Coll. Antropol. **46** (2022) 1: 37–45
Original scientific paper
doi: 10.5671/ca.46.1.6

Functional Independence and Social Support as Mediators in the Maintenance of Mental Health among Elderly Persons with Chronic Diseases

Dijana Babić[1,2], Danica Železnik[3], Jernej Završnik[4], Milan Milošević[5], Gordana Kamenečki[6]

[1]School of Medicine, University J.J. Strossmayer, Osijek, Croatia
[2]Magdalena Clinic for Cardiovascular Diseases, Krapinske Toplice, Croatia
[3]Faculty of Health and Social Sciences Slovenj Gradec, Slovenia
[4]Health Center "Dr.Adolf Drobac" Maribor, Slovenia
[5]University of Zagreb, School of Medicine, Zagreb, Croatia
[6]Special Hospital for Medical Rehabilitation, Krapinske Toplice, Croatia

ABSTRACT

The presence of chronic disease and lack of social support have negative impact on functional capacity in later life. The aim of this study was to determine the possible connections between the alteration in functional abilities and access to sources of social support with the occurrence of depression in elderly persons with chronic disease. A cross-sectional survey was conducted among 151 subjects with cardiovascular diseases at the age of 60 and above using standardized questionnaires. Groningen Activity Restriction Scale (GARS), Duke-UNC Functional Social Support Questionnaire (FSSQ), and Geriatric Depression Scale Short Form (GDS) were used to identify the presence of limitations in functional status, availability of social support and symptoms of depression. Multivariate binary logistic regression model was used to assess multivariate influence of significant variables on inclusion in the indicative depression group. Spearman's rho coefficient was used to analyze correlation between GARS, GDS and FSSQ. GDS score ≥10 (indicative depression) was obtained by 15 (9.9%) participants and scores in the range 6–9 (suspected depression) by 21 (13.9%) participants. There were no significant correlations between the scores on the depression assessment scale and the sociodemographic characteristics of the participants. Binary logistic regression showed that with GARS increasing by a single unit, the chance of having depression significantly rises by 7% (OR: 1.07, 95% confidence interval (CI): 1.01–1.13; P=0.013) while when FSSQ increases by a single unit, that chance drops nearly 2.5 times (OR: 0.40, 95% CI: 0.23–0.70; P=0.001). The development of functional limitations and reduced level of social support are connected with the occurrence of depression. Creation of programs that will encourage the preservation of functional independence and enable effective social assistance can make a significant contribution to maintaining the mental health of elderly persons with chronic diseases.

Key words: *elderly, mental health, functional dependency, chronic disease, social support*

Introduction

Aging is an inevitable part of the human lifespan, primarily marked by a decline of physical, mental, and social functioning[1,2]. Approximately 20% of the elderly at the age of 60 and above have difficulties with mental health and neurological functions, which are the main reasons for almost 6.6% of all disabilities in old age[3]. Changes in psychological patterns of functioning that are characterized by difficulties in adapting to new situations, decrease in cognitive and intellectual processing, perception, stimulus reception and information processing, as well as weakening thought processes are accepted consequences of aging[4].

According to the World Health Organization, mental health can be described as "a state of well-being in which an individual successfully meets his or her abilities, copes with normal life stresses, and contributes productively and effectively to the community in which he or she lives"[5,6].

There are a numerous factors related to appearance of problems with mental health in old age, such as the loss of close persons, social network or status, functional capacity, cognitive and sensory functions and the incidence of chronic diseases[7]. Mental health difficulties in old age

Received for publication February 20, 2021

often go hand in hand with the presence of common chronic diseases such as diabetes, heart disease, and arthritis[8]. The severity of symptoms of impaired mental health often correlates with the number of comorbidities, which place the elderly at risk for the development of anxiety and depression[9]. It was estimated that 5–10% of the elderly (65+) exhibit different signs of depression, while anxiety occurs in another 6–12%; it is important to emphasize here that the frequency of depressive symptoms is more significant than the clinical forms of depression[7].

The occurrence of psychological difficulties in old age may contribute to a decrease in overall functional capacity[10]. Functional disability can be primarily defined as the presence of difficulties in performing basic and instrumental daily self-care activities, which can be related to different adverse healthcare outcomes such as prolonged hospitalization, admission to emergency services, institutionalization, and overall mortality[11–13]. According to available statistical data, it has been determined that approximately 8% of the elderly who live in independent households need help in performing one or more basic daily self-care activities[14].

Elderly persons with impaired functional capacity have more difficulties in performing normal social activities, which consequently influences the occurrence of behavioral problems and deterioration of a number of clinical conditions[15]. Older adults are generally considered to be more vulnerable to the impact of stress events which occurs as a consequence of impaired physical health and reduced social relationships[16].

The concept of social support describes a network of social relationships that one shapes during one's lifetime, which are characterized by a significant level of emotional quality[17–18]. It is actually a system based on formal and informal relationships through which the individual receives informational, emotional, affirmative and material support, and establishes positive social interactions[18–19]. The presence of social support acts as a strong mediator between the severity of somatic problems and the onset of psychological stress[20]. Likewise, a high level of social support can help prevent and reduce the incidence of frailty and the risk of abuse in old age[21]. Social support is generally considered to play a useful role in maintaining mental health and psychological well-being and has a positive effect on reducing the risk of developing depression[20,22]. Therefore, this study aims to determine possible connection between the level of functional independence and the availability of social support with the occurrence of depressive symptoms in the elderly with chronic cardiovascular disease.

