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지역사회 일반 및 취약계층 노인의 건강기능상태와 의료서비스 이용 행태

Functional Health Status and Medical Service Utilization Pattern of General and Vulnerable Older People in Community

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요약

최근 고령 사회에서는 지역사회중심의료로의 전환에 대한 관심이 증가하고 있다. 이에 일반 노인과 취약계층 노인 각각에 대해 기능중심의 건강상태를 파악하고, 이를 기반으로 의료서비스 이용 경험 및 요구 인식에 대해 살펴보는 것은 필요하다. 본 연구는 2016년 11월부터 12월까지 서울시 일개지역에 거주하는 65세 이상 노인을 방문하여 구조화된 설문을 통해 노인의 건강기능 상태와 의료서비스 이용 행태를 파악하였다. 취약계층 노인은 일반 노인보다 인지기능, 영양, 통증, 낙상 등에서 기능적 건강상태 저하를 더 많이 경험하는 것으로 나타났다. 인지기능, 영양과 같은 기능적 건강문제를 경험한 일반 노인은 취약계층보다 유의하게 의료서비스를 이용하는 것으로 나타났다. 한편 취약계층 노인은 통증 건강문제 영역에 있어서는 일반 노인보다 의료서비스 이용의 필요성을 더 유의하게 인식하는 것으로 나타났다. 이는 지역사회 노인을 대상으로 공공 서비스 확대의 방향과 범위를 설정함에 있어, 일반 노인과 취약계층 노인 간에는 차별화된 정책이 설정되어야 함을 알 수 있었다. 또한 취약계층의 의료접근성 향상을 위해서는 경제적 장벽으로 인해 필요한 의료이용의 장애가 초래되지 않도록 공공의료기관의 적극적인 지원이 이루어져야 하겠다.

■ 중심어 : | 건강 | 건강기능상태 | 의료서비스경험 | 의료서비스요구 | 노인 |

Abstract

This study was to investigate the differences of functional health status and medical service experience and needs between general and vulnerable older people in community. This study is a cross-sectional descriptive research. The data obtained through direct visit surveys from November to December 2016. The target population of the study was older people over 65 years old, the final study subjects were 444 older people residing in one district of Seoul. The chi-square test was conducted to confirm the difference in their functional health areas and medical service experiences, and the necessity of medical service utilization in accordance to the social class. In the experience of abnormality in functional health, the vulnerable older people had higher experience in cognitive function, nutrition, hydration, pain, and falling than the general older people. The rate of experience of using medical service to solve the cognitive function problem for general older people was 31.9%, higher than that of the vulnerable older people. In contrast, the medical service utilization needs of the vulnerable older people in the pain management category was significantly higher than that of the general older people. In setting policy of public medical service programs for general and vulnerable older people in community may be differentially developed based on this study. In order to improve the medical accessibility of the vulnerable older people, public medical institutions should be actively supported to overcome obstacles to medical use due to economic barriers.

■ keyword : | Health | Functional Health State | Medical Service Experience | Medical Service Needs | Aged |

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Ⅰ. Introduction

In accordance with the publication from Statistics Korea in 2017, the older people aged 65 or over accounted for 13.8% of total population of Korea. It is expected to exceed the population of 10 million by 2026[1]. As for the older people, medical expenses per capita is 1.8~3.3 times of the overall average in Statistics Indexes on Medical Expenses of Health Insurance Review & Assessment Service, therefore the medical service utilization and rising medical expenses due to the increase in the older people population is becoming a big social issue.

Per every older people, 5.3 people of the adults population is needed for their support, implying that all resources of society are more likely to be concentrated in the elder's population's health and medical services[2]. As the solution, the health care service for the older people needs to be changed from 'hospital-based' to 'community-based' service. It is indicated that the integrated health and welfare service based on a community focusing on a person should be provided beyond the existing hospital-based health and medical service system, including service out of institutions and support for settlement in a community[3].

