The need for home-based geriatric care and physical, mental, and social functioning of seniors of over 65 years of age

Potrzeba domowej opieki geriatrycznej a funkcjonowanie fizyczne, psychiczne i społeczne osób po 65. roku życia

Małgorzata Dziechciaż[1], Izabela M. Wróblewska[2], Dorota Talarska[3], Jarosław Chmielewski[4], Rafał Filip[5], Monika Szpringer[6]

[1]Department of Health Sciences, Health Care Institute, State School of Higher Vocational and Economic Education, Jarosław, Poland
Head of the Department: Prof. Janusz Schabowski MD, PhD
[2]Department of Gerontology, Faculty of Health Sciences, Medical University, Wroclaw, Poland
Head of the Department: Prof. Jarosław Drobnik MD, PhD
[3]Department of Preventive Medicine, Faculty of Medical Sciences, Poznan University of Medical Sciences, Poznan, Poland
Head of the Department: Jacek Wysocki MD, PhD
[4]Institute of Environmental Protection-National Research Institute, Warsaw, Poland
Head of the Institute: Prof. Barbara Gworek PhD
[5]Department of Gastroenterology, Clinical Regional Hospital No. 2 Św. Jadwigi Królowej Faculty of Medicine, Rzeszow University, Rzeszow, Poland
Head of the Department: Prof. UR Rafał Filip MD, PhD
[6]Department of Social Prevention, Faculty of Medicine and Health Sciences, Jan Kochanowski University, Kielce, Poland
Head of the Department: Prof. JKU Monika Szpringer MD, PhD

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Key words: old age, seniors, older age.

Słowa kluczowe: wiek podeszły, osoby starsze, starość.

Abstract

Introduction: The increased percentage of seniors observed within society establishes new challenges for healthcare systems.
Aim of the research: To estimate the need for geriatric, home-based care for people over 65 years of age living in rural areas, in the context of physical, mental, and social functioning.
Material and methods: The research methods included the diagnostic poll method and direct observation. The following research tools were used: Barthel Index, Lawton Index, Abbreviated Mental Test Score by Hodkinson, Geriatric Depression Scale Short Form, and an authorial interview questionnaire. The criterion for home-based geriatric care was to be declared as a geriatric patient. The research was carried out among 504 people in the ages of 66 to 94 years (average: 77.41 years).
Results: For home-based geriatric care, significantly more women than men were qualified ($p < 0.01$). The average age of respondents qualified for home-based geriatric care was higher than the age of other test subjects ($p < 0.001$). Subjects qualified for home-based geriatric care were more often widowed ($p < 0.001$) with incomplete primary education ($p < 0.001$) and substantially were living alone ($p < 0.05$). Among the people qualified for home-based geriatric care there were more multi-diseases, worsened agility to perform basic and complex daily life activities, and worsened cognitive and emotional performance ($p < 0.001$) than with other test subjects.
Conclusions: For home-based geriatric care, a third of seniors living in rural areas were qualified. The need for home-based geriatric care was determined by suffering from multi-diseases, having functional, emotional, and cognitive disorders, progressing age, being female, having low education, and being widowed.

Streszczenie

Wprowadzenie: Wzrost odsetka seniorów w społeczeństwie stawia nowe zadania przed systemem opieki zdrowotnej.
Cel pracy: Ocena zapotrzebowania na domową opiekę geriatryczną wśród osób po 65. roku życia mieszkających na wsi w zakresie ich funkcjonowania fizycznego, psychicznego i społecznego.
Materiał i metody: Badania przeprowadzono metodą sondażu diagnostycznego i obserwacji bezpośredniej. Posłużono się narzędziami badawczymi, takimi jak skala Barthel, skala Lawtona, Skrócony test sprawności umysłowej wg Hodkinsona, Geriatryczna skala oceny depresji oraz autorskim kwestionariuszem wywiadu. Kryterium kwalifikacji do domowej opie-