Material and Methods

A cross-sectional survey was conducted during April and May 2020 at the Clinic for Cardiovascular Diseases Magdalena. A total of 159 hospitalized patients admitted for invasive diagnostics were invited to participate in this study. Inclusion criteria were the following: age 60+ years, history of at least one chronic cardiovascular disease, ability to understand and read the questions asked, and expressed willingness to participate in the study. The data were collected using standardized questionnaires that respondents completed independently or with assistance of department nurse. Only questionnaires completed in full were included in the analysis. After the adjustment of inclusion criteria and exclusion of partially completed questionnaires, the study included a total of 151 respondents. Our study has been approved by a suitably constituted Ethics Committee of the Clinic for Cardiovascular Diseases Magdalena under the number 195/Ing-841/20 and that it conforms to the provisions of the Declaration of Helsinki in 1995 (as revised in Edinburgh 2000). Participans gave informed consent and patient anonymity was preserved. The data were collected individually by educated registered nurses. Selected instruments are validated in Croatian and applied with the authors approval. The following questionnaires were applied:

Groningen Activity Restriction Scale (GARS)

The Groningen Activity Restriction Scale[23] was used to assess the presence of functional limitations. The scale contains a total of eighteen questions, ten of which serve to assess performance of basic daily activities such as taking food, performing hygiene, dressing and level of motion, while the other eight questions are focused on instrumental daily activities, which include maintaining foot hygiene, preparing meals, and providing physically demanding daily tasks. On each question one answer can be given that ranges the level of difficulty in completing a certain activity from a full independence to an inability to perform a specific task without the help of others. Answers are scored with the numbers from one to four, where a higher number of points indicates a higher level of functional difficulties. Validation study provided by Kempen et al. (1996) showed that the Groningen Activity Restriction Scale (GARS) is an comprehensive, valid, reliable and easy-to-administer measurement tool for assessing disability in the domains of daily activities among the elderly population with estimated high internal reliability for male (0,89) and female (0,92) respondents. Similar characteristics of this scale are shown in the study by Suurmeijer et al. (1994) conducted on the group of patients with rheumatoid arthritis, whose results showed a high degree of internal reliability (rho=0.94) and applicability of this instrument in comparative and longitudinal research across different settings.

Geriatric Depression Scale – Short Form (GDS)

The assessment of depressive symptoms was conducted by applying The Geriatric Depression Scale Short Form[25], which contains fifteen questions that can be answered with a positive or negative answer. Affirmative answers to the first ten questions as well as negative answers to the other five questions indicate the presence

of depression and are scored with one point. The total score of five points or more suggests an appearance of depression and a requirement for further assessment, while ten points or more almost always indicate the existence of depressive state. Psychometric characteristic of GDS (Short Form) were previously tested in multiple studies. Fountoulakis et al. (1999) have determined high levels of specificity and sensitivity of this scale at the cut-off score 6/7 with estimated high internal consistency (0,94). Study by Durmaz et al. (2017) conducted among older adults in primary care showed high degree of sensitivity (92%), specificity (91%), positive predictive value (76%) and negative predicitive value (97%) as well as internal consistency (0,92) of this scale, pointing at this instrument as a valuable tool for the assessment of depression.

Duke-UNC Functional Social Support Questionnaire (FSSQ)

The Duke-UNC Functional Social Support Questionnaire (FSSQ)[28] is a tool that contains eight questions about the availability of intimate confidential relationships and emotional support. Perceived presence of these two forms of support can be rated on a five-point Likert scale. Higher average score represents a higher level of satisfaction which a person experiences when receiving a particular form of support. These tools primarily aim to detect persons at risk of social isolation and identify possible connections between availability of social support and other factors affecting health status. A study by Mas-Esposito et al. (2013) conducted among patients with schizophrenia showed suitable psychometric properties of this instrument, showing high degree of Internal consistency at the baseline (0,87) and after one-year follow up (0,88).

The Kolmogorov-Smirnov test was used to assess continuous data normality distribution and according to the results, it was appropriate to use non-parametric tests in the following analyses. Categorical variables were represented as frequencies and percentages while continuous variables were expressed through medians and interquartile ranges (25thth and 75thth percentile – IQR). Internal consistency of the used questionnaires was checked with the Cronbach α coefficient. Fisher-Freeman-Halton's exact test was used to assess differences in categorical variables between the GDS groups, while the Kruskal-Wallis test was used to assess differences in quantitative variables between the same groups. Spearman's rho coefficient was used to analyse correlation between the Groningen Activity Restriction Scale (GARS), Geriatric Depression Scale (GDS) and Duke-UNC Functional Social Support Assessment Questionnaire (FSSQ). All significant variables were included in the multivariate binary logistic regression model to assess multivariate influence on belonging to the appropriate indicative depression group. All P values below 0.05 were considered significant. IBM SPSS Statistics version 25.0 has been used in all statistical procedures.

Results

Descriptive statistics of socio-demographic variables and questionnaires on the total number of participants, n=151, are shown in Table 1. Median age of all participants was 69.0 (65.0 – 74.0) years and majority of participants (65.6%) were men. 83 (55.0%) participants finished high or middle school, 109 (72.2%) participants were married, while 105 (69.5%) participants lived with their partners. Angina pectoris was the most common medical diagnosis – it was present in 52 (34.4%) participants.