In accordance to the existing research on the care dimension required by the older people in a community, they were medical care, physical care and cognition care dimensions. When looking into each dimension, 41.1% requested more than 2 compositive care categories[4]. The highest compositive care requested, were medical and physical care. Such compositive care requests among the older people aged over 65 increased to triple needs (medical, physical and cognition care), when the group extended to the older people group aged over 85[4]. In accordance to the analysis on the service utilization by subjects actually using the long-term convalescence service, 82% of the group used both medical and long-term convalescence service rather than using only one among the medical or long-term convalescence service[5].

Meanwhile, increasing poverty rate of the older people and the lack of financial support for older people have been accelerating the rise of the vulnerable older people, along with the older people population. The vulnerable older people refers to a population with socioeconomic vulnerability, including the basic livelihood security recipients, socially or economically vulnerable population with actual income less than 120% less than the cost of living or lower 20% in the health insurance contribution rate, and the older people who lives alone[6]. In accordance with preceding researches, vulnerable older people suffer from chronic diseases more than the general older people and their depression was significantly higher than the general older people[7]. In the analysis on the long-term convalescence recipients, the ratio of the basic livelihood security recipients who stayed in the care facilities for long-term convalescence was relatively higher than that of the general older people. It was because the patients at the facilities did not need to pay for it. The result showed that when the basic livelihood security recipients stayed in a house in a community, their family members' burden for their care increased[8].

As mentioned, although the vulnerable older

people in a community is included in the health risk group and is in need of continuous and preventive care, they often have difficulties to meet the sufficient medical service due to low income and financial difficulty[9]. As the solution, the government has been substantially endeavoring to solve the health equality issue or reduce medical expenses by implementing the visiting health care project since 2007[6], but few studies have been made to reveal the difference between the vulnerable older people with low income which has been quickly increasing and the general older people in terms of functional health status or utilization of medical service. The older a person becomes, the utilization of inpatient service and medical expenses increase[10]. In particular, while it was found that the vulnerable older people had higher demand on medical service and higher dependency on medical service, the research on what the vulnerable older people thought about their utilization of medical service and their need for medical service is rare.

It is obvious that the policy strengthening the security for the older people will be expanded in the future. However, for effective implementation of such policy, it is required to identify the concrete information on the service utilization based on the demands of recipients. Therefore, more detailed and accurate policy can be provided to proper recipients by identifying the function-focused health status of the general older people and the vulnerable older people and analyzing the medical service utilization and awareness on the medical service need.

The purpose of this study is to classify the differences of medical service needs and service utilization on functional health issues, and to identify the functional health status by using the tools focused on functional health. This will be used as a basic data for establishing the direction and scope of public service extension for the older people in the community by identifying the major functional health problems in the older people in the community.

II. Material and Methods

1. Study design

This study used a cross-sectional descriptive design. The data collected through face-to-face survey which was structured for identifying the functional health status and medical service utilization patterns of the older people.

2. Study population

The target population was the older people over the age of 65 in one district of Seoul. To compare the functional health status of each social class, the samples were determined by dividing the general older people and the vulnerable older people. In case of general older people subjects, they were determined by age and regional (per-dong) using quota sampling, and as for the vulnerable age group, the samples were selected from those who agreed with the survey using proportional sampling per regional with age over 65 of the visiting health care recipients of G. Health Center. The subjects who were uncooperative or rejected during the survey was excluded from the study. The total selected was 444 respondents, including 333 general older people and 111 vulnerable older people.

3. Measurements

3.1 Functional health status

This research adopted 48/6 screening geriatric tool, the functional health status assessment tool for the older people, from Hospital Care for Seniors Clinical Care Management Guideline 2014 developed by British Columbia Provincial Seniors Hospital Care Working Group, British Columbia, Canada for evaluating the functional health experience of the older people. For the older people health function status, 5 functions, except medication management (48/6 screening geriatric tool), total of 9 categories were investigated[11]. Five functions include cognitive functioning, nutrition and hydration, bowel and bladder management, pain management and functional mobility.

3.2 Medical service utilization patterns

The questionnaire was asked about the use of medical services (hospitals, clinics, oriental clinics, health centers, pharmacies, etc.) and the necessity of using medical services to solve the abnormality according to their health function and social class. The question 'Have you been utilizing the medical service when felt abnormality in functional health status?' was asked for their utilization of medical service, and the answer was set to 'yes' or 'no'. The question 'Do you think the medical service is necessary to solve the problem of functional health status?' was asked for their awareness on the need of utilization of medical service, and the answer was set to 'yes' or 'no'.