ki geriatrycznej było uznanie pacjenta za geriatrycznego. W badaniu wzięły udział 504 (329 kobiet, 175 mężczyzn) osoby w wieku od 66 do 94 lat (średnia 77,41 roku).
Wyniki: Do domowej opieki geriatrycznej zakwalifikowało się istotnie więcej kobiet niż mężczyzn (38,30% kobiet, 25,14% mężczyzn) ($p < 0,01$). Średni wiek respondentów zakwalifikowanych do domowej opieki geriatrycznej był wyższy niż pozostałych badanych (81,94 *vs* 75,10 roku) ($p < 0,001$). Badani zakwalifikowani do domowej opieki geriatrycznej częściej byli owdowiali ($p < 0,001$), mieli wykształcenie niepełne podstawowe ($p < 0,001$) oraz istotnie częściej mieszkali samotnie ($p < 0,05$). U respondentów spełniających kryteria kwalifikacji do objęcia domową opieką geriatryczną występowała większa liczba jednostek chorobowych, stwierdzono u nich gorszą sprawność w wykonywaniu podstawowych i złożonych czynności dnia codziennego oraz gorszy stan poznawczy i emocjonalny ($p < 0,001$) niż u pozostałych badanych.
Wnioski: Do domowej opieki geriatrycznej kwalifikowała się ponad 1/3 seniorów mieszkających na wsi. Determinantami zapotrzebowania na domową opiekę geriatryczną były: wielochorobowość, niesprawność w funkcjonowaniu czynnościowym, emocjonalnym i poznawczym, postępujący wiek, płeć żeńska, niski poziom wykształcenia i wdowieństwo.

Introduction

Geriatrics, as defined by the World Health Organisation, is a specialist branch of medicine dealing with the health, diseases, care, and aid of people in old age [1]. The essential activities of geriatrics include a holistic approach to geriatric patients with a focus on diagnosis and treatment of problems resulting from polypathology, not only on diagnosis and treatment of single diseases. The complexity of problems of seniors, overlapping involutionary changes and multi-disease, indicates the multi-disciplinary characteristics of geriatrics [2].

The Geriatrics Section of the European Society of Doctors acknowledged the geriatric patient as a patient with multi-disease in old age, mostly at the age of over 70 or every person of 80 and over, due to the risk of complicated pathology [3]. Wieczorowska-Tobis, by contrast, defines the "senior patient" as a person of at least 65 years of age, with functional disability or with a risk factor. The author indicates that functional disability increases with multi-disease and progressing age, and is especially high with people of 80 years of age or older [4]. The World Health Organisation defines the geriatric patient as a patient of 60 years of age or older, referred to a geriatrician, with high risk of worsening health condition or even death caused by multi-disease or age [5].

Primary geriatric care includes: universal and available accessibility, continuity, high quality, and complexity.

Universal care means the right of seniors to use health services equally in comparison with younger age groups. Available accessibility means location of medical health care facilities close to place of residence and possibility access to free-of-charge medical procedures. Continuity means the long-term consistent care resulting from the process of ageing and the character of inter-current diseases. High quality refers to providing professional geriatric knowledge in seniors' care processes, which corresponds to developing skills and knowledge of healthcare professionals and personnel. The complexity of care means a complex approach to solving problems of seniors. The cooperation of various specialists is required to achieve the best results in diagnosis and treatment of functional, emotional, and cognitive states [6].

European Union countries vary in their approach to providing geriatric care. EU countries with the most developed senior care include: the UK, Sweden, Germany, Belgium, Norway, Denmark, and Ireland. These countries have highest number of geriatricians, and their health care structures include well-organised ambulatory, hospital, and rehabilitation geriatric care. In Poland, Bulgaria, and Estonia, by contrast, geriatrics is neglected and unappreciated [7].

The current system of geriatric care in Poland includes 24-hour geriatric wards, daily geriatric wards, and ambulatory care, including home-based care. The system is inefficient. The lack of geriatricians, general practitioners with insufficient geriatric knowledge, lack of pharmacological procedures, and a significant shortage of geriatric care centres is observed [8].

