for males and for the elderly in rural area. Therefore, it would be recommended for males and for the elderly in rural areas.

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Author Contributions

Conceived and designed the experiments: YO AS NI HS NY. Performed the experiments: KO HU SA YI HI YK YM JN NN NW TY AN YS MT ET. Analyzed the data: NI HS NY. Contributed reagents/materials/analysis tools: KO HU HO. Wrote the paper: YO AS NY.

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Regular Article

Factors associated with mental well-being of homeless people in Japan

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Aim: This study aimed to determine the frequency of low mental well-being and associated factors among homeless people in Japan.

Methods: A community-based cross-sectional study was conducted. Data were collected through in-person interviews of 423 homeless persons living in two areas of Tokyo. Mental well-being was assessed using the Japanese version of the World Health Organization-Five Well-being Index.

Results: The overall sample comprised 392 (92.7%) men and 31 (7.3%) women. Average age was 60.6 ± 11.9 years. The mean score on the World Health Organization-Five Well-being Index for the 396 participants with no missing values was 11.81 ± 5.35. Based on a cut-off criterion of 12/13, the frequency of low mental well-being among the participants was 57.1%. In multiple logistic regression analyses, the subjective perception of poor health (odds ratio [OR] = 3.88, 95% confidence interval [CI] = 2.32–6.49), lack of perceived emotional social support (OR = 2.77, 95%CI = 1.70–4.49), dwelling without roof (OR = 2.70, 95%CI = 1.47–4.97), and pain (OR = 1.96, 95%CI = 1.12–3.42) were significantly associated with low mental well-being in this population.

Conclusion: The findings suggest that comprehensive intervention programs that provide supportive housing, emotional social support, and health-care services, may be needed to improve the mental well-being of homeless people.

Key words: health-care services, homeless people, mental well-being, social support, supportive housing.

HOMELESSNESS IS A common problem in non-Western as well as Western countries. However, the vast majority of psychiatric research on homeless people has been conducted in Western contexts. We have identified only two studies in Asia – one in South Korea,[1] and one in Japan.[2] Han *et al.*[1] investigated the prevalence of mental disorders among 433 homeless men housed in shelters in two metropolitan cities in South Korea. Lifetime and current prevalence of psychiatric disorders were 60% and 50%, respectively. Morikawa *et al.*[2] investigated the prevalence of mental disorders among 80 homeless persons living on the street in Tokyo and found an overall prevalence of 62.5%. Both these studies suggest high psychiatric comorbidity among the homeless population.

Homeless people frequently suffer from mental health problems. According to a systematic review regarding the prevalence of mental disorders in homeless people in Western countries,[3] 37.9% had alcohol dependence, 12.7% suffered from psychosis, and 11.4% were subject to major depression. However, it has been suggested that homeless people do not differ from non-homeless poor people in terms of the frequency of the DSM-IV diagnosis of severe mental disorders except for substance abuse; but homeless people do show higher levels of psychological

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distress.[4] Studies on the mental health of the homeless population have mainly focused on mental disorders. However, estimating only the extent of mental disorders may not be sufficient to determine the impact of homelessness on mental health. A conceptual framework is needed for integrating the complexity of the distress these individuals experience.

In recent years, studies have suggested that assessment of the quality of life (QOL) is important when working with the homeless population. Homelessness is associated with low perceived QOL.[5] Salize *et al.*[6] found that non-schizophrenic homeless persons reported lower QOL than non-homeless schizophrenic patients receiving community-care services. Kertesz *et al.*[7] suggested that low mental-health-related QOL is associated with the chronicity of homelessness. In addition, the coexistence of homelessness and mental disorders is associated with even lower mental well-being.[8–10]

QOL is defined in diverse ways by different investigators. Lawton[11] presented a QOL model comprising four sectors: behavioral competence, objective environment, perceived QOL, and psychological well-being; interrelationships among the sectors were suggested. Lawton defined psychological well-being as one's overall evaluation of 'self in environment' and regarded psychological well-being as the major criterion of mental health. Lehman[12] defined QOL as 'a subjective matter reflected in a sense of global well-being' and viewed the experience of global well-being as a product of personal characteristics, objective life indicators, and subjective quality of life indicators. Diener[13] described subjective well-being as the general evaluation of one's QOL, and suggested that it reflects the well-being of societies. Thus, the concept of QOL, particularly subjective mental well-being, offers a broad perspective when investigating mental health problems of the homeless population. Though the need for assessing mental well-being is critical in this population, to our knowledge, no such studies in Japan have been reported. Therefore, we aimed to determine the frequency of low mental well-being and associated factors in this population.

METHODS

Participants

The participants were 423 homeless persons, who agreed to participate in the study. The inclusion criteria were as follows: (i) receiving support from non-profit organizations (NPO) offering support programs for homeless people in the survey areas; (ii) being homeless, defined as living and sleeping outside or in any space not designated for shelter (e.g. train stations); or (iii) being marginally homeless, defined as sleeping in a shelter, cheap hotel, motel, or being in a supported housing program during the survey period.

Procedure

Data were collected in a community-based survey of homeless and vulnerably housed people in two areas of Tokyo. The survey period was from 15 December 2010 to 28 February 2011.

Ten staff members of NPO, with experience in working with homeless people and who usually provided the participants with daily support, conducted in-person interviews. The data-collection procedure was supervised by two psychiatrists (the first and second authors of this paper). To ensure confidentiality, the interviews took place at a secure, private location near where the individuals lived.

The study was approved by the Research Ethics Board of Tokyo Metropolitan Institute for Gerontology. Written informed consent was obtained from all participants prior to the interview.

Measures

The questionnaire included items concerning mental well-being, sociodemographic factors, usual living place, and health-related variables.

Mental well-being

Mental well-being was assessed using the Japanese version of the World Health Organization-Five Well-being Index (WHO-5-J);[14,15] a cut-off criterion of 12/13 was used to determine low mental well-being. The WHO-5 is a standardized health-related QOL instrument that has been validated in the context of various mental health problems, including depressive disorders,[16–19] anxiety disorders,[16] psychiatric disorders,[20] and suicidal ideation.[15]

Sociodemographic factors

The sociodemographic factors assessed included age, sex, years of education, marital status, employment status, receipt of public assistance income (welfare

payment or basic pension for those disabled, older, or bereaved), total income per month, and perceived social support. Age was divided into two categories: <65 and ≥65 years. Two categories were used for years of schooling: 0–9 and ≥10, which represented, respectively, compulsory education and beyond compulsory education.