4. Data collection and procedure

For data collection, the surveyors visited the older people living in community at one district in Seoul from Nov. to Dec. 2016. They asked questions and wrote down the responses on the questionnaires. If the question was difficult to understand or the subject was unable to respond to the questionnaire, it was conducted for the subject's guardians. Regular data collection protocol was prepared after the preliminary survey for consistency in the survey method and procedure. Survey method and procedure were demonstrated to the researchers during the training before starting data collection. The external validity related to the research tool was minimized by the survey simulation with researchers.

5. Ethical considerations

This study was approved by the Institutional R eview Board of KUH (IRB No.7001355-201610-HR-142) for the protection of the subjects. Alon g with explaining that there is no disadvantage wether the participant did not participate, that it is possible that participant can stop participa ting in the study any time during the research and guaranteed voluntary participation. Written consent was obtained from all participants.

6. Data analysis

Data analyses were completed using SAS, version 9.2 (SAS Institute, Inc., Cary, NC, USA).

All statistical tests were two-tailed, and a p-value $<.05$ was considered to be statistically significant. All data related to the characteristics of respondents and the medical service utilization patterns were obtained their frequency and percentages through descriptive statistics. Chi-square test was conducted to identify the abnormality experience per social class, the difference in medical service utilization experience and awareness on the

need to use medical service.

Ⅲ. Results

1. General features

[Table 1] summarizes the general characteristics of the study participants.

Women takes up 58.6%, which is more than men, while men take up 41.4%. The age group ratios were shown as 29.1% of 80~84 year olds, 25.0% of 75~79 year olds, 23.9% of 70~74 year olds, and 22.1% of 65~69 year olds. For the educational background, 42.3% graduated the middle or high schools. The monthly household income showing the highest ratio 38.7% was less than one million KRW. 76.1% had no job. 46.8% were married and living with their partner. 29.7% lived alone. Those who experienced diseases in the latest one year were 80.2%, which is the high rate.

Table 1. General characteristics

Variables	Vulnerable older people (N=111) N(%)	General older people (N=333) N(%)	Total (N=444) N(%)	p- value
Gender				
Men	17 (15.3)	167 (50.2)	184 (41.4)	〈.001
Women	94 (84.7)	166 (49.8)	260 (58.6)	
Age (years)				
65-69	12 (10.8)	86 (25.8)	98 (22.1)	〈.001
70-74	20 (18.0)	86 (25.8)	106 (23.9)	
75-79	26 (23.5)	85 (25.6)	111 (25.0)	
80-84	53 (47.7)	76 (22.8)	129 (29.0)	
Education				
Ineducation	50 (45.1)	61 (18.3)	111 (25.0)	〈.001
Elementary school	28 (25.2)	101 (30.3)	129 (29.1)	
Middle/high school	31 (27.9)	157 (47.2)	188 (42.3)	
College school	2 (1.8)	14 (4.2)	16 (3.6)	
Monthly income (KRW)				
No income	12 (10.8)	15 (4.6)	27 (6.1)	〈.001
less than 1 million	96 (86.5)	76 (22.8)	172 (38.7)	
≧1 million , 〈 2 million	3 (2.7)	131 (39.3)	134 (30.2)	
≧2 million	0 (0.0)	111 (33.3)	111 (25.0)	
Occupational status				
Employed	2 (1.8)	104 (31.2)	106 (23.9)	〈.001
Jobless	109 (98.2)	229 (68.8)	338 (76.1)	
Household types				
Living alone	64 (57.7)	68 (20.4)	132 (29.7)	〈.001
married couples	21 (18.9)	187 (56.2)	208 (46.8)	
Living with children	22 (19.8)	60 (18.0)	82 (18.5)	
The others	4 (3.6)	18 (5.4)	22 (5.0)	
Experience of diseases in the latest one year				
Yes	105 (94.6)	251 (75.4)	356 (80.2)	〈.001
No	6 (5.4)	82 (24.6)	88 (19.8)	

2. Functional Health Status

[Table 2] shows the distribution of abnormalities in the health functional status of the 9 categories, 5 functions according to the older people social class.