Ambulatory and home-based geriatric care is the most desired form of care for seniors and should be a supplementary to, or an alternative form of, primary healthcare. It is recommended that such care be provided by an interdisciplinary geriatric body including a doctor, nurse, physiotherapist, and social worker. Depending on the situation, such teams could be extended to include a nutritionist or psychologist, or professional consultations [8].

Within the healthcare system seniors require nursing services the most [9]. It is required that nursing care is continuous and coordinated, aimed at diagnosis and treatment of problems of people in old age [10]. Nursing personnel perform various treatment services of rehabilitation and nursing origin towards seniors, monitors general health condition, functional agility, fulfilling tasks for promotional and preventive treatment and teaching how to cope with problems of ageing [11]. The nurse is considered to be a key partner of a doctor in fulfilling total geriatric care, together constituting a solid base of the geriatrics team [6]. For standardised healthcare services, especially with geriatrics, nursing personnel are granted the main role in home-based care due to frequent contact with patients and their carers [12]. Moreover, "a nurse by virtue of professional competence may be a natural coordinator of nursing and care standards" [13]. Nonetheless,

in the Ordinance of the Ministry of Health dated 6th November 2013 on guaranteed benefits and services of ambulatory specialised care guidelines for personnel required in fulfilling geriatric specialty counselling, nursing personnel were not included. The legislator lists only a "doctor specialised in geriatrics or gerontology, during specialisation of geriatrics, or a doctor specialised in geriatrics or gerontology with at least 5 years of experience working in a ward in accordance with the profile of guaranteed services doctor: internal medicine specialist, neurology specialist or general practitioner or family doctor" [14].

Today, geriatric, home-based care in Poland is not a separate contractual health service but instead functions under ambulatory specialty geriatric services. Provision of services does not describe a required number of home visits nor a percentage of visits per total number of services. There is no interdisciplinary geriatric body, the presence of a certified nurse is not required but additionally apprised if a minimum of 50% of clinic time is concerned [15]. Information provided by the National Health Fund – Podkarpacie Region states that there is only one functioning geriatric clinic [16].

In January 2013 the Experts of the Gerontology Advisory Team with the Ministry of Health formulated standards for geriatric care services. In accordance with the standard, home-based geriatric care shall be provided by a geriatric body (geriatrician, nurse, physiotherapist, psychologist, and other people including a medical counsellor, nutritionist, speech therapist) in the form of home-based consultation visits of geriatric patients, not requiring hospitalisation, but the inability to use ambulatory services entitles the provision of services at the place of residence.

The aim of the geriatric home-based body is: diagnosis and treatment of geriatric diseases and problems in the place of residence, control of post-hospital care recommendations, and prevention of further disability processes through implementation of improvement actions, education of the patient and his/her family, and risk analysis of home living conditions with guidance on room adaptation.

By this standard, the main tasks of geriatric home-based care include: diagnosis of medical and nursing needs using total geriatric assessment, establishing and carrying out an individual plan of medical, nursing, and rehabilitation care with the appraisal of results and documentation record keeping.

Key criteria for providing home-based geriatric care are: immobilisation in the home environment, worsening health condition preventing independent functioning, time of up to 3 days after hospital stay, architectural barriers preventing personal visit of the geriatric patient to a clinic, conditions indicating the necessity of such care.

The qualifying process to provide home-based geriatric care should be conducted by a qualified geriatrician or a doctor during specialisation in geriatrics lasting at least 1 year. The frequency of such visits should be determined by the individual health conditions of the patient. Geriatric home-based care body should provide supplementary care and extend general practitioner activities in the aspects of assessment and geriatric therapy [5].

Aim of the research

The aim of the research was to estimate the need for home-based geriatric care and the physical, mental, and social functioning of seniors over 65 years of age.

