyzed, as well as the possibilities for applying innovative approaches in the planning of care for the elderly, so we developed a ***Decision-making model*** when caring for the implementation of which it is necessary to consider the following conditions.

- create database
- problem identification - clearly defined and precisely formulated;
- analysis of possible solutions to the problem and their consequences;
- criteria for evaluating alternative solutions.

Decision-making is the process of choosing the best alternative from available healthcare. The ability to make competent decisions is a critical and fundamental aspect of professional nursing (Fig. 36).

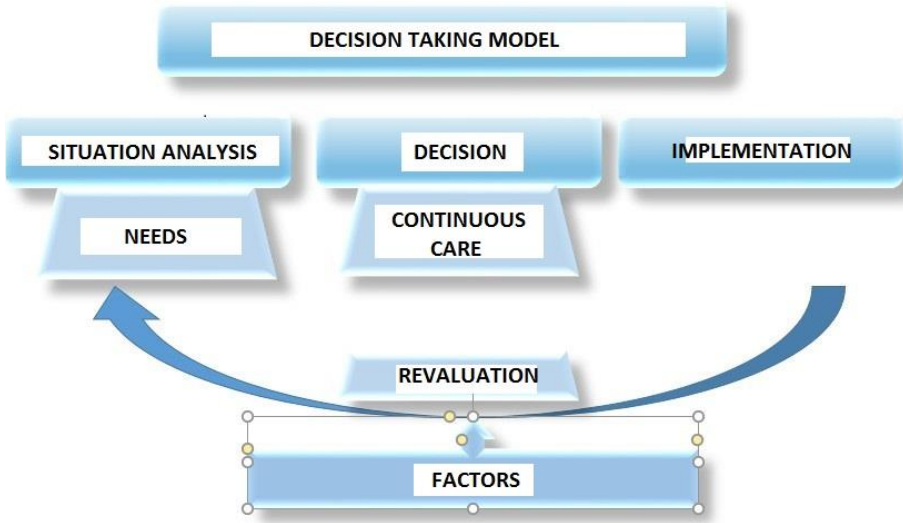

Figure 36. Nursing decision making model

As a result of the study of our and international experience in providing care for lonely living elderly people, as well as the forms of support and assistance offered by a number of authors in our country we consider it is necessary to implement a Model for healthcare and well-being of lonely living elderly people, as well as specific nursing documentation tracking the condition of the elderly at home. (Fig. 37)

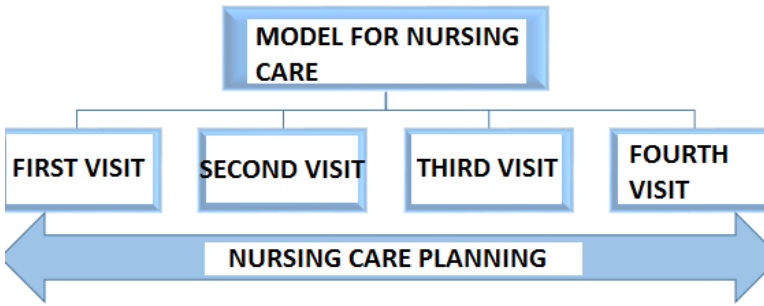

Figure 37. Model of health and wellbeing care - visits

A model for healthcare and well-being by lonely living elderly people is scheduled to be implemented over a 6-month period. The model includes four home visits:

- First visit - initial;
- Second visit - within the second month from the beginning;
- Third visit - in the fourth month from the beginning;
- Fourth visit - after the sixth month.

The proposed Model is a self-developed methodology adapted to the definition of quality of life in relation to the provision of medical and social care to elderly and single living people. It enables quantification assessment and subsequent comparison with the opinion of the user and that of the healthcare professionals. It is of utmost importance to determine not only the need for care, but also to anticipate possible oppositions and conflicts (Fig. 38).

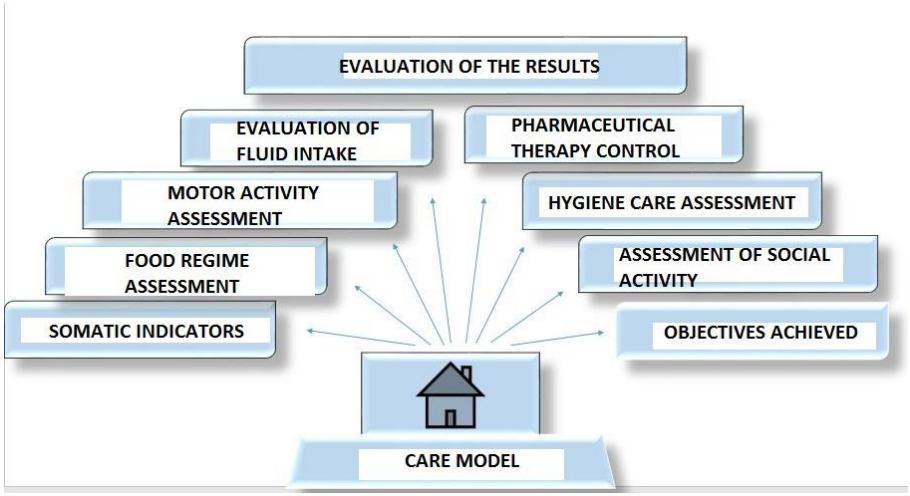

Figure 38. Model for healthcare and welfare of lonely living elderly people

The highlight of the proposed Model is the questionnaire that is appropriately selected. It must satisfy the following requirements:

- The questions should accurately reflect the problems that are characteristic of the mental, physical and health status of the elderly person, and on this basis to assess the quality of life and the necessary medical and social care;
- Depending on the information that needs to be received on a specific indicator should have several specific questions, such as their number to evaluate the various

indicators is not limited. This ensures a more accurate assessment and reduction of the influence of the subjective factor;

- The questions need to be stylishly edited

so that they can be perceived by the particular adult without difficulty.

Considering that it is necessary to address the medical and social needs, the questions are included in two groups:

A / The physical needs of the elderly.

Status assessment	
Nursing intervention	Argument:
Identify factors that increase the risk of injury.	These factors will help determine the necessary interventions for the elderly. Risk factors include age, disease, sensory and motor deficits, medication use and inappropriate use of mobility aids.
Assessment of the environment for factors that increase the risk of injury.	Environmental analysis will help determine the risk of sensory and motor deficits, aids, disorientation, isolation, drug treatment, and symptoms related to diseases.

Rating on autonomy on the elderly	The analysis of motor activity and the degree of independence while maintaining the comfort of the elderly will help to determine the degree of assistance in the preparation of a care and assistance plan.

B/ Therapeutic needs of the elderly

Status assessment	
Nursing intervention	Argument:
Assessment of current physical activity and mobility.	To create opportunities and conditions for saving and restoring the autonomy.
Collection of information for drug treatment.	The influence of side effects of certain drugs - tranquilizers, relaxants, sedative, beta-blockers.
Nursing supportive actions and care for comfort, treatment and recovery.	Enhancing the adaptive capacity of the elderly, helping to cope with stress and preventing potential health problems

Factors that may influence the assessment and analysis of the condition of the elderly can be defined as:

- At the patient level - behavior, cooperation, personality traits;

- At the nurse level - information, assessment, skills (organizational, communicative, professional);
- At the environmental level - support, interaction, social status, values and beliefs;
- At the policy level - legal and regulatory framework governing the provision of care at home.

We developed strategies to support and assist by the nurse:

- Developing a trusting relationship between a lonely living elderly people and medical professionals;
- Support in setting priorities and goals in adult care;
- Organization of studies to evaluate the risk of complications from the disease;
- Support and self-confidence and the ability to build trust and partnership;

Based on the study conducted among lonely living elderly people, we developed ***Practical steps in implementing the Model for the healthcare and well-being of lonely living elderly people (Fig. 39):***

Figure 39. Practical steps in implementing the Model

In order to achieve a positive result of care, the nurse implements the activities shown in Fig. 40.

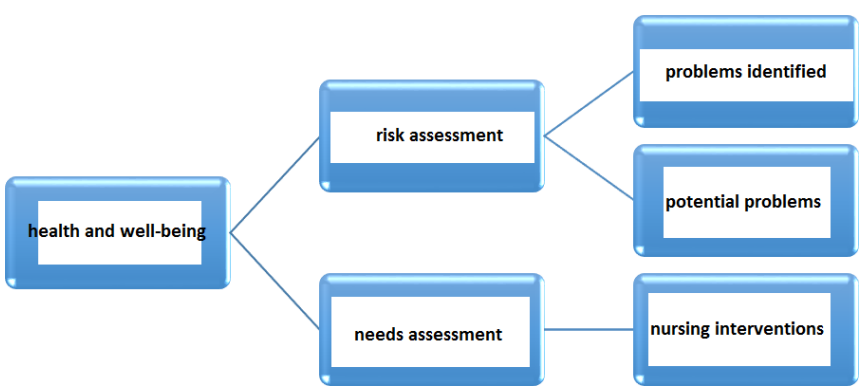

Figure 40. Tasks for the nurse by assisting the elderly

Changes in physical, mental and cognitive status that impair functioning, should be taken into account upon

daily communication with the elderly, especially if they are dependent on someone else's help. Old age should not be seen as a burden and an aggravating factor on the economy, but as an achievement that every individual strives for and has the right to live in dignity.

In the globalizing world, the pattern of cohabitation of different generations in one household is disappearing. Deprived of the social roles associated with active work and close family relationships, the elderly are discouraged. Social exclusion is difficult for everyone, but it is especially devastating for adults with reduced mobility and polymorbidity.