As a result, the experience rate of sadness and depression in the cognition function category of vulnerable older people reached 38.7%, which was higher than that of general older people reached 21.6%. The vulnerable older people (32.4%) experienced more loss of appetite and reduction of dietary intake than the general older people (20.1%) in nutrition and hydration. Furthermore, the pain and falling risk experience of the vulnerable older people (73.0%) was higher than that of the general older people (18.0%).

Table 2. Functional health status (N=444)

Variables	Vulnerable older people		General older people		p-value
	Yes (n,(%))	No (n,(%))	Yes (n, (%))	No (n,(%))	
Cognitive functioning					
Detorioration of judgement, thinking or memory	43 (38.7)	68 (61.3)	127 (38.1)	206 (61.9)	.910

Sadness and depression	43 (38.7)	68 (61.3)	72 (21.6)	261 (78.4)	<.001
Nutrition and hydration					
Difficulty in swallowing food and water	15 (13.5)	96 (86.5)	31 (9.3)	302 (90.7)	.138*
Loss of weight	31 (27.9)	80 (72.1)	70 (21.0)	263 (79.0)	.133
Loss of appetite and reduction of dietary intake	36 (32.4)	75 (67.6)	67 (20.1)	266 (79.9)	.008
Bowel and bladder management					
Bowel	14 (12.6)	97 (87.4)	23 (6.9)	310 (93.1)	.073*
Bladder	36 (32.4)	75 (67.6)	115 (34.5)	218 (65.5)	.729
Pain management					
Pain	81 (73.0)	30 (27.0)	119 (35.7)	214 (64.3)	<.001
Functional mobility					
Falling	20 (18.0)	91 (82.0)	26 (7.8)	307 (92.2)	.002

* Fisher's exact test

3. Medical Service Utilization Experiences

[Table 3] illustrates the distribution of medical service utilization experience by those who suffered from abnormality to provide solution for functional health problems.

The experience rate of medical utilization on sadness and depression in the cognition function category of general older people reached 31.9%, which was higher than that of vulnerable older people reached 9.3%. The medical service utilization experience of the vulnerable older people was lower than that of the general older people for all 3 subcategories in nutrition and hydration category. In particular, the medical service utilization experience of the vulnerable older people against the difficulty in swallowing food was none. However, for the medical service utilization experience against pain, the vulnerable older people showed higher ratio, 79.0%.

Table 3. Medical service utilization experiences by those who experienced health functional abnormality

Variables	Vulnerable older people		General older people		Total (n)	p-value
	Yes (n,(%))	No (n,(%))	Yes (n,(%))	No (n,(%))		
Cognitive functioning						
Detorioration of judgement, thinking or memory	8 (18.6)	35 (81.4)	46 (36.2)	81 (63.8)	170	.032
Sadness and depression	4 (9.3)	39 (90.7)	23 (31.9)	49 (68.1)	115	.006
Nutrition and hydration						
Difficulty in swallowing food and water	0 (0.0)	15 (100.0)	19 (61.3)	12 (38.7)	46	<.001
Loss of weight	6 (17.6)	28 (82.4)	27 (40.3)	40 (59.7)	101	.037
Loss of appetite and reduction of dietary intake	5 (13.9)	31 (86.1)	24 (35.8)	43 (64.2)	103	.021
Bowel and bladder management						
Bowel	5 (35.7)	9 (64.3)	13 (56.5)	10 (43.5)	37	.313
Bladder	16 (44.4)	20 (55.6)	64 (55.7)	51 (44.3)	151	.257
Pain management						
Pain	64 (79.0)	17 (21.0)	74 (62.2)	45 (37.8)	200	.012
Functional mobility						
Falling	15 (75.0)	5 (25.0)	23 (88.5)	3 (11.5)	46	.267*

* Fisher's exact test

4. Medical Service Utilization Needs

[Table 4] shows the distribution of perceived health service utilizers needing to solve their functional health problem.