Marital status was ascertained by the question 'Do you have a spouse?' Possible answers were 'yes', 'no', and 'never married'. Those who chose answers other than 'yes' were considered to have no spouse.

Employment status was evaluated based on the response ('yes' or 'no') to the following question: 'Are you working?' Monthly income was divided into above-welfare and below-welfare categories.

Perceived social support (PSS) was evaluated based on 'yes' or 'no' responses to the following five questions: 'Do you have someone to whom you can talk when you are in trouble?' (PSS1); 'Do you have someone to whom you can talk when your physical condition is not good?' (PSS2); 'Do you have someone you feel comfortable being with?' (PSS3); 'Do you have someone who can take care of you when you are ill in bed?' (PSS4); and 'Do you have someone who can take you to the hospital when you do not feel well?' (PSS5). PSS1, PSS2, PSS4, and PSS5 were adopted from a previous study on social support and depression in older adults in a rural community[21] and suicidal ideation in an older urban population.[22] A strong association was found between negative answers to these items and both depression,[21,23] and suicidal ideation.[22]

Usual living place

Living area and living arrangements over the previous 2 weeks were assessed as 'usual living place'.

The two survey areas were labeled Area 1 and Area 2. Area 1 is located near a main railway terminal and has large parks in the vicinity. Area 2 is one of the most renowned destitute districts in Japan.

Living arrangements (LA) were assessed by the question 'Where was your usual living place over the past 2 weeks?' Possible answers were 'an apartment in a supported housing program' (LA1); 'public shelter' (LA2); 'private shelter' (LA3); 'cheap hotel or motel' (LA4); and 'street, city park, train station, river bank, or any other place not designated for shelter' (LA5). These answers were divided into two categories: dwelling with a roof (LA1–4) and dwelling without a roof (LA5).

Health-related variables

The health-related variables assessed included subjective perception of health, history of mental and physical disorders, pain, visual impairment, hearing impairment, and walking ability.

Subjective perception of health was assessed by the question 'How would you describe your current overall health?' Possible answers were 'excellent', 'very good', 'good', 'not good', and 'bad'. Participants who answered 'not good' or 'bad' were considered to have subjectively perceived poor health.

History of mental disorders was evaluated on the basis of responses ('yes' or 'no') to questions concerning a history of depression, schizophrenia, alcoholism, anxiety disorder, insomnia, dementia, or any other mental disorders. Participants who responded that they had had at least one of the above disorders were considered to have a history of mental disorders.

History of physical disorders was evaluated on the basis of responses ('yes' or 'no') to questions concerning a history of stroke, heart disease, hypertension, kidney disease, diabetes mellitus, hyperlipidemia, liver disease, cholelithiasis or cholecystitis, gastric or duodenal ulcer, tuberculosis, pneumonia, bronchial asthma, cancer, arthritis, osteoporosis, lumbar pain, or any other physical disorders. Participants who responded that they had had at least one of the above conditions were considered to have a history of physical disorders.

Pain within the previous 4 weeks was assessed by the question 'Have you had any pain over the past 4 weeks? If so, how intense was the pain?' Possible answers were 'no pain', 'very mild pain', 'mild pain', 'moderate pain', 'severe pain', and 'very severe pain'. Participants who reported moderate to very severe pain were considered as suffering from pain.

Visual impairment was assessed by the question 'Do you feel that you cannot see well?' Possible answers were 'no', 'yes, I have some problems seeing', 'yes, I have a big problem seeing' and 'yes, I cannot see at all'. Those who chose answers other than 'no' were considered to have visual impairment.

Hearing impairment was assessed by the question 'Do you feel that you cannot hear well?' Possible answers were 'no', 'yes, I cannot hear clearly', 'yes, I have a big problem hearing' and 'yes, I cannot hear at all'. Those who chose answers other than 'no' were considered to have hearing impairment.

Walking ability was assessed by the question 'How far can you walk?' Possible answers were 'no

limitation', 'need to rest after walking more than 2 km', '1–2 km', 'less than 1 km', and 'cannot walk at all'. Participants who chose an answer other than 'no limitation' were considered to have gait disturbance.

Statistical analysis

Statistical analyses were performed using PASW Statistics version 18 for Windows (SPSS, Chicago, IL, USA). Baseline characteristics for the 423 study participants were compared using the Student's *t*-test for continuous variables and χ^2-test for categorical variables.

The association between mental well-being and each variable was assessed on the basis of the odds ratio (OR) and 95% confidence intervals (CI). Forward stepwise multiple logistic regression analyses were performed by entering factors significantly associated with low mental well-being in univariate analyses as independent variables.

The significance level was set at $P < 0.05$.

RESULTS

Demographic characteristics

The demographic characteristics of the 423 participants are shown in Table 1. The average age ± SD was 60.6 ± 11.9 years (range = 20–95, median = 62.0). The overall sample comprised 392 (92.7%) men and 31 (7.3%) women. The proportion of those who had no more than compulsory education was 59.1%. During the survey period, 95.7% had no spouse, 74.0% were unemployed, 61.1% had less income than welfare level, and 20.3% were living and sleeping in roofless dwellings. There were some differences between the two survey areas. Participants from Area 1 were younger, had a lower income level, and more often lived and slept in roofless dwellings than those from Area 2.

Distribution of mental well-being scores

Investigation of the distribution of mental well-being scores on the WHO-5-J was restricted to the 396 (93.6%) participants with no missing values. The distribution of the total score of WHO-5-J is shown in Figure 1. The mean score ± SD was 11.81 ± 5.35. When a cut-off criterion of 12/13 was used, the frequency of low mental well-being was 57.1%.