TABLE 1

DESCRIPTIVE STATISTICS OF SOCIO-DEMOGRAPHIC VARIABLES AND QUESTIONNAIRES

Age (years): median (IQR)	69.0 (65.0 – 74.0)
Gender: n (%)	
Male	99 (65.6)
Female	52 (34.4)
Education level: n (%)	
Elementary school or less	25 (16.6)
High school	83 (55.0)
University degree	43 (28.5)
Marriage status: n (%)	
Single	5 (3.3)
Married	109 (72.2)
Widowed	32 (21.2)
Other	5 (3.3)
Living with: n (%)	
With partner	105 (69.5)
With children/grandchildren	14 (9.3)
Alone	30 (19.9)
Other	2 (1.3)
Main medical diagnosis: n (%)	
Angina pectoris	52 (34.4)
Coronary disease	38 (25.2)
Heart valve disease	19 (12.6)
Heart arrhythmia	18 (11.9)
Peripheral arterial disease	10 (6.6)
Heart failure	8 (5.3)
Arterial hypertension	6 (4.0)
Geriatric Depression Scale (GDS): n (%)	
≤5 (without depression)	115 (76.2)
6–9 (suspected depression)	21 (13.9)
≥10 (indicative depression)	15 (9.9)
Groningen Activity Restriction Scale (GARS): median (IQR)	20.0 (18.0 – 26.0)
Functional Social Support Questionnaire (FSSQ): median (IQR)	4.6 (4.0 – 5.0)

FSSQ – Duke-UNC Functional Social Support Questionnaire, GARS – Groningen Activity Restriction Scale, GDS – Geriatric Depression Scale, IQR – The interquartile range (median),

N – total number of participants

GDS score ≥10 (indicative depression) was obtained by 15 (9.9%) participants and scores in the range 6–9 (suspected depression) by 21 (13.9%) participants. Median (IQR) value of the GARS was 20.0 (18.0 – 26.0), while for FSSQ it stands at 4.6 (4.0 – 5.0). Internal consistencies for all used questionnaires were satisfactory: Cronbach α coefficient for GARS was 0.93, for GDS 0.83 and for the FSSQ scale it stands at 0.94. There were no significant differences between GDS groups in relation to other categorical variables (gender, education level, marriage and living status and main medical diagnosis), as presented in Table 2.

Significantly higher GARS scores were obtained in higher GDS groups (P=0.011) while FSSQ scores dropped (P<0.001; Table 3). At the same time, the age of the subjects was not a significant correlating factor for any form of depressed mood. These data were additionally analyzed by means of correlation coefficients (Table 4) and a significant positive correlation was noted between GDS and GARS scores (rho=0.338; P=0.001) indicating that participants with higher restrictions have higher depression scores. At the same time, GDS and FSSQ scores showed a significant negative correlation (rho=–0.315; P<0.001), indicating that participants with lower social support have higher depression scores. Binary logistic regression showed that with GARS increasing by a single unit, the chance of having depression significantly rises by 7% (OR: 1.07, 95% confidence interval (CI): 1.01–1.13; P=0.013) while with FSSQ increasing by a single unit that chance drops nearly 2.5 times (OR: 0.40, 95% CI: 0.23–0.70; P=0.001) (Table 5).

The analysis of individual responses on the GARS scale has shown that almost half of the subjects (N = 70, 46.35%) report difficulties in performing physically demanding household chores and ironing (N = 58, 38.41%), while a third of the respondents (N = 55, 36.42%) reported difficulty climbing stairs. When analyzing individual responses on the GDS, it was noticed that more than half of the subjects (N = 82, 54.30%) responded positively to the statement about the lack of life energy or will, while from other statements those about more frequent choice of activities that do not require going outside and leaving home

TABLE 2

DIFFERENCES BETWEEN GDS GROUPS IN RELATION TO OTHER CATEGORICAL VARIABLES: FISHER-FREEMAN-HALTON'S EXACT TEST

		Geriatric Depression Scale (GDS)						Q
		≤5 (without depression), N=115		6–9 (suspected depression), N=21		≥10 (indicative depression), N=15		
		N	%	N	%	N	%	
Gender	Male	73	63.5%	15	71.4%	11	73.3%	0.669
	Female	42	36.5%	6	28.6%	4	26.7%	
Education level	Elementary school or less	21	18.3%	1	4.8%	3	20.0%	0.554
	High school	63	54.8%	12	57.1%	8	53.3%	
	University degree	31	27.0%	8	38.1%	4	26.7%	
Marriage	Single	2	1.7%	1	4.8%	2	13.3%	0.112
	Married	87	75.7%	13	61.9%	9	60.0%	
	Widowed	23	20.0%	5	23.8%	4	26.7%	
	Other	3	2.6%	2	9.5%	0	0.0%	
Living with	With partner	84	73.0%	12	57.1%	9	60.0%	0.230
	With children/grandchildren	9	7.8%	4	19.0%	1	6.7%	
	Alone	21	18.3%	5	23.8%	4	26.7%	
	Other	1	0.9%	0	0.0%	1	6.7%	
Main medical diagnosis	Angina pectoris	37	32.2%	9	42.9%	6	40.0%	0.773
	Coronary disease	30	26.1%	6	28.6%	2	13.3%	
	Heart valve disease	16	13.9%	1	4.8%	2	13.3%	
	Heart arrhythmia	13	11.3%	2	9.5%	3	20.0%	
	Peripheral arterial disease	8	7.0%	0	0.0%	2	13.3%	
	Heart failure	6	5.2%	2	9.5%	0	0.0%	
	Arterial hypertension	5	4.3%	1	4.8%	0	0.0%	