Material and methods

The research was carried among 504 people residing in rural areas of Podkarpackie Province (n = 329; 65.28% women and n = 175; 34.72% men) between 66 and 94 years of age. The following research tools were used: The Barthel Index to measure performance in activities of daily living, the the Lawton IADL Scale to measure instrumental activities of daily living, Abbreviated Mental Test Score AMTS to determine the presence of cognitive function, Geriatric Depression Scale Short Form GDS-SF to evaluate emotional ability, and the Authorial Interview Questionnaire to assess socio-demographic, finance, health, and social support conditions. The criteria for providing home-based geriatric care was a score of 75 or less in the Barthel Index – meaning being immobile in the home environment and the criteria of a geriatric patient, diagnosed multi-disease, or 80 years of age or over.

Statistical analysis

Statistical calculation was completed using Statistica 6.0 PL specialised software. Statistical significance level was set at $p < 0.05$. The following statistic tests were used: Kolmogorov-Smirnov test and Pearson's chi-squared test (χ^2).

Results

A total of 170 people were qualified for home-based geriatric care (33.73% of subjects). Among all subjects 38.30% of women (n = 126) were qualified for home-based geriatric care. With men the percentage was lower at 25.14% (n = 44) ($p < 0.01$).

The mean subjects' age qualified for home-based geriatric care was higher than with others (81.94 vs. 75.10) ($p < 0.001$).

Subjects qualified for home-based geriatric care were rarely married and more often widowed ($p < 0.001$).

Among subjects qualified for home-based geriatric care there were significantly more people with incomplete primary education ($p < 0.001$) and with vocational education ($p < 0.001$) than for the rest of the group.

It was determined that among people qualified for home-based geriatric care there were fewer people living with a spouse ($p < 0.01$) and more living alone ($p < 0.05$) than in the other researched group.

Studies have shown that in respondents who met criteria for home-based geriatric care there was more multi-disease than with other subjects (average 3.76 vs. 2.59) ($p < 0.001$).

Within the group of respondents qualified for home-based geriatric care there was a significantly smaller number of people with correct eyesight (15.88% vs. 46.11%) ($p < 0.001$), and a greater number with visual impairment (82.94% vs. 53.59%) ($p < 0.001$). There were no differences in the number of blind people and people using correctional glasses ($p > 0.10$).

The analysis of hearing of respondents qualified for home-based geriatric care have shown that hearing loss was present more frequently than with others (62.94% vs. 37.13%; $p < 0.001$), and deafness (2.94% vs. 0.30%; $p < 0.05$).

It was also proven that respondents qualified for home-based geriatric care had worse cognitive performance than the rest of the interviewees (average AMTS results: 6.04 vs. 8.52) ($p < 0.001$) (Figure 1).

It has shown that respondents qualified for home-based geriatric care in the GDS-SF test scale achieved significantly worse results than people who were not qualified ($p < 0.001$). The average results of the GDS-SF scale for people qualified for geriatric care were within the range of mild depression (7.41), whereas within people not qualified for such services the results were within the normal emotional state (3.71) (Figure 2).

People using the social care institution services totalled 10.59% of all those qualified for home-based geriatric care. Amongst them the clear majority (16; 9.41%) used one form of help, and one (0.59%) used two or three forms of social services. Mostly it was financial aid (14; 8.24%). Non-financial aid was used by 5 (2.94%) respondents, and meal sponsoring and care services was used by only 1 person (0.59%).

Discussion

The need for geriatric services increases with progressing age [17–19]. In the geriatric approach, the necessity of complex care, based on the cooperation of many different specialists, directed at identifying functional disorders of people in old age is essential. Such an attitude prevents progressing disability and influences improvement of functioning state of seniors, thus reducing the frequency of institutionalisation. The studies of numerous authors have shown that people in old age residing in rural areas are in worse health and social situation than seniors residing in cities, and additionally they have more difficulty accessing healthcare services [20–23].

