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An Awareness and Demand Survey on Agro-Healing Among Adults with Symptoms of Stress

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ABSTRACT

Background and objective: This study conducted an awareness and demand survey on agro-healing for the purpose of preparing basic data for developing agro-healing programs and improving service quality to heal the mental health of people with symptoms of stress.
Methods: In order to conduct this study, a questionnaire consisting of 23 items was developed to investigate the awareness and demand for agro-healing. The survey was conducted online on adults in their 20s and 30s showing symptoms of stress. A total of 225 copies of the questionnaire were collected, and 183 copies were finally used for analysis.
Results: The survey results showed that 66.1% of the respondents were 'not aware at all' and 33.9% were 'aware' of agro-healing. Regarding the experience of participating in agro-healing, 68.3% of the respondents said they had 'no experience' and 31.7% said they had 'experience'. Among the respondents with experience, the most common purpose of participation was 'experience' (31.0%), followed by 'education' (27.6%), 'leisure' (20.7%), 'healing' (10.3%), and 'recreation' (5.1%). The intent to participate in agro-healing was rated on a 5-point Likert scale, and 'forest healing' scored 4.0 points, 'horticultural therapy' 3.8 points, 'animal-assisted therapy' 3.8 points, and 'agricultural work healing' 3.2 points. The points to be improved when using the agro-healing service are 'lack of various promotional contents' (73.8%), 'lack of education and training programs' (13.7%), 'lack of partnership with the government' (7.1%), and 'lack of consideration for the underprivileged' (5.5%). 74.3% of the respondents said it is necessary to implement and systemize agro-healing policies, 21.3% said it was 'moderate', and 4.3% said it was 'unnecessary', indicating that there was high awareness of the need to implement agro-healing service policies.
Conclusion: This study is expected to provide basic data for effective agro-healing services to treat the mental health of people with stress symptoms and be used as a reference material for making policy suggestions to establish an organized agro-healing system.

Keywords: agro-healing, care farm, green care, social farming, symptoms of stress

Introduction

Stress, which is called the source of all diseases, is emerging as a serious problem as industrialization is in progress,

and people today constantly experience stress from everyday life to performance of duties (Lee, 2013). A moderate level of stress acts as a facilitator in achieving goals, but excessive stress serves as a factor that not only causes health

problems and psychological dissatisfaction of individuals but also deteriorates individual and organizational performance (Lee, 2013). Occupational stress is a major cause of stress in adulthood, and constant exposure to such stress may lead to mild cognitive impairment, dementia, and Alzheimer's disease in senescence (Juster et al., 2011; Sindi et al., 2017). It also causes stress-related disorders such as cardiovascular disease, depression, anxiety, and burnout (de Souza-Talarico et al., 2020).

Moreover, the urbanization of modern society has made humans that had been living in nature for a long time to live in the city (Kondo et al., 2018). This change of residence has transformed the living space of people today from a natural to an artificial environment (Bae et al., 2019b). City life has made humans sedentary and chronically stressed (Kabisch et al., 2017), which increased the risk of non-communicable diseases such as diabetes, obesity and depression (Vos et al., 2015). As such, isolation from nature deteriorates psychological health by increasing fatigue and stress for humans (Ulrich et al., 1991).

As psychological problems of humans increase in a rapidly changing society, so is the desire for healing, which is boosting the healing industry for the healing of body and mind (Moon, 2020). This healing business is conducted in various fields such as arts, music, gardening, and dance (Casella, 2021). Activities through contact with nature induce psychological stability, reduce fatigue, and relieve stress of humans (Ulrich, 2002). Urban green space reduces stress, improves the mood, and can contribute to increasing the level of physical activity, and also prevents cardiovascular diseases and mental disorders (Hartig et al., 2014; Triguero-Mas et al., 2015). Horticultural activities were effective in reducing depression and anxiety and improving self-identity (Kim and Park, 2018), while also reducing stress and improving physical functions (Han et al., 2018). In addition, biophilic design has a positive effect on human mood states and improves cognitive functions such as reaction, attention, and working memory (Li et al., 2022).

Recently, as public interest in managing stress, depression, and lifestyle diseases has spread to rural environments and eco-friendly agricultural activities, interest in agro-healing focusing on the healing properties of agriculture is increasing (RDA, 2022). In addition, as the focus of health

and welfare policies has changed from treatment to prevention, agro-healing provides a potential to grow as a new value industry (RDA, 2022). According to Article 2, paragraph 1 of the Act on Research, Development, and Promotion of Healing Agriculture, agro-healing or healing agriculture is defined as "the industry that creates social or economic added value by utilizing various resources of agriculture and agricultural communities, which are used for promoting the recovery, maintenance, and enhancement of people's health, and by conducting related activities". With the 1st Comprehensive Plan for R&D and Promotion of Agro-healing (April 26, 2022), mid- to long-term policies were established for R&D and technology diffusion of agro-healing, improved national health and quality of life, and sustainable growth of agriculture and rural areas (RDA, 2022). Therefore, the steppingstones have been laid out for strategic R&D on agro-healing, creation of an agro-healing ecosystem by spreading development technology and nurturing experts, policy governance and system improvement, and promotion of commercialization.