GDS – Geriatric Depression Scale, N – total number of participants, Q – correlation coefficient

TABLE 3

DIFFERENCES BETWEEN GDS GROUPS IN RELATION TO OTHER QUANTITATIVE VARIABLES: KRUSKAL-WALLIS TEST

Geriatric Depression Scale		N	Minimum	Maximum	Percentiles			Q
					25th	50th (Median)	75th	
Age (years)	≤5 (without depression)	115	50.0	91.0	65.0	69.0	74.0	0.421
	6–9 (suspected depression)	21	59.0	85.0	64.5	71.0	75.0	
	≥10 (indicative depression)	15	60.0	72.0	65.0	69.0	70.0	
GARS	≤5 (without depression)	115	18.0	54.0	18.0	19.0	24.0	0.011
	6–9 (suspected depression)	21	18.0	49.0	19.0	21.0	26.0	
	≥10 (indicative depression)	15	18.0	50.0	18.0	27.0	40.0	
FSSQ	≤5 (without depression)	115	2.0	5.0	4.0	4.8	5.0	<0.001
	6–9 (suspected depression)	21	1.0	5.0	3.4	4.5	4.9	
	≥10 (indicative depression)	15	2.0	5.0	2.8	3.8	4.3	

FSSQ – Duke-UNC Functional Social Support Questionnaire, GARS – Groningen Activity Restriction Scale, GDS – Geriatric Depression Scale, N – total number of participants

Q – correlation coefficient

TABLE 4

CORRELATION COEFFICIENTS BETWEEN THE GRONINGEN ACTIVITY RESTRICTION SCALE (GARS), GERIATRIC DEPRESSION SCALE (GDS) AND FUNCTIONAL SOCIAL SUPPORT QUESTIONNAIRE (FSSQ), SPEARMAN'S CORRELATION COEFFICIENTS

		Gars	FSSQ	GDS
GARS	Correlation Coefficient	1.000	–0.041	0.338
	Q		0.616	0.001
	N	151	151	151
FSSQ	Correlation Coefficient	–0.041	1.000	–0.315
	Q	0.616		<0.001
	N	151	151	151
GDS	Correlation Coefficient	0.338	–0.315	1.000
	Q	<0.001	<0.001	
	N	151	151	151

FSSQ – Duke-UNC Functional Social Support Questionnaire, GARS – Groningen Activity Restriction Scale, GDS – Geriatric Depression Scale, N – total number of participants

TABLE 5

PREDICTION OF INDICATIVE DEPRESSION ON GDS IN RELATION TO OTHER SIGNIFICANT VARIABLES: BINARY LOGISTIC REGRESSION

	THE OR	95% confidence interval		Q
		Lower	Upper	
GARS	1.07	1.01	1.13	0.013
FSSQ	0.40	0.23	0.70	0.001

FSSQ – Duke-UNC Functional Social Support Questionnaire, GARS – Groningen Activity Restriction Scale, GDS – Geriatric Depression Scale, OR – odds ratio, Q – correlation coefficient

(N = 72, 47.68%) and noticing the presence of memory difficulties (N = 48, 31.78%) stand out.

When assessing the availability of social support, subjects usually rated the availability of assistance in case of illness with the maximum number of points (N = 104, 68.87%), which indicates a higher level of satisfaction with this form of support. On the other hand, the lowest number of maximum points was given to questions that assess the possibility of socializing outside the home (N = 75, 49.66%) and receiving advice on important life issues (N = 79, 52.31%).

Discussion

In this study we found a significant presence of depressive symptoms and suspected depression in patients with chronic cardiovascular disease. The occurrence of depression and depressive symptoms in this group of patients is very often investigated in the context of existing risk factors affecting the prevalence of incidental events and the progression of the clinical condition, as well as an increase in total morbidity and mortality[30–34]. However, Hare et al. (2014) emphasize that there are numerous pathogenetic mechanisms that influence the causal association between depression and cardiovascular disease whose impact is not fully clarified, and it is very difficult to say whether chronic cardiovascular disease causes depression or the occurrence of depression contributes to a higher incidence and poorer prognosis of cardiovascular disease. Following this dilemma, in their study Mosovich et al. (2007) present a model by which both diseases share a common root cause, namely the body's exposure to the action of various forms of stress that can essentially cause numerous consequences presented in the form of psychological, inflammatory, immune, traumatic and other reactions. According to this model, local and systemic events, mediated by intracellular immune messengers, cause neurotoxicity and disturbance in serotonin production, which ultimately leads to the onset of depression and increased platelet aggregation[37]. Pathological responses to exposure to stress events are individual in nature and are determined by genetic vulnerability and adopted behaviors[36].