Social support is crucial for receiving both the necessary somatic care and maintaining the self-esteem of the elderly. Society should strive not only to provide the elderly with the conditions for physical existence, but also to give them the necessary recognition, as well as to benefit from the wisdom of the long life experience gained.

V. CONCLUSIONS, RECOMMENDATIONS AND CONTRIBUTIONS

5.1. CONCLUSIONS

1. The analysis of the literature sources has shown that there are various models of care for the elderly around the world, which over the years have shown their strengths and weaknesses and have proven to be good models in practice.
2. The system for providing services to lonely living elderly people needs to reconsider the functions of different professionals providing integrated and long-term care.
3. A significant proportion of healthcare professionals consider cros-sectoral collaboration ineffective (74.5%). According to them, the main reasons are the imperfection of the existing legislative and regulatory framework, the specifics of the serviced contingent of the population, the shortage of personnel, the lack of a register of the needy.
4. The majority of lonely living elderly people in need of home care have different biological and psycho-social needs. The organization of assistance and support should take into account the complex nature of their needs.
5. More than half of the surveyed lonely elderly people prefer the Model in which they stay at home and receive individualized care for health and well-being (54%).
6. The need for the creation of a Model of care aimed at reinforcing and enhancing the health of the elderly was identified in all study groups.
7. The need to provide home care by a well-trained and professional team has been proven.

Satisfaction by the nursing care was expressed by a large proportion of respondents (68.5%).

8. A large proportion of lonely living elderly people under the Care Model are in better health and well-being (83%).

5.2. RECOMMENDATIONS

Based on the results obtained and the conclusions reached after applying the **Model for healthcare and wellbeing** we will make the following suggestions:

- To the Ministry of Health

and the Ministry of Labor and Social Policy

- ✓ To establish rules for good healthcare for the elderly;
- ✓ To create favorable conditions for regulation and financing of the activities of the nurse in out-of-hospital medical care;
- ✓ To establish a Model for integrated and long-term care for the elderly in the home environment;
- ✓ Together with the local authorities to create a market for home-based medical and social services on the basis of public-private partnerships, provision of additional personnel and material resources.

- ***To Bulgarian Association of Health Care Professionals***
  - ✓ Create a working group for drafting good practice rules for the provision of healthcare to the elderly at home
  - ✓ To discuss and propose Models for elderly care.
  - ✓ To establish an individualized home care plan for the elderly.

5.3. CONTRIBUTIONS

Contributions of a theoretical nature

1. For the first time, the issue of providing medico-social assistance for single elderly people in the Veliko Tarnovo district is discussed in detail.
2. A comprehensive health and social approach to providing care for improving the health and well-being of the elderly is justified.
3. A study has been carried out related to the opinion of health professionals and social workers regarding the organization of medico-social assistance at home.
4. An analysis of the biological and psychosocial needs of elderly people in the home environment in the absence of care was made.
5. Various aspects of the quality of life of lonely living elderly people in the Veliko Tarnovo district were comprehensively studied.
6. Models for the healthcare and well-being of lonely living elderly people at home were developed.

Contributions of practical and applied nature

1. A decision model for care planning for single living elderly people has been developed.
2. Factors influencing the development and implementation of the nursing home care plan have been identified.
3. An information nursing card and protocol for nursing interventions have been developed as guiding documents for home care.

4. An authoritative model for home care for the elderly has been approved, leading to an improved quality of life.
5. A unified assessment of the needs of lonely elderly people has been introduced, which expands the capabilities and innovative approaches to optimizing home care.

List of publications related to the topic of the dissertation:

1. Markova, Ya., Zh. Pavlovska, Analysis of the nursing needs in Bulgaria, Collection of Reports Continuous Health Care - A Condition for a High Quality of Life, Shumen, 2016, p. 101-105, ISBN: 978-619-221-081-6
2. Markova, Ya., The Practical Significance of Research in the Field of Healthcare, Collection of reports "Health Care - Present and Future", Shumen, 2017, p. 323-327, ISBN: 978-619-978-619-221-168-4
3. Petrov, P., J. Markova, Methodology for the Percentage of Risk at Home Health Care, Macedonian Nursing, Issue 7, Bitola, 2018, p.21-27
4. Petrov, P., J. Markova, Interactions between needs and interests as a means of increasing the effectiveness of training of social assistants, Macedonian Nursing, 2018, Bitola, issue 7, p. 28-32

In print: Anniversary Scientific Conference "Current Trends in Health Care", September 21-22, 2018, Sliven

1. Markova, Ya., S. Borisova, Survey of the opinion of medical professionals and social workers on the organization of medical and social assistance for elderly people in the home environment
2. Markova, Ya., S. Borisova, Zh. Pavlovska, Researching the nursing need of medical and social assistance at home to the elderly people