In Poland, geriatrics was given a priority in medicine [24, 25] in accordance with the Minister of Health Regulation of 20th December 2012, with the Ministry of Health declaration an improvement in seniors' healthcare services, although it is still commonly accepted that seniors' care is "the family's obligation". Family care possibilities still depend on their size, structure, and social and economic status [26]. Presently, a decline in family care efficiency is observed, mainly due to changes of structure and functioning. Two-generation families are dominant, with a higher

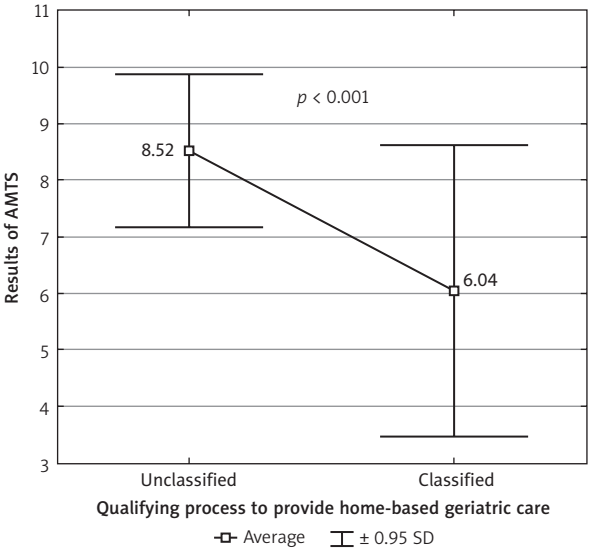

Figure 1. Qualifying process to provide home-based geriatric care, mean and standard deviation for results of AMTS ($N = 504$)

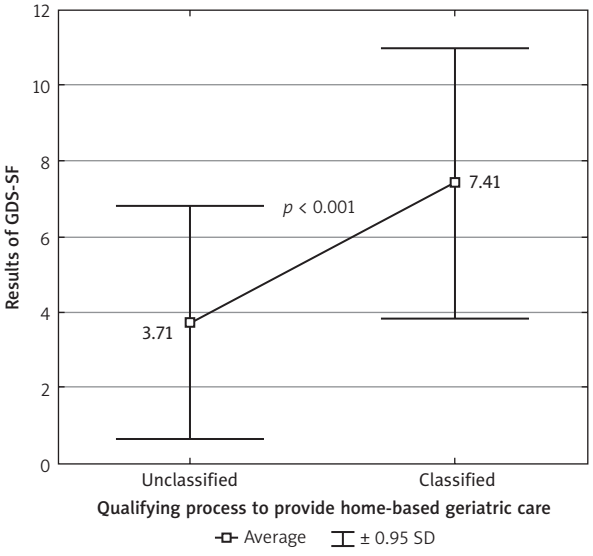

Figure 2. Qualifying process to provide home-based geriatric care, mean and standard deviation for results of GDS-SF scale ($N = 504$)

number of one-person households [27], and emigration of working-age people often contributes towards making older parents "orphans" in their own country [28]. Moreover, longevity causes the situation where seniors' children become seniors themselves, and the support and aid must be given for both generations [27]. This lowered nursing potential of the family results, and will result in, even higher demand on healthcare services, both home-based and through institutions [1].

Szukalski indicates that ageing entails higher demands on geriatric services directed at the specific needs of ageing people [19]. One of the main objectives of geriatrics is to provide the best available care to seniors suffering from multi-disease and other problems [29]. As is generally known, an identified range of seniors' functional disabilities with appropriately provided services may significantly contribute to longer self-dependency and self-reliance of people in old age, which may lead to lowered costs of healthcare [30].

Kocemba draws attention to extending provision of healthcare services for geriatric treatment of seniors, especially those over 75 years of age, to the period after successful treatment, and they should include the following activities: assessment of disability level to continue living in a home-based environment, training of carers to provide for convalescence, introduction of improving actions, and assessment of social and environment conditions and the threat of ageism [31].

Wojszel and Bień, based on research conducted among 230 subjects residing in urban areas and 233 residing in rural areas, aged 75 years and older, have shown widespread occurrence of functional disability of seniors and even "dramatic health conditions" of seniors residing in rural areas, resulting mainly from disproportionate accessibility to medical and social care. The need to develop home-based care, especially nursing and rehabilitation for people in old age and an active dispensary system of advanced old age, was requested [20].