However, the impact of cardiovascular disease on the occurrence of functional limitations in older age is very clearly defined. The analysis of individual domains in the assessment of functional limitations has shown the presence of difficulties in performing those daily activities that require the use of physical strength and endurance, which is substantially limited in patients with cardiovascular disease. According to Forman et al. (2017), ageing causes loss of muscle mass and strength which, combined with cardiovascular, lung and other diseases, causes a decrease in cardiovascular fitness or peak oxygen intake, which produces the need for investing a greater relative physical effort to perform the same daily tasks.

Statistical analysis in our study undoubtedly established an association between the presence of functional limitations and the occurrence of symptoms of depression. Several studies have previously pointed to the fact that the occurrence of depression in old age affects the deterioration of functional status[39–41]. However, the exact mechanisms for the association between depressed mood and a decrease in functional capacity have not been fully investigated.

As possible mediators between the loss of functional capacity and the presence of depressed mood, the following factors are cited in the literature: the loss of morale and hope, presence of pain, lack of sense of control, perception of stress, decrease in social activity and deficit of social support[42–45]. Our study shows that elderly with cardiovascular disease often have a feeling of loss of energy or mental strength needed to perform normal daily activities, as well as tendency to avoid activities that require going outside of their residence, which indirectly affects the reduction of social ties and the emergence of social isolation. Singh and Misra (2009) claim that the feeling of loneliness, along with other physical and mental problems affecting the elderly, creates a basis for the onset of depression. Zdanowicz et al. (2018) explained that depression in elderly can occur as a consequence of deterioration in physical health related to presence of chronic pain or progressive loss of autonomy.

The presence of support and assistance in the immediate environment have significantly potective effects against development and progression of depression in later life[48]. Several studies have previously described the positive effects of social support on alleviating depressive symptoms in older age, whether support was provided by spouses, family and friends or other organized sources of assistance[49–51]. It has been shown that limited access to social support resources together with the occurrence of somatic health problems affects the occurrence of psychological distress in elderly persons[20]. The mechanisms through which social support positively influences the reduction of psychological distress are manifested most likely through the mitigation of susceptibility to negative emotional events, encouraging participation in health promotion measures and social activities, as well as through the availability of practical assistance when necessary[45,52].

It is important to point out that the limited availability of social support have negative impact on the preservation of functional independence in older age. Hajek et al. (2017) confirmed that the lack of social activity, and the availability of emotional and practical support affects the appearance of functional limitations, most often through the dimension of reduced social integration, which is extremely positively associated with the maintenance of physical and cognitive activity. Our study showed a relatively high level of satisfaction with the total access to the sources of social support. However, the analysis of individual domains showed that the respondents expressed the highest level of satisfaction compared to the amount of help available in the stages of illness and weakness, while the lowest level of satisfaction is present at the level of social inclusion and participation in social activities. This

can be observed through the prism of the impact that chronic disease has on the overall functioning of the individual. The fact is that the treatment and adherence to health instructions in a case of chronic illness occupy a primary place that does not diminish but puts in a subordinate position all other personal needs, including the need to socialize and connect with others. These results are in line with data from a study conducted by Brajša-Žganec et al. (2018) which shows that older people generally perceive a lower level of social support, especially those coming from friends and significant others, which can be partly explained by selective narrowing of social network in older age and shifting attention to contacts that are emotionally significant and contributive to the overall sense of well-being and life satisfaction.

It is necessary to remember that the appearance of depressed mood can affect the perception of availability and quality of social support. The study of Patil et al. (2014) found that a lower level of perceived social support negatively correlate with the symptoms of depression, while at the same time no association between the disease and the actual support received was observed. Li et al. (2017) point out that perception of events in a manner that results in positive emotions increases persons self-esteem, self-efficacy, and positive psychological capital. Individuals with depression who consider their social support insufficient or poor tend to develop more severe symptoms of the disease and have less chance for full recovery, but also diminished overall social functioning, where the role of the mediator is played by a sense of loneliness[56].

This study has several limitations. First, the study was conducted among a relatively small sample of patients with cardiovascular diseases which limits wider significance of conclusions made in this study. Second limitation includes the age group of the participants which consisted of mainly younger elderly persons who have not yet experienced the severe impact of chronic illness and functional decline of mental health. Nevertheless, this study provides insight into the domains of psychosocial functioning that are negatively affected by aging and the occurrence of chronic diseases. It is very likely to be expected that the difficulties we have pointed out in this paper are progressing due to the aging process and that they are more significantly present in older age groups.In the end it is neccesary to point out the possible impact of the environment in which this study was conducted. The data was collected during the short period of hospital treatment of participants required by their current medical condition. In this light we can assume that the self-perception of their own physical, mental and social capacity were possibly under the influence of negative emotions arisen from recovery concerns, family separation and demands for future lifestyle adjustments.

The presence of functional limitations in later life leads to a loss of autonomy and independence in everyday life. The negative effect of decrease in functional capacity is further exacerbated by the insufficient or inaccessible support of family, friends, caregivers and the closest environment. Therefore, it is clear that the occurrence of depressive symptoms in old age can be a very common and possibly unrecognized consequence of the mutual interaction of these two categories.