Factors associated with mental well-being

Univariate analysis identified the following as being significantly associated with low mental well-being (Tables 2, 3): higher age; being unemployed; lack of perceived emotional social support (PSS1, PSS2,

Table 1. Demographic data of participants

	Total	Area 1	Area 2	Inter-area comparison
n	423	84	339	
Age	60.6 ± 11.9	55.5 ± 10.1	61.9 ± 12.0	t = –4.52
(range, median)	(20–95, 62.0)	(29–75, 58.0)	(20–95, 63.0)	$P < 0.001$
≥65 years (%)	39.1%	16.7%	45.0%	
Male/female proportion	392/31	81/3	311/28	$\chi^2 = 2.54$
Male (%)	(92.7%)	(96.4%)	(91.7%)	$P = 0.11$
No more than compulsory education	243	42	201	$\chi^2 = 1.78$
	(59.1%)	(52.5%)	(60.7%)	$P = 0.18$
No spouse	396	78	318	$\chi^2 = 0.10$
	(95.7%)	(96.3%)	(95.5%)	$P = 1.00$
Unemployed	311	57	254	$\chi^2 = 2.02$
	(74.0%)	(67.9%)	(75.6%)	$P = 0.16$
Income below that of welfare payments	218	73	145	$\chi^2 = 53.7$
	(61.1%)	(93.6%)	(52.0%)	$P < 0.001$
Roofless dwelling	86	62	24	$\chi^2 = 157.22$
	(20.3%)	(73.8%)	(7.1%)	$P < 0.001$

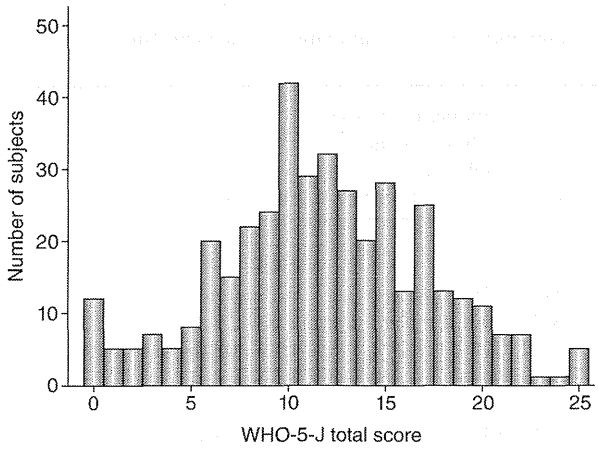

Figure 1. The mean score ± SD of the World Health Organization-Five Well-being Index (WHO-5-J) for the 396 participants who had no missing values was 11.81 ± 5.35. Based on a cut-off criterion of 12/13, the frequency of low mental well-being among the participants was 57.1%.

PSS3); lack of perceived instrumental social support (PSS4, PSS5); living in a roofless dwelling; and subjective perception of poor health, pain, and gait disturbance. Forward stepwise multiple logistic regression analyses were performed by entering the following as independent variables: age; employment status; PSS3 as perceived emotional social support; PSS5 as perceived instrumental social support; living arrangement; and subjective perception of health, pain, and gait disturbance.

The results with the multivariate model showed that the following were significantly associated with low mental well-being (Table 4): subjective perception of poor health (OR = 3.88; 95%CI = 2.32–6.49), lack of perceived emotional social support (PSS3; OR = 2.77; 95%CI = 1.70–4.49), living in roofless dwelling (OR = 2.70; 95%CI = 1.47–4.97), and pain (OR = 1.96; 95%CI = 1.12–3.42).

DISCUSSION

In a national survey of homeless people conducted by the Ministry of Health, Labour and Welfare in Japan, being homeless was defined as living and sleeping outside or in any space not designated for shelter (e.g. city park, river bank, street, train station). The definition of homelessness varies from country to country, and among institutions within the same country. The general definition of homelessness provided by the US Department of Housing and Urban Development[24] includes not only homeless individuals in the literal sense of being without a roof over their heads, but also refers to those who are more likely to be threatened with the loss of, or are unable to continue with, their current accommodation. In the present study, we employed this broader definition of homelessness and included marginally homeless people as participants.

The frequency of low mental well-being among homeless people in the present study was 57.1%. That is almost twice the frequency previously found among community-dwelling older adults in Japan.[25] Although there is a difference in the age distribution between that study and the present investigation, the indications point to a high level of low mental well-being among the homeless population.

The present investigation identified four factors associated with low mental well-being among the study population: (i) subjective perception of poor health; (ii) lack of emotional social support; (iii) living in a dwelling without a roof; and (iv) pain. There are points of similarity between the homeless population and the general older population. In a previous study of ours,[25] factors associated with the low mental well-being of community-dwelling older adults were lack of social support and poor health status. The findings of the present study are consistent with that result, but this study recognizes the importance of the dwelling among the homeless population. Indeed, other studies have found similarities between the needs of the homeless and older adults. It has been suggested that homeless men resemble men in the general population who are 10–20 years older.[26] Other researchers have shown that health problems and the social isolation of homeless persons over age 50 are similar to those of people in the general population who are 65 years or older.[27] It is clear that the problems encountered by homeless people are not unique to them. Thus, the present findings have implications for the development of effective interventions to address the needs not just of the homeless population, but also those of the globally aging general public.

The results of this study indicate a need for interventions that target housing, the lack of emotional social support, and physical health problems. Simply obtaining housing is insufficient to improve the mental well-being of homeless people.[28,29] Previous studies have suggested the need for various services

Table 2. Association between low mental well-being and sociodemographic variables and living arrangement (univariate analysis)

Variables		*n*	Number of subjects with low mental well-being (WHO-5-J < 13)	OR	95%CI	*P*
Sociodemographic factors						
Age	<65	227	143	1.00		
	≥65	148	73	1.75	1.15–2.66	0.009
Sex	Male	367	209	1.00		
	Female	29	17	1.07	0.50–2.31	0.861
Years of education	More than compulsory education	156	84	1.00		
	Compulsory education	229	135	1.23	0.82–1.86	0.321
Marital status	Have spouse	17	7	1.00		
	Have no spouse	373	215	1.94	0.72–5.22	0.187
Employment status	Working	104	50	1.00		
	Not working	290	176	1.67	1.06–2.62	0.026
Receipt of public assistance income (welfare payment, pension)	Yes	260	144	1.00		
	No	125	74	1.18	0.77–1.82	0.455
Monthly income	Above welfare	126	69	1.00		
	Below welfare	209	126	1.25	0.80–1.96	0.321
Perceived emotional social support						
PPS1	Yes	230	116	1.00		
	No	165	109	1.91	1.27–2.89	0.002
PSS2	Yes	252	143	1.00		
	No	127	98	2.14	1.39–3.30	0.001
PSS3	Yes	216	103	1.00		
	No	179	122	2.35	1.55–3.55	<0.001
Perceived instrumental social support						
PSS4	Yes	124	61	1.00		
	No	268	163	1.60	1.04–2.46	0.031
PSS5	Yes	182	89	1.00		
	No	210	135	1.88	1.25–2.82	0.002
Usual living place						
Living arrangement	Dwelling with a roof	311	165	1.00		
	Dwelling without a roof	79	57	2.38	1.39–4.07	0.002