The awareness of general older people (80.7%) on the need of medical service utilization for solving difficulty in swallowing food and water in nutrition and hydration category was higher, than that of the vulnerable older people (40.0%). In addition, to solve the problem of urination, 78.3% of the general older people felt the necessity of using medical service and was higher than vulnerable older people with 61.1%. On the contrast, the awareness on the need of

medical service utilization on pain solution of the vulnerable older people (92.6%) in the pain management category was higher than that of the general older people (69.8%).

Table 4. Medical service utilization needs by those who experienced health functional abnormality

Variables	Vulnerable older people		General older people		Total (n)	p-value
	Yes (n,(%))	No (n,(%))	Yes (n,(%))	No (n,(%))		
Cognitive functioning						
Detorioration of judgement, thinking or memory	27 (62.8)	16 (37.2)	74 (58.3)	53 (41.7)	170	.719
Sadness and depression	21 (48.8)	22 (51.2)	45 (62.5)	27 (37.5)	115	.175
Nutrition and hydration						
Difficulty in swallowing food and water	6 (40.0)	9 (60.0)	25 (80.7)	6 (19.3)	46	.009*
Loss of weight	15 (44,1)	19 (55,9)	38 (49.9)	39 (50.1)	101	.370
Loss of appetite and reduction of dietary intake	14 (38.9)	22 (61.1)	38 (56.7)	29 (43.3)	103	.084
Bowel and bladder management						
Bowel	8 (57.1)	6 (42.9)	17 (73.9)	6 (26.1)	37	.470*
Bladder	22 (61.1)	14 (38.9)	90 (78.3)	25 (21.7)	151	.040
Pain management						
Pain	75 (92.6)	6 (7.4)	83 (69.8)	36 (30.2)	200	<.001
Functional mobility						
Falling	18 (90.0)	2 (10.0)	24 (92.3)	2 (7.7)	46	.998*

* Fisher's exact test

Ⅳ. Discussion

The purpose of this study was to identify the general older people and vulnerable older people who are in different environments and their functional health status, in order to set specific policies and directions of public services for older people in the community and studies were made to observe the current situation.

In accordance to the study, the general characteristics of vulnerable older people was distinguished from that of general older people. As for vulnerable older people, there were a lot of females with no occupation of monthly incomes of less than 1 million KRW, a majority of the older people with more than 80 years old, no education background, and lives alone. Those who had experiences of illness within one year accounted for more than 9 people out of 10. These differences became factors that distinguished the two group's functional health status.

In other words, depression, anorexia, experience of falling of vulnerable older people in the respondents who had experienced health problems in categories such as cognition, emotion, excretion, movement and pain in past. were significantly higher than general older people. Especially for pain, approximately 73% of vulnerable older people respondents answered 'yes' to these experiences, which was almost twice more than 35.7% of general older people.

As the concept of health in the older people has a complex definition including disease, factors such as well-being have an important effect on health[12], pain is a physical health problem as functional health problem. In particular, the pain in vulnerable older people is considered to be more serious problem than other functional problems.

The results above are similar to the research indicating that poverty increased health risk factors including individual hygiene, deterioration of nutrition, and increase of stresses, which caused various kinds of diseases, so that ultimately aggravated health problems by limiting the accessibility to medical service and reducing the medical service utilization[13].

The present study is also similar to results of

the vulnerable older people with more serious financial difficulty showed higher prevalence of chronic diseases[14]. And those support that the older people with accompanying diseases tended to be more frail, their frailty was highly correlated to ages and the factor enabling to significantly estimate occurrence and progress of disorders in several studies[15][16].

When the older people in community was asked if they recognized the need of the medical service utilization and whether they actually went to get medical service in case the older people experienced health function problems, the general older people and the vulnerable older people showed each different results.

Although more older adults did not used the medical service in the general older people who recognized deterioration of cognitive function, depression, loss of weight or loss of appetite as a health problems, the medical service utilization rate of those was higher than that of the vulnerable older people. The vulnerable older people more frequently used the medical service when they experienced pain or falling. The medical service utilization rate of the vulnerable older people in pain was significantly higher than that of the general older people.