This study aimed to point out the need for a comprehensive approach and recognition of the needs of elderly persons that will encompass the categories of physical, mental and social functioning. We are witnessing a time when the elderly are exposed to numerous health threats. In this light, we emphasize the need for timely identification of especially vulnerable group of elderly whose functioning is endangered due to increasing age, the presence of chronic disease and lack of social support. Our research has shown that there is a strong interaction between presence of different levels of a functional limitations, social support and mental health in old age. In order to prevent the occurrence of mental health problems in old age, primarily depression and similar disorders, most improtant is inclusion of family and caregivers in treatment process. Educational work with family members and caregivers is especially important in order to increase the understanding of health and other issues of the elderly. Providing support in overcoming those functional limitations in everyday life that are associated with progression of chronic illness can have an beneficial effect on mental health. Also, assessment of the level of functional limitations at admission to hospital can provide informations vital for planning measures to prevent and delay further functional decline, such as regular outpatient physical therapy and involvement in group exercises. The findings of this study can serve the purpose of developing practical guidelines for the protection of the mental health of elderly people with chronic diseases by ensuring their better social inclusion, which can help overcome existing functional limitations.

Further research of the mental health domains that are most affected by the presence of chronic health problems and substantial loss of functional capacity is needed. Encouraging the development of programs aimed at delaying functional dependency and providing access to organized sources of social support can be helpful in preventing premature disability, institutionalization, and social exclusion in old age.

Conclusions

Research conducted in this paper showed a significant positive correlation between the occurrence of functional limitations and the development of symptoms of depression among elderly persons with cardiovascular disease. The limited availability of social support has an additional negative impact on the mental state of the person. We emphasize the need for future research on dimensions of mental health that are most vulnerable under the presence of chronic disease, limited functional capacity and reduced social activity.

Acknowledgements

We sincerely thank all study participants for taking part in this study as well as to registered nurses for helping in data collection.

Conflict of interest: The authors declare no conflict of interest.