Univariate OR and 95%CI were calculated using logistic regression analysis.
Perceived social support was evaluated by the following questions: 'Do you have someone to whom you can talk if you are in trouble?' (PSS1); 'Do you have someone to whom you can talk if your physical condition is not good?' (PSS2); 'Do you have someone you feel comfortable being with?' (PSS3); 'Do you have someone who can take care of you if you are ill in bed?' (PSS4); and 'Do you have someone who can take you to hospital if you do not feel well?' (PSS5).
95%CI, 95% confidence interval; OR, odds ratio; WHO-5-J, Japanese version of the World Health Organization-Five Well-being Index.

offered in an integrated manner.[30–32] Those services may range from case management to providing meals and could be effective in improving health, housing status, and access to health care.[30] Priebe *et al.* suggested that collaboration and coordination among different services could improve mental health care for homeless people in addition to other socially marginalized groups.[33] The present study indicates that comprehensive interventions, including secure housing, emotional social support, and health-care

Table 3. Association between low mental well-being and health-related variables (univariate analysis)

Variables		*n*	Number of subjects with low mental well-being (WHO-5-J < 13)	OR	95%CI	*P*
Subjective perception of health	Good	229	100	1.00		
	Poor	158	122	4.37	2.78–6.89	<0.001
History of mental disorders	Present	222	131	1.00		
	Absent	102	63	0.89	0.55–1.44	0.638
History of physical disorders	Present	87	54	1.00		
	Absent	237	140	1.13	0.69–1.88	0.626
Pain	Present	119	87	1.00		
	Absent	273	138	2.66	1.66–4.25	<0.001
Visual impairment	Absent	160	99	1.00		
	Present	234	125	1.42	0.94–2.13	0.097
Hearing impairment	Absent	87	55	1.00		
	Present	309	171	1.39	0.85–2.26	0.191
Gait disturbance	Absent	155	104	1.00		
	Present	240	121	2.01	1.32–3.05	0.001

Univariate OR and 95%CI were calculated using logistic regression analysis.
95%CI, 95% confidence interval; OR, odds ratio; WHO-5-J, Japanese version of the World Health Organization-Five Well-being Index.

services, may improve the mental well-being of the homeless population.

Our study has some limitations. It was conducted in two areas in Tokyo. Therefore, cautions should be exercised in generalizing the findings to the homeless population as a whole. Furthermore, the cross-sectional design of this study limits inferences about cause-and-effect correlations between mental well-being and the factors examined. The use of self-reported data is a further limitation; however, it represents a practical way of obtaining much of the information reported. Another limitation is the lack of a structured interview to identify mental disorders and a medical check-up to diagnose physical disorders.

Table 4. Factors associated with low mental well-being (multivariate analysis)

	Step 1			Step 2			Step 3			Step 4		
	OR	95%CI	*P*	OR	95%CI	*P*	OR	95%CI	*P*	OR	95%CI	*P*
Subjective perception of poor health	4.27	2.65–6.89	<0.001	4.32	2.65–7.04	<0.001	4.55	2.75–7.50	<0.001	3.88	2.32–6.49	<0.001
Lack of perceived emotional social support (PSS3)				2.51	1.57–4.00	<0.001	2.65	1.64–4.28	<0.001	2.77	1.70–4.49	<0.001
Dwelling without a roof							2.75	1.51–5.01	0.001	2.70	1.47–4.97	0.001
Pain										1.96	1.12–3.42	0.018

Forward stepwise multiple logistic regression analyses were performed by entering factors significantly associated with low mental well-being in univariate analyses as independent variables.
Perceived social support was evaluated by the following question: 'Do you have someone you feel comfortable being with?' (PSS3).
95%CI, 95% confidence interval; OR, odds ratio.

Our study identified four factors associated with the low mental well-being of homeless persons: (i) inadequate dwelling; (ii) lack of emotional social support; (iii) subjective perception of poor health; and (iv) pain. Comprehensive interventions that work to ameliorate these issues may improve the mental well-being in this population. Further research is needed to determine the impact of comprehensive intervention programs that provide supportive housing, emotional social support, and health-care services among highly disadvantaged populations.

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〈原　著〉

大都市在住高齢者の精神的健康度の分布と関連要因の検討．要介護要支援認定群と非認定群との比較

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要　約　**目的**：大都市在住高齢者を対象として，精神的健康度の分布と，要介護要支援認定群・非認定群それぞれの関連要因について検討した．**方法**：東京都A区在住の65歳以上の全高齢者のうち，4月～9月生まれで，高齢者施設入所中の者を除く3,905人を対象に，郵送法による自記式アンケート調査を行った．アンケートは社会人口統計学的要因と健康関連要因に関する質問項目で構成される．精神的健康度の測度には日本語版WHO-5を用い，13点未満を精神的健康度不良と定義した．**結果**：2,431人から調査票を回収し（回収率63.5%），日本語版WHO-5に欠損値のない1,954人を解析対象とした．日本語版WHO-5の平均±標準偏差は15.61±6.08，精神的健康度不良の出現頻度は29.5%だった．要介護要支援認定の有無により層別化し，多重ロジスティック回帰分析を用いて精神的健康度の関連要因を検討した．認定群では小さいソーシャルサポート・ネットワーク，心疾患，日中の眠気が，非認定群では，低い教育年数，小さいソーシャルサポート・ネットワーク，不良な主観的健康感，日中の眠気，もの忘れの不安が，それぞれ独立に精神的健康度不良と関連した．非認定群の，性による層別分析では，男女いずれも小さいソーシャルサポート・ネットワーク，不良な主観的健康感，もの忘れの不安が精神的健康度不良と独立に関連した．**結論**：地域在住高齢者の精神的健康度の向上のためには，認定群ではソーシャルサポート・ネットワークが小さい人，日中の眠気がある人で，精神保健的介入ニーズを考慮する必要がある．非認定群では，ソーシャルサポート・ネットワークが小さい人，主観的健康感が不良である人，もの忘れの不安がある人において，精神保健的介入ニーズを考慮する必要がある．