The factors both directly and indirectly inducing to the medical service utilization include subjective health status, chronic disease, disorder, disease or pain[17]. In particular, the physical diseases or malfunction increasing in the senile stage have been the direct and indirect reason for the older people to approach to the medical service utilization[18]. In accordance to the several researches, the worse the subjective health status of the older people was more they used inpatient and outpatient service. In particular, it is pointed out that the subjective health status recognized by the older people is an important factor for utilization of inpatient service. A research indicated that pain was the most critical factor determining the utilization of outpatient service[19]. Meanwhile, the vulnerable older people generally gives up the treatment for relieving mild symptoms in many cases because of high risk of household economics caused by utilization of medical service[20].

It is generally considered that income is one of factors increasing the accessibility of medical service by facilitating the utilization of medical service. In this study, the vulnerable older people for pain used the medical service in spite of the financial burden caused by medical expenses because pain deteriorated physical functions and they need medication to control pain since pain had the direct impact on a daily life. But they did not used medical service those like loss of appetite or depression. Ii is inferred that these symptoms except pain in the vulnerable older people are considered more one of natural aging symptoms than health funtional problems that is actively requiring medical service because of cost.

Moreover, in the state of health function recognized as a health problem, the general older people evaluated the necessity of the medical service utilization for the difficulty of water and food swallowing and the urination portion significantly higher than the vulnerable older people. Obviously, the need for medical service on pain for vulnerable older people was significantly higher than that of general older people than any other functional health

problems.

In the function of nutrition and excretion, general older people, unlike vulnerable older people, showed the need to use or actively use medical services if they experienced health problems, and the prevalence of prophylactic health services was higher than that of vulnerable older people which indicated that due to less burden of medical service expenses, general older people shows higher utilization than the vulnerable older people.

The previous research subjected to older people[10] reported that the factors influencing on the utilization of medical service were chronic diseases, pain or discomfort as the requisites. Such features were also more noticeable among the vulnerable older people than the general older people in this study. Pain was the functional health problem which the vulnerable older people experience or recognized as the most important symptom than any other functional health status including cognitions, emotions, nutrition and bowel and bladder symptoms. Their experience and need to use the medical service for pain was significantly higher than the general older people.

Therefore, based on the results of this study, we suggest that policy in setting the direction and scope of the expansion of public services for the older people in community should be made differently between the general and the vulnerable older people. The appropriate medical service is important for all people but more important for the vulnerable older people with low economic ability and low level of education.

In general, medical service utilization pattern differs depending on the health level and socio-economic status, and economic level is especially known to be a representative factor that differentiates access to medical services and their consequential effects[21]. Also, the accessibility and usage of medical service are presented as a the most appropriate indicators in evaulating inequality in medical use[22].

In order to improve the accessibility to medical care for the vulnerable, active support from public medical institutions is required to overcome obstacles in the use of necessary medical care due to economic barriers. Accordingly, it seems important to support neighboring resources helping them to determine related to the utilization of medical service, and to promote convenience of use in terms of medical consumers. For this to happen, building the sequential network among institutions including tertiary hospital, local clinics and health centers are necessary.

For the older people living at home after termination of hospitalization at medical institutions or for the vulnerable older people with moderate nursing problems that cannot be solved by home health care services, services including preventive interventions such as exercise and diet in addition to actual medical services should be developed and provided. Furthermore, it is necessary to secure the service embracing the population group beyond individuals from prevention to rehabilitation related to overall factors influencing on the health as well as to support the individual access and provide treatment service in order to improve the health of the vulnerable older people.

Thus, it is required to continue the research to find out the optimum policy to our reality.

Ⅴ. Conculsion

The objectives of this study was to investigate the differences of functional health status and medical service experience and needs between general and vulnerable older people in community. On the basis of the analysis results of this research, it was found that the policy for the vulnerable older people and the general older people should be differentiated when setting the direction and scope of the public service expansion for the older people in a community. The progressive support from the public medical institutions is mandatory for improving the accessibility of the vulnerable older people to the medical service not to make financial barrier interrupt the utilization of required medical service. Therfore, Policy of public medical service programs for general and vulnerable older people in community may be differentially developed.

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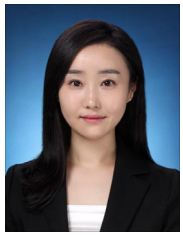

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