REFERENCES

1. CHARLES ST, CARSTENSEN LL, Anna Rev Psychol, 61 (2010) 383. doi:10.1146/annurev.psych.093008.100448. – 2. VAN TEIJLINGEN ER, HUMPHRIS G, Psychology and Sociology Applied to Medicine (Elsevier, 2019). – 3. WORLD HEALTH ORGANIZATION, Mental health of older adults, 2017. https://www.who.int/news-room/fact-sheets/detail/mental-health-of-older-adults. – 4. DZIECHCIAŹ M, FILIP R, Ann Agric Environ Med, 21 (2014) 835. doi:10.5604/12321966.1129943. – 5. WORLD HEALTH ORGANIZATION, Promoting mental health: concepts, emerging evidence, practice (WHO, Geneva, 2005). https://apps.who.int/iris/handle/10665/43286. – 6. WESTERHOF GJ, KEYES CL, J Adult Dev, 17 (2010), 110. doi:10.1007/s10804-009-9082-y. – 7. SKOOG I, Can J Psychiatry , 56 (2011) 387. doi: 10.1177/070674371105600702. – 8. ROBINSON KM, Nursing Clinics of North America, 45 (2010) 627. doi:10.1016/j.cnur.2010.06.005. – 9. LOREM GF, SCHIRMER H, WANG CE, EMAUS N, BMJ Open, 7 (2017) e013629. doi:10.1136/bmjopen-2016-013629. – 10. CLAUSEN T, WILSON AO, MOLEBATSI RM, HOLMBOE-OTTESEN G, BMC Public Health, 7 (2007) 144. doi:10.1186/1471-2458-7-144. – 11. HAYS JC, STEFFENS DC, FLINT EP, BOSWORTH HB, GEORGE LK, Am J Psychiatry, 158 (2001) 1850. doi:10.1176/appi.ajp.158.11.1850. – 12. ABDULAZIZ K, PERRY JJ, TALJAARD M, ÉMOND M, LEE JS, WILDING L, SIROIS MJ, BREHAUT J, Can Geriatr J, 19 (2016) 2. doi:10.5770/cgj.19.192. – 13. HAJEK A, KÖNIG HH, PLoS ONE, 11 (2016) e0146967. doi:10.1371/journal.pone.0146967. – 14. KLEINPELL RM, FLETCHER K, JENNINGS BM, Reducing Functional Decline in Hospitalized Elderly. In: HUGHES RG (Ed) Patient Safety and Quality: An Evidence-Based Handbook for Nurses (Agency for Healthcare Research and Quality, Rockville, 2008). – 15. VIRTUOSO JÚNIOR JS, MARTINS CA, ROZA LB, PAULO TRS, RIBEIRO MCL, TRIBESS S, Texto contexto – enferm, 24 (2015) 521. doi:10.1590/0104-07072015001652014. – 16. JEON HS, DUNKLE RE, Res Aging, 31 (2009) 661. doi:10.1177/0164027509343541. – 17. UMBERSON D, MONTEZ JK, J Health Soc Behav, 51 (2010) 54. doi:10.1177/0022146510383501. – 18. BRITO TRP, PAVARINI SCI, Rev Latino-Am Enfermagem, 20 (2012) 677. doi:10.1590/S0104-11692012000400007. – 19. LAROCCA MA, SCOGIN FR, Clin Gerontol, 38 (2015) 131. doi:10.1080/07317115.2014.990598. – 20. BØEN H, DALGARD OS, BJERTNESS E, BMC Geriatr, 12 (2012) 27. doi:10.1186/1471-2318-12-27. – 21. MELCHIORRE MG, CHIATTI C, LAMURA G, TORRES-GONZALES F, STANKUNAS M, LINDERT J, IOANNIDI-KAPOLOU E, BARROS H, MACASSA G, SOARES JFJ, PLoS One, 8 (2013) e54856. doi:10.1371/journal.pone.0054856. – 22. PATIL B, SHETTY N, SUBRAMANYAM A, SHAH H, KAMATH R, PINTO C, J Geriatr Ment Health, 1 (2014) 28. doi:10.4103/2348-9995.141921. – 23. KEMPEN GIJM, MIEDMA I, ORMEL J, MOLENAR W, Social Science and Medicine, 43 (1996) 1601. doi:10.1016/S0277-9536(96)00057-3. – 24. SUURMEIJER TP, DOEGLAS DM, MOUM T, BRIANÇON S, KROL B, SANDERMAN R, GUILLEMIN F, BJELLE A, VAN DER HEUVEL WJA, Am J Public Health, 84 (1994) 1270. doi:10.2105/ajph.84.8.1270. – 25. SHEIKH JI, YESAVAGE JA, Clinical Gerontologist: The Journal of Aging and Mental Health, 5 (1986) 165. doi:10.1300/J018v05n01_09. – 26. FOUNTOULAKIS KN, TSOLAKI M, IACOVIDES A, YESAVAGE J, O'HARA R, KAZIS A, IERODIAKONOU CH, Aging (Milano), 11 (1999) 367. doi:10.1007/BF03339814. – 27. DURMAZ B, SOYSAL P, ELLIDOKUZ H, ISIK AT, North Clin Istanb, 5 (2018) 216. doi: 10.14744/nci.2017.85047. – 28. BROADHEAD WE, GEHLBACH SH, DE GRUY FV & KAPLAN BH, Medical Care, 26 (1988) 709. doi:10.1097/00005650-198807000-00006. – 29. MAS-EXPÓSITO L, AMADOR-CAMPOS JA, GÓMEZ-BENITO J, LALUCAT-JO L, Soc Psychiatry Psychiatr Epidemiol, 48 (2013) 1675. doi:10.1007/s00127-012-0633-3. – 30. ARIYO AA, HAAN M, TANGEN CM, RUTLEDGE JC, CUSHMAN M, DOBS A, FURBERG CD, Circulation, 102 (2000) 1773. doi:10.1161/01.CIR.102.15.1773. – 31. RUGULIES R, American Journal of Preventive Medicine, 23 (2002) 51. doi:10.1016/S0749-3797(02)00439-7. – 32. VAN DER KOOY K, VAN HOUT H, MARWIJK H, MARTEN H, STEHOUWER C, BEEKMAN A, Int J Geriatr Psychiatry, 22 (2007) 613. doi:10.1002/gps.1723. – 33. RAIČ M, Psychiatr Danub, 29 (2017) 770. – 34. ZHANG Y, CHEN Y, MA L, J Clin Neurosci, 47 (2018) 1. doi:10.1016/j.jocn.2017.09.022. – 35. HARE DL, TOUKHSATI SR, JOHANSSON P, JAARSMA T, European Heart Journal, 35 (2014) 1365. doi:10.1093/eurheartj/eht462. – 36. MOSOVICH SA, BOONE RT, REICHENBERG A, BANSILAL S, SHAFFER J, DAHLMAN K, HARVEY PD, FARKOUH ME, Int J Clin Pract, 62 (2008) 423. doi:10.1111/j.1742-1241.2007.01640.x. – 37. PAZ-FILHO G, LICINIO J, WONG ML, Braz J Psychiatry, 32 (2010) 181. doi:10.1590/s1516-44462010000200015. – 38. FORMAN DE, ARENA R, BOXER R, DOLANSKY MA, ENG JJ, FLEG JL, HAYKOWSKY M, JAHANGIR A, KAMINSKY LA, KITZMAN DW, LEWIS EF, MYERS J, REEVES GR, SHEN W-K, Circulation, 135 (2017) e894. doi:10.1161/CIR.0000000000000483. – 39. LENZE EJ, SCHULZ R, MARTIRE LM, ZDANIUK B, GLASS T, KOP WJ, JACKSON SA, REYNOLDS CFIII, J Am Geriatr Soc, 53 (2005) 569. doi:10.1111/j.1532-5415.2005.53202.x. – 40. GOMES CDOS S, MACIEL ÁC, FREIRE ADON, MOREIRA MDEA, RIBEIRO MDEO, GUERRA RO. Arch Gerontol Geriatr, 58 (2014) 214. doi:10.1016/j.archger.2013.10.009. – 41. WILCOX ME, FREIHEIT EA, FARIS P, HOGAN DB, PATTEN SB, ANDERSON T, GHALI WA, KNUTSON M, DEMCHUK A, MAXWELL CJ, BMC Psychiatry, 16 (2016) 277. doi:10.1186/s12888-016-0986-3. – 42. ONISHI J, UMEGAKI H, SUZUKI Y, UEMURA K, KUZUYA M, IGUCHI A, J Geriatr Psychiatry Neurol, 17 (2004) 93. doi:10.1177/0891988704264738. – 43. YANG Y, J Health Soc Behav, 47 (2007) 355. doi:10.1177/002214650604700404. – 44. CHAO S-F, Aging & Mental Health, 18 (2014) 767. doi:10.1080/13607863.2013.878308. – 45. BACKE IF, PATIL GG, NES RB, CLENCH-AAS J, SSM – Population Health, 4 (2018) 153. doi:10.1016/j.ssmph.2017.12.005. – 46. SINGH A, MISRA N, Ind Psychiatry J, 18 (2009) 51. doi:10.4103/0972-6748.57861. – 47. ZDANOWICZ N, REYNAERT C, JACQUES D, LEPIECE B, GODENIR F, PIVONT V, DUBOIS T, Psychiatr Danub, 30 (2018) 401. – 48. BLAZER DG, Aging & Mental Health, 9 (2005) 497. doi:10.1080/13607860500294266. – 49. MURAMATSU N, YIN H, HEDEKER D, Soc SciMed, 70 (2010) 1050. doi:10.1016/j.socscimed.2009.12.005. – 50. TSUBOI H, HIRAI H & KONDO K, Biopsychosoc Med, 10 (2016) 18. doi:10.1186/s13030-016-0064-6. – 51. TARIQ A, BEIHAI T, ABBAS N, ALI S, YAO W, IMRAN M, Int J Environ Res Public Health, 17 (2020) 1485. doi:10.3390/ijerph17051485. – 52. THOITS PA, J Health Soc Behav, 52 (2011) 145. doi:10.1177%2F0022146510395592. – 53. HAJEK A, BRETTSCHNEIDER C, MALLON T, VAN DER LEEDEN C, MAMONE S, WIESE B, WEYERER S, WERLE J, FUCHS A, PENTZEK M, RIEDEL-HELLER SG, STEIN J, BICKEL H, WEEG D, HESER K, WAGNER M, MAIER W, SCHERER M, LUCK T, KÖNIG HH, Age Ageing, 46 (2017) 813. doi:10.1093/ageing/afx012. – 54. BRAJŠA-ŽGANEC A, KALITERNA LIPOVČAN LJ, HANZEC I, Društvena istraživanja, 27 (2018) 47. doi:10.5559/di.27.1.03. – 55. LI M, JIANG X, REN Y, Psychiatr Danub, 29 (2017) 207. – 56. WANG J, MANN F, LLOYD-EVANS B, MA R, JOHNSON S, BMC Psychiatry, 18 (2018) 156. doi:10.1186/s12888-018-1736-535.