Key words：精神的健康度，要介護要支援認定，日本語版WHO-5，大都市在住高齢者

（日老医誌　2012；49：82–89）

緒　言

わが国の高齢者の精神的健康問題は，介護予防の枠組みの中で，うつ病や抑うつ症状の問題に特化して語られることが多い．しかし，高齢者の精神的健康を考える場合に，問題をうつ病に限定することは現実的ではない．国内外の疫学調査によれば，高齢者の1.8%に大うつ病，9.8%に小うつ病，13.5%に臨床的に明らかな抑うつ症状[1)]が認められ，7%に不安障害[2)]，6%に睡眠障害[3)]，0.2%に統合失調症または妄想性障害[4)]が認められると報告されている．認知症については，これまでのわが国の疫学調査に基づいた推計によれば，現在の有病率は65歳以上高齢者の8%程度と推計されている[5)]．さらに，高齢者ではこれらの個々の精神障害がしばしば併存し[6)~8)]，また，診断基準を満たさない閾値下の精神症状もQOLに影響することが指摘されている[9)]．高齢者の精神的健康問題を，うつ病や抑うつ症状に限定することなく，また，障害の併存や閾値下の症状をも捕捉することを考慮するならば，精神的健康度という指標を用いた疫学的調査研究が不可欠となる．

本邦における，精神的健康度を指標に用い，地域在住高齢者を対象とした疫学的調査研究には，川本ら[10)11)]，熊谷ら[12)]，畑山ら[13)]，志水ら[14)]，藤城ら[15)]のものがある．川本らは，精神健康調査票日本語版12項目（GHQ-12）を用いて精神的健康度の関連要因を検討し，介護者であることが精神的健康度に大きく影響すること[10)]，年齢は精神的健康度不良の独立の関連要因ではなく，年齢層によって精神的健康度不良の関連要因が異なること[11)]を報

1）K. Ito, H. Inagaki, T. Okamura, S. Awata：東京都健康長寿医療センター研究所自立促進と介護予防研究チーム
2）K. Ito, K. Shimokado：東京医科歯科大学大学院医歯学総合研究科老化制御学系加齢制御医学血流制御内科学
3）T. Okamura：東京大学大学院医学系研究科脳神経医学専攻臨床神経精神医学
4）T. Okamura：東京都健康長寿医療センター精神科
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告している．熊谷らは，高齢者の主観的精神健康度は身体の健康と強く関連することを報告している[12]．畑山らは，GHQ-30で評価した精神的健康度には，ストレス状態とともにストレス対処能力が強く関係することを報告している[13]．志水らは，GHQ-28によって評価した精神的健康度には，身体的な健康に限定されないライフスタイル全般が関わることを報告している[14]．藤城らは，主観的精神健康感は主観的身体健康感と強く関連することを報告している[15]．

これらの先行研究はいずれも山間部，農村地域，孤立小型離島，および地方都市の地域在住高齢者を対象とした研究であり，大都市在住高齢者を対象とした報告は筆者が知る限りまだない．また，要介護要支援認定の有無別に精神的健康度を検討した報告も筆者が知る限り見当たらない．本研究では，大都市在住高齢者の精神的健康度の分布と，要介護要支援認定の有無別の関連要因を検討した．

方　法

1．対象

対象は，2010年5月現在，東京都A区に在住する65歳以上高齢者のうち，4月から9月生まれで，施設入所中の者を除く3,905人（男性1,539人，女性2,366人）である．

本研究は東京都健康長寿医療センター研究所倫理委員会の承認を得て実施した．本研究の目的，利用，参加の自由について文書で説明し，署名と調査票の返送をもって同意とした．

2．調査方法

調査は，郵送法による自記式アンケートを実施した．アンケートの調査項目には社会人口統計学的要因と健康関連要因に関するものを含めた．

精神的健康度の評価には日本語版World Health Organization Mental Health Well Being Index - five items (WHO-5)[16)~18)]を用い，13点未満を精神的健康度不良と定義した．WHO-5は国際的に広く用いられている精神的健康度の総合評価尺度で，日本語版WHO-5はAwataらにより信頼性，妥当性が確認されている[17)18)]．質問は，「1．明るく，楽しい気分で過ごした」，「2．落ち着いた，リラックスした気分で過ごした」，「3．意欲的で，活動的に過ごした」，「4．ぐっすりと休め，気持ちよくめざめた」，「5．日常生活の中に，興味のあることがたくさんあった」の5項目から成り，それぞれについて最近2週間の状態を「いつも」から「まったくない」の6件法で評価する．ポジティブクエスチョンのみで構成される簡便な測度であり，一般住民を対象として施行する際にも抵抗が少ない[16)]ことが日本語版WHO-5の特徴である．

社会人口統計学的要因については，年齢，性別，教育年数，同居者の有無，ソーシャルサポート・ネットワーク，要介護要支援認定の有無を評価した．ソーシャルサポート・ネットワークの測度には日本語版Lubben Social Network Scale短縮版：LSNS-6[19)~21)]を用い，12点未満をソーシャルサポート・ネットワークが小さいと定義した．日本語版LSNS-6の信頼性と妥当性は栗本らによって確認されている[21)]．

健康関連要因については，主観的健康感，四大疾患の有無（がん，脳卒中，心疾患，糖尿病），疼痛，日中の眠気，もの忘れの不安を評価した．主観的健康感は，現在の健康状態について「非常に健康」から「健康でない」の4件法で回答を求めた．日中の眠気の測度には日本語版Epworth Sleepiness Scale（JESS）[22)23)]を用い，11点以上を日中の眠気ありと定義とした．もの忘れの不安は，「現在，もの忘れに対する不安がありますか？」という問いに対して「ある」「少しある」「ない」の3件法で回答を求めた．

3．分析方法

PASW Statistics version 18 for Windows（SPSS inc. Chicago IL）を用いて，t-検定，χ^2検定，ロジスティック回帰分析を行った．$p<0.05$をもって有意水準とした．

結　果

1．解析対象の特徴

2,431人から有効票を回収し（回収率63.5%），このうち，日本語版WHO-5に欠損値のない1,954人を解析対象とした．解析対象群と解析非対象群の性別，年齢階級別の分布を表1に示す．解析非対象群と比較して，解析対象群では，男性（$\chi^2=17.78$，$p<0.001$），年齢が低い者（$\chi^2=163.72$，$p<0.001$），要介護要支援認定を受けていない者（$\chi^2=101.43$，$p<0.001$）が有意に多かった．