In accordance with reference books, the comprehensiveness of geriatric care shall be the standard and the aim the longest time of self-dependency and self-reliance. Unfortunately, as Bień states, "Geriatrics in Poland does not have a well-defined place (...). Consequently, Poland belongs to the group of countries with the poorest access to geriatric care" [32]. Derejczyk *et al.* believe that, despite existing outlines, geriatrics does not have pre-described place in healthcare services, with both healthcare and social care of seniors being scarce, incoherent, scattered, and with limited accessibility to services [1].

West European countries, Canada, and the United States of America strive to keep seniors in their own home environments, with functioning systems of health and social care to relieve the family from care of seniors [33].

Based on the analysis of Polish nationwide research carried among 1078 residents of urban areas and 743 residents of rural areas, comprising people of 65 years of age and over, Bień stated that "healthcare of seniors in Poland, especially in rural areas, is inefficient and does not meet the standards of geriatric approach of universal and available accessibility and complexity of provided services" [21].

The analysis of researched data seems to correspond with the abovementioned report data. Respondents qualified for home-based geriatric care met the standards of being a geriatric patient and immobile in the home environment. To be acknowledged as a geriatric patient, the respondents were with multi-disease or 80 years of age and over with polypathology and functional disability, immobilised in the home environment, and with a score of no more than 75 points in Berthel's Index. For home-based geriatric care, a total of 33.73% of researched residents of rural areas of over 65 years of age were qualified. It should be mentioned that within the group, 82.94% had multi-disease, which qualified these seniors to provision of geriatric care standards.

It was ascertained that people qualified for home-based geriatric care were older and had lower educational level than other test subjects, and more frequently were women. Moreover, widowed people and those living alone were significantly more often qualified for home-based geriatric care.

The analysis of health-related factors for the need of home-based geriatric care has shown that crucial determinants for home-based geriatric care were: worsened eyesight, hearing loss, deafness, and multi-disease. Moreover, people qualified for home-based geriatric care more frequently suffered from: circulatory insufficiency, history of cerebral stroke, bronchial asthma, atherosclerosis, diabetes, osteoarthritis, Parkinson's disease, Alzheimer's disease, various cancers, and prostate disease.

The analysis of collected data proved that subjects qualified for home-based geriatric care were underperforming in complex activities of daily living, and had worse cognitive performance and more intense depression symptoms than subjects not qualified for such care.

It was observed that merely 10.59% of people qualified for home-based geriatric care used social care services, most frequently financial. Among all people qualified for home-based geriatric care, with moderate disability and immobility in the home environment, only one person used care and nursing services within the social care system. This confirms the literature statement that services provided by institutions of social care services are inefficient [1], and the care of disabled seniors in the home environment is mainly provided by family carers [34].

A lack of available research to assess the need for home-based geriatric care made the comparison with other authors' works impossible.

Summarising, it may be stated that seniors' care system functioning in Poland does not fully comply with medical and social demands, and interdisciplinary geriatric care, based on the overall geriatric assessment of people in old age, is practically non-existent.

The results of the researched data authorise the formulation of the following postulates:

- Enabling access to broadly defined geriatric services including home-based geriatric care to people in old age. It would prevent functional disability and would improve quality of life of seniors and their families, and in consequence would reduce total costs of healthcare services.
- Granting appropriate authorisation to nurses, which would enable successful qualification of people in old age to geriatric care and correct coordination of such care in the home environment.

Conclusions

For home-based geriatric care, a third of seniors living in rural areas were qualified. The need for home-based geriatric care was determined by: suffering from multi-diseases, having functional, emotional, and cognitive disorders, progressing ageing, being female, having low education, being widowed.

Conflict of interest

The authors declare no conflict of interest.

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Address for correspondence:

Małgorzata Dziechciaż PhD
Department of Health Sciences
Health Care Institute
State School of Higher Vocational and Economic Education
ul. Siemieńskiego 7, 37-500 Jarosław, Poland
Phone: +48 503 116 350
E-mail: dziechciaz@vp.pl