D. Babić

Magdalena Clinic for Cardiovascular Diseases, Ljudevita Gaja 2, 49217 Krapinske Toplice, Croatia
E-mail: dijana.babic@magdalena.hr

FUNKCIONALNA NEOVISNOST I SOCIJALNA PODRŠKA KAO MEDIJATORI U OČUVANJU MENTALNOG ZDRAVLJA STARIJIH OSOBA OBOLJELIH OD KRONIČNIH BOLESTI

S A Ž E T A K

Prisutnost kroničnih bolesti i manjak socijalne podrške u starijoj životnoj dobi negativno utječu na ukupni funkcionalni kapacitet osobe. Cilj ovog istraživanja je utvrditi moguću povezanost između slabljenja funkcionalnih sposobnosti i dostupnosti izvora socijalne podrške sa pojavom depresivnog raspoloženja u starijih osoba oboljelih od kroničnih bolesti. Presječno istraživanje obuhvatilo je ukupno 151 osobu oboljelu od kroničnih kardiovaskularnih bolesti u dobi iznad 60 godina. Procjena prisutnosti funkcionalnih ograničenja, dostupnosti izvora socijalne podrške i pojave simptoma depresije korišteni su standardizirani upitnici: Groningen skala za procjenu ograničenja u izvođenju dnevnih aktivnosti (GARS), Duke-UNC upitnik za procjenu dostupnosti funkcionalne socijalne podrške (Duke-UNC FSSQ) i skraćena verzija gerijatrijske skale za procjenu depresije (GDS – short form). Multivarijatni binarni logistički regresijski model korišten je za procjenu multivarijatnog utjecaja značajnih varijabli na uključivanje u indikativnu skupinu depresije. Spearmanov rho koeficijent korišten je za analizu korelacije između GARS-a, GDS-a i FSSQ-a. Ukupan GDS rezultat koji je bio ≥10 (indikativna depresija) ostvarilo je 15 (9,9%) ispitanika, dok je rezultat u rasponu od 6 do 9 (sumnja na depresiju) ostvarilo njih 21 (13,9%). Nije bilo značajne korelacije između rezultata na skali za procjenu depresije i sociodemografskih karakteristika ispitanika. Binarna logistička regresija pokazala je da se s povećanjem GARS-a za jednu jedinicu mogućnost za depresiju povećava za 7% (OR: 1,07, interval pouzdanosti od 95% (CI): 1,01-1,13; P = 0,013), dok pri porastu pojedinačne jedinice na FSSQ upitniku, ta mogućnost pada gotovo 2,5 puta (OR: 0,40, 95% CI: 0,23-0,70; P = 0,001). Razvoj funkcionalnih ograničenja i smanjena razina socijalne potpore povezani su s pojavom depresije. Stvaranje programa koji će potaknuti očuvanje funkcionalne neovisnosti i omogućiti učinkovitu socijalnu podršku može značajno doprinijeti očuvanju mentalnog zdravlja starijih osoba s kroničnim bolestima.