2．精神的健康度の分布と関連要因

精神的健康度の分布について，日本語版WHO-5得点のヒストグラムを図1に示す．平均±標準偏差は15.61±6.08（歪度＝−0.49，尖度＝−0.42），精神的健康度不良の出現頻度は29.5%であった．性別に見た日本語版WHO-5得点の平均±標準偏差は，男性で15.57±6.17，女性で15.63±6.02で有意差を認めず（$t=0.21$，$p=0.833$），精神的健康度不良の出現頻度についても男性30.6%，女性28.8%で有意差を認めなかった（$\chi^2=0.71$，$p=0.418$）．要介護要支援認定の有無別にみると，日本語版WHO-5得点の平均±標準偏差は要介護要支援認定

表1　解析対象群と解析非対象群の性，年齢階級，要介護要支援認定の有無別分布

	解析対象群（n）	解析非対象群（n）	χ^2	p
全体	1,954	477		
男性	779	141		
女性	1,175	336	17.78	＜0.001
65歳～74歳	1,026	115		
75歳～84歳	707	216		
85歳以上	221	146	163.72	＜0.001
要介護要支援非認定	1,713	332		
要介護要支援認定	241	156	101.43	＜0.001

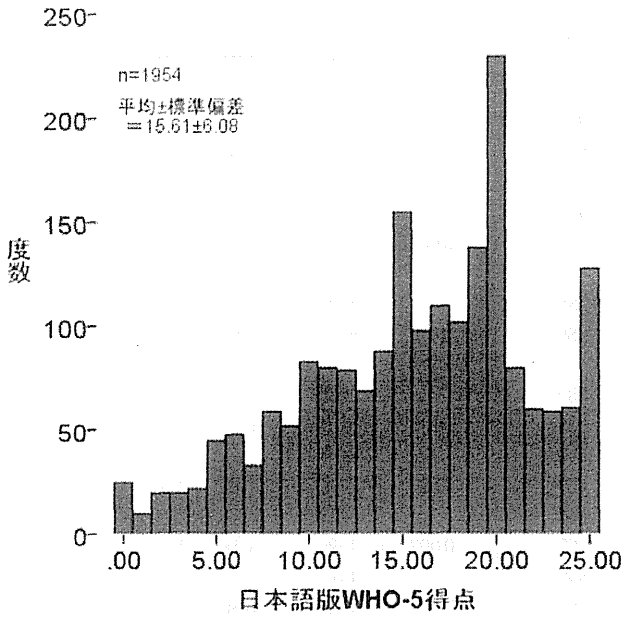

図1　精神的健康度の分布

群（以下認定群，241人）で11.28±6.06，要介護要支援非認定群（以下非認定群，1,713人）で16.22±5.83であり，認定群において有意に低く（t＝－12.25，p＜0.001），精神的健康度不良の出現頻度は，認定群57.7%，非認定群25.5%であり，認定群において有意に高かった（χ^2＝95.77，p＜0.001）．

精神的健康度の関連要因を検討したロジスティック回帰分析の結果を表2に示す．単変量解析では，高い年齢，低い教育年数，独居，小さいソーシャルサポート・ネットワーク，要介護要支援認定を受けていること，不良な主観的健康感，脳卒中，心疾患，強い疼痛，日中の眠気，もの忘れの不安が，精神的健康度不良と有意に関連した．

3．要介護要支援認定の有無別にみた精神的健康度の関連要因

要介護要支援認定を受けていることは，年齢，性別，教育年数，同居者の有無，ソーシャルサポート・ネットワーク，脳卒中，心疾患，強い疼痛，日中の眠気，もの忘れの不安を調整しても，精神的健康度不良と有意に関連した（OR＝1.70，95%CI＝1.07～2.70）．

要介護要支援認定の有無による層別化を行い，単変量解析で検討したすべての要因を強制投入した多重ロジスティック回帰分析の結果を表3に示す．認定群では，小さいソーシャルサポート・ネットワーク，心疾患，日中の眠気が，非認定群では，低い教育年数，小さいソーシャルサポート・ネットワーク，不良な主観的健康感，日中の眠気，もの忘れの不安が，それぞれ独立に精神的健康度不良と関連した．

非認定群について，さらに男女別に層別化して解析を行った．その結果，男女ともに，小さいソーシャルサポート・ネットワーク（男性：OR＝3.14，95%CI＝1.85～5.32，女性：OR＝3.41，95%CI＝2.08～5.59），不良な主観的健康感（男性：OR 5.59，95%CI＝3.20～9.74，女性：OR＝5.95，95%CI＝3.61～9.80），もの忘れの不安（男性：OR＝2.44，95%CI＝1.40～4.26，女性：OR＝2.76，95%CI＝1.57～4.86）が，それぞれ独立に精神的健康度不良と関連した．

考　察

本研究の結果，精神的健康度不良が大都市在住高齢者の約3割に認められ，要介護要支援認定を受けている高齢者ではそれが約6割に達することが明らかになった．要介護状態とは，日常生活動作能力が低下して介護を要する状態，つまり機能障害（disability）と自立の欠如（dependency）が併存した状態と考えられる．本調査の結果は，disabilityとdependencyの併存が高齢者の精神的健康度の低下と強力に関連することを示すものである．このことは，要介護要支援認定を受けている高齢者に対しては，機能障害に対する介護ニーズのみならず，精神保健面での介入ニーズが高頻度に認められる可能性

表2　精神的健康度の関連要因（単変量解析）

		n	精神的健康度不良	p	OR	95% 信頼区間
性別						
	男	779	238		1.00	
	女	1,175	338	0.397	0.91	0.75 ～ 1.11
年齢						
	65 歳～ 74 歳	1,026	258		1.00	
	75 歳～ 84 歳	707	213	0.022	1.28	1.03 ～ 1.58
	85 歳以上	221	105	＜0.001	2.69	1.99 ～ 3.63
教育年数						
	13 年以上	959	229		1.00	
	10 年～ 12 年	711	222	0.001	1.44	1.16 ～ 1.79
	0 ～ 9 年	210	94	＜0.001	2.58	1.89 ～ 3.52
世帯形態						
	同居	1,507	423		1.00	
	独居	438	149	0.016	1.32	1.05 ～ 1.65
ソーシャルサポート・ネットワーク（LSNS）						
	12 点以上	1,385	292		1.00	
	12 点未満	502	265	＜0.001	4.18	3.36 ～ 5.20
要介護・支援認定						
	なし	1,713	437		1.00	
	あり	241	139	＜0.001	3.97	3.01 ～ 5.25
主観的健康観						
	健康である	1,470	288		1.00	
	健康でない	464	280	＜0.001	6.24	4.98 ～ 7.83
治療中の四大疾患						
がん	なし	1,344	439		1.00	
	あり	117	43	0.368	1.19	0.80 ～ 1.77
脳卒中	なし	1,381	443		1.00	
	あり	80	39	0.002	2.01	1.28 ～ 3.16
心疾患	なし	1,304	415		1.00	
	あり	153	67	0.003	1.66	1.18 ～ 2.34
糖尿病	なし	1,226	398		1.00	
	あり	235	84	0.327	1.15	0.86 ～ 1.55
強い疼痛						
	なし	1,548	388		1.00	
	あり	272	143	＜0.001	3.31	2.54 ～ 4.31
日中の眠気（JESS）						
	11 点未満	1,568	399		1.00	
	11 点以上	200	99	＜0.001	2.87	2.12 ～ 3.87
もの忘れの不安						
	ない	633	99		1.00	
	ある	1,308	534	＜0.001	3.05	2.39 ～ 3.89

WHO-5：日本語版 World Health Organization Mental Health Well-being Index - five items，LSNS：日本語版 Lubben Social Network Scale 短縮版（LSNS-6），JESS：日本語版 Epworth Sleepiness Scale

を示している．

要介護要支援認定の有無別の関連要因研究で，第1に注目すべき所見は，日中の眠気が認定群・非認定群のいずれにおいても精神的健康度と有意な関連を認めたことである．日中の眠気と精神的健康度との関係を報告した研究は少ない．Chasens ら[24]は地域在住のII型糖尿病患者を対象とした研究において，日中の眠気が精神的健康度に悪影響を与える可能性を指摘している．日中の覚醒度の低下が高齢者の精神的健康に及ぼす影響については今後のさらなる研究が必要である．

第2に注目すべき所見は，小さいソーシャルサポート・ネットワークが認定群，非認定群のいずれにおいても独立に精神的健康度不良と関連したことである．国内外の横断研究および前向きコホート研究のメタアナリシ

表3　要介護要支援認定群，非認定群別にみた精神的健康度の関連要因（多変量解析）

	要介護要支援認定群　n＝145					要介護要支援非認定群　n＝996				
	n	精神的健康度不良	p	OR	95% 信頼区間	n	精神的健康度不良	p	OR	95% 信頼区間
教育年数										
13年以上						532	116		1.00	
10年～12年						381	122	0.001	1.86	1.30 ～ 2.66
0～9年						83	35	0.011	2.09	1.18 ～ 3.69
ソーシャルサポート・ネットワーク（LSNS）										
12点以上	71	29		1.00		762	161		1.00	
12点未満	74	56	0.018	2.82	1.19 ～ 6.71	234	112	＜0.001	3.28	2.30 ～ 4.68
主観的健康感										
健康である						759	136		1.00	
健康でない						237	137	＜0.001	5.61	3.89 ～ 8.08
治療中の心疾患　なし	123	67		1.00						
あり	22	18	0.042	3.81	1.05 ～ 13.83					
日中の眠気（JESS）										
11点未満	100	50		1.00		908	234		1.00	
11点以上	45	35	0.016	3.41	1.26 ～ 9.23	88	39	0.020	1.84	1.10 ～ 3.10
もの忘れの不安										
ない						322	48		1.00	
ある						674	225	＜0.001	2.52	1.71 ～ 3.72

WHO-5：日本語版 World Health Organization Mental Health Well-being Index - five items，LSNS：日本語版 Lubben Social Network Scale 短縮版（LSNS-6），JESS：日本語版 Epworth Sleepiness Scale

スによって，ソーシャルサポートの不足やソーシャルネットワークが小さいことが高齢者のうつ病や抑うつ症状の独立のリスクファクターであることは明らかにされている[25][26]．本邦の研究においても，小泉ら[27]は，ソーシャルサポートの不足が地域在住高齢者の抑うつ症状と強力に関連することを報告している．しかし，本邦において，標準化された測度を用いてソーシャルサポート・ネットワークと精神的健康度との関連を評価した研究は筆者が調べたかぎりでは見当たらない．抑うつ症状のみならず，地域在住高齢者の精神的健康全般に，ソーシャルサポート・ネットワークが関連していることに留意する必要がある．但し，筆者らが用いたLSNS-6は，日本における高齢者の社会的支援を正確に反映しているのかという点においては検討を要する．同居者の有無，ケアパーソンの有無，及びその介護力など，ソーシャルサポート・ネットワークの他のモダリティについても調査を行う必要があるだろう．

第3に注目すべき点は，非認定群においてのみ，低い教育年数，不良な主観的健康感，もの忘れの不安が，精神的健康度不良の独立の関連要因として抽出され，認定群・非認定群で精神的健康度不良の関連要因が異なったことである．

教育，主観的健康感と精神的健康度について，Judgeら[28]は，精神的健康度と教育は間接的に，精神的健康度と主観的健康感は直接的に関連すると指摘している．本邦において，農村部の地域在住高齢者を対象とした横断研究[29]，地方都市在住高齢者を対象とした横断研究[30]において，主観的健康感と抑うつが強く関連することは報告されている．しかしながら精神的健康度とこれらの要因との関連性を検討した研究は筆者が知る限り見当たらない．

主観的なもの忘れと精神的健康度の関連を検討した先行研究は少ない．Molら[31]は，かかりつけ医受診者から抽出された高齢者集団を対象としたコホート研究において，高齢者のQOLの低下に関連するのは，客観的な認知機能の低下よりも，主観的なもの忘れであると報告している．

非認定群は，機能障害が少なく，かつ自立した高齢者で構成される集団である．このような集団では，実際の機能低下に先立つ不安，特に認知機能低下の不安や，身体的健康の減弱の不安が，精神的健康に重大な影響を与えるのかもしれない．

本研究の長所は，第1に，地域在住高齢者全体を調査対象とする悉皆調査であり，サンプル数も比較的大きく，回収率も63.5％と比較的高いことである．第2に，国際的に広く使用されている精神的健康度の測度を使用し

ているので，諸外国との比較を可能にしている点である．第3に，包括的な説明変数を投入した多変量解析が行われているので，交絡因子を考慮に入れた独立の関連要因の検出を可能にしている．本研究の限界は，第1に，477人（有効回収票の19.6%）において日本語版WHO-5に欠損値が認められ，解析対象群は，解析非対象群に比較して，相対的に年齢が若く，要介護要支援認定を受けていない高齢者が多いことである．このことは，本研究における精神的健康度不良の出現頻度が過少評価されている可能性を示している．第2に，調査法が自記式質問票であるために客観的指標の入手に限界があること，高齢者の精神的健康との関連が推測される経済的要因，ストレスフル・ライフイベント，性格などが考慮されていないことなどがあげられる．第3に，本研究には認知機能障害，日常生活動作能力障害に関する評価項目が含まれていないことがあげられる．しかしながら，要介護認定調査は，生活機能障害，認知機能障害，周辺症状に関する項目で構成されていることから，認定群であることは，認知機能または日常生活動作能力に障害があることを反映するものと考えられる．第4に，認知機能障害を抱える高齢者が，結果に影響を与える可能性があることがあげられる．しかし，本研究では，自記式質問票を返送した者のうち，調査項目に欠損値のない者のみを解析対象としていることから，顕著な認知機能障害を抱える高齢者はある程度除外され，結果に与える影響は少ないものと考えられる．

本研究は特定の大都市自治体に在住する高齢者を対象とする調査であり，結果の一般化には注意を要する．それぞれの研究のデザインが異なり比較することは難しいが，非都市部における精神的健康度の関連要因研究[11]において，年齢，性別，同居者の有無は精神的健康度との関連が認められず，ソーシャルサポートと精神的健康度の関連が認められたという報告があり，本研究の結果とも一致する．今後，高齢者の精神的健康度に及ぼす影響をより包括的に理解していくためには，さまざまな地域における調査データを統合したメタアナリシスが必要であろう．

結　論

精神的健康度不良は都市在住高齢者の約3割に認められ，認定群ではそれが約6割に達する．地域在住高齢者の精神的健康度の向上のためには，認定群では機能障害に対するソーシャルサポート・ネットワークが小さい人，日中の眠気がある人で精神保健面でのアプローチを考慮する必要があり，非認定群では，ソーシャルサポート・ネットワークが小さい人，主観的健康感が不良である人，もの忘れの不安がある人において，精神保健面での介入ニーズを評価する必要がある．

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Factors associated with mental health well-being of urban community-dwelling elders in Japan: Comparison between subjects with and without long-term care insurance certification

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Abstract

Aim: The present study aimed to (1) examine the mental health well-being of urban community-dwelling elderly individuals; and (2) examine factors related to mental health well-being of those with long-term care insurance certification (LTCI+) and those without LTCI certification (LTCI−).

Methods: We conducted a community-based, cross-sectional study that included 3,905 subjects aged 65 years or older living in Tokyo, Japan. A self-administered questionnaire was mailed to each participant. Mental health well-being was assessed using the Japanese version of the World Health Organization Mental Health Wellbeing Index - five items (WHO-5).

Results: Of the 2,431 respondents (response rate, 63.5%), 1,954 who completed WHO-5 were analyzed (241 LTCI+; 1,713 LTCI−). The total score of WHO-5 was 15.61±6.08 among all subjects; when a cut-off criterion of 12/13 was used, the frequency of low mental health well-being was 29.5% among all subjects. In a stratified analysis according to LTCI certification using multivariate logistic regression analysis, small social support network, heart disease, and daytime sleepiness were independently associated with low mental health well-being for the LTCI+ group; low education level, small social support network, low subjective health, daytime sleepiness, and worries about forgetfulness were independently associated with low mental health well-being for the LTCI- group.

Conclusion: To improve mental health well-being of community-dwelling elderly individuals with LTCI certification, attention should be focused on those with small social network or daytime sleepiness. To improve mental health well-being of community-dwelling elderly individuals without LTCI certification, attention should be focused on those with small social network, low subjective health, or worries about forgetfulness.

Key words: *Mental health well-being, Long-term care insurance certification, WHO-5, Urban community-dwelling elders*
(Nippon Ronen Igakkai Zasshi 2012; 49: 82–89)

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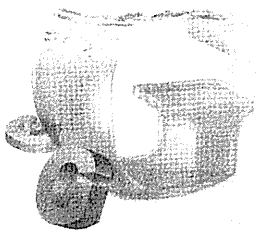
特　集　高齢者の精神科臨床



身体救急における高齢者の精神医学的問題

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抄　録

社会のさらなる高齢化とともに，身体救急と高齢者の問題は今後の重要課題になると思われる．本稿では，高度救命救急医療および一般救急医療における高齢者の精神医学的問題に関して，先行文献を踏まえて現状を記述するとともに若干の考察を加えた．高齢者の，とりわけ認知症を合併する場合の身体救急医療のよりよい体制を構築していくことが必要であるが，さまざまな問題を内包している．

Key words：救急医療，高齢者，認知症，救命救急センター

老年精神医学雑誌 23：1323-1328，2012

はじめに

救急医療は私たちの生命を守る社会の重要な資産であるが，一般高齢者が救急入院することで認知機能が低下することや，認知症高齢者が救急入院することで身体機能の低下等の有害事象がみられることがすでに示されている[4,10]．高齢化が進む私たちの社会をより安全で信頼できるものにするために，身体救急と高齢者の問題はきわめて重要である．

一方，高齢者の精神的健康を脅かす疾患のひとつに認知症が挙げられるが，認知症は多くの心理社会的な葛藤を伴う疾患である．本人がそれまでの人生で築き上げてきたものを徐々に失うという長い経過の疾患であると同時に，とくに家族に対してはかつて頼りになる強い存在であった者が徐々に精神面での機能低下をきたすことを目撃させ，介護負担を強いるという面をもっている．後述のように身体疾患を伴うことが多いが，本人の入院に際しては認知機能低下が重篤であることを理由に，あるいは認知機能低下が軽度であっても治療においては侵襲的手技を行うことを理由に，家族の付き添いを求められたり，事前の身体拘束への同意を求められたりすることもあり，介護者の負担や葛藤を伴うことが多い．

本論では身体救急における高齢者の問題を論じたが，結果的に認知症に関して多く論じることとなった．なお用語に関してであるが，認知症は2004年以前には「痴呆」と呼ばれていたが，本稿では2004年以前の歴史的記載もすべて認知症として混乱を避けた．総説ではあるが，地に足のついた論の展開を目指し，東京大学医学部附属病院救急部のデータに関しても適宜ふれた．

1　制　度

1．身体救急医療

身体救急医療制度は自然状態ではもちろんのこと，自由で競合的な市場原理のもとでも構築され

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