However, there are overall insufficient basic data related to public awareness and demand for agro-healing, as well as national policies and support measures (Kim et al., 2021; Park et al., 2017). In particular, according to the results of the Mental Health Survey by the Ministry of Health and Welfare, the lifetime prevalence of mental disorders among citizens is 27.8% as of 2021 (MOHW, 2021), and 75% of severe mental illness develops in youth before the age of 25, which is raising the need for early intervention in mental illness among the youth (Kim et al, 2020). Therefore, this study conducted an awareness and demand survey on agro-healing among people with symptoms of stress to establish the basic data for designing agro-healing policy services to heal the mental health of citizens.

Research Methods

Study respondents and survey methods

We conducted an awareness and demand survey on agro-healing to establish the basic data to develop agro-healing programs and improve service quality for the healing of

mental health among people with symptoms of stress. A survey was conducted through an online survey platform for a total of 58 days from May 27, 2021 to July 23, 2021, targeting adults in their 20s and 30s showing symptoms of stress. Subjects were recruited by simple random sampling, and the Perceived Stress Scale (PSS) was used to select the people with symptoms of stress. Total 225 copies of the questionnaire were collected, and 42 with omissions or normal PSS results (13 or below) were excluded, leaving total 183 copies to be used in analysis. This study was approved by the Institutional Review Board (IRB) of Konkuk University (7001355-202104-HR-432).

Assessments

To conduct the awareness and demand survey on agro-healing among adults in their 20-30s showing symptoms of stress, we developed a questionnaire with total 23 survey items. The questionnaire is comprised of 3 items on the awareness of agro-healing and the need for policies, 6 items on analysis of agro-healing service demand, 7 items on agro-healing policy service design, and 7 items on demographic data (Park et al., 2017; Lee et al., 2018; Hassink et al., 2017; Bae et al., 2019a).

Detailed items are as follows. The awareness of agro-healing and the need for policies is comprised of 'awareness', 'participation experience', and 'need for policy (providing agro-healing program)'. Agro-healing service demand analysis is comprised of 'intent to participate', 'person I want to participate with', 'number of times participated (1 year)', 'length of stay (each time), 'number of regular visits (1 month)', and 'preference for each type of agro-healing'. Agro-healing policy service design is comprised of 'evaluation of service use environment', 'inconveniences', 'shortcomings', 'desired effect in service participation', 'need to adopt and institutionalize policies', 'service charging type', and 'priorities in national or local government support'. Demographic data is comprised of 'gender', 'age', 'place of residence', 'education', 'marital status', 'occupation', and 'PSS'.

Analysis method

We analyzed the descriptive statistics on frequency, per-

centage, and standard deviation using Excel (Microsoft Office 2020; Microsoft Corp., Redmond, WA) for demographic information of the respondents and data from the awareness and demand survey on agro-healing data collected in this study.

The PSS is a test that measures the level of stress by evaluating the perceived stress experience of the subject in the past month (Cohen et al., 1983; Lee et al., 2012). This test consists of 10 items rated on a 5-point Likert scale. Items 1, 2, 3, 6, 9, and 10 are positive items rated as '0 = never, 1 = rarely, 2 = sometimes, 3 = often, 4 = very often', and Items 4, 5, 7, and 8 are negative items that are reverse coded. The total scores range from 0-40, with higher scores indicating higher levels of perceived stress. Scores of 13 and below indicate normal, 14-16 indicate mild stress, 17-18 indicate moderate stress, and 19 and above indicate severe stress. The Cronbach's α of the variables used in this study was 0.82, showing a high confidence level.

Results and Discussion

Perceived Stress Scale (PSS) screening results

This study used the PSS to conduct an awareness and demand survey on agro-healing among adults in their 20-30s showing symptoms of stress (Table 1). As a result of the perceived PSS of total 225 copies of the questionnaire collected, it was found that 18.7% were below 13 points, which is the normal range (N = 225). 20.0% were 14-16, which is the mild stress range. 12.4% were 17-18, which is the moderate stress range. 48.9% were 19 and above, which is the severe stress range. Therefore, 183 copies of the questionnaire were used in the final analysis, with the subjects showing mild stress, moderate stress, and severe stress,

Table 1. Perceived Stress Scale (PSS) result (N = 225)

Variable	Category	N	%
Normal	13 points or less	42	18.7
Mild stress	14 to 16 points	45	20.0
Moderate stress	17 to 18 points	28	12.4
Severe stress	19 points or more	110	48.9

excluding the normal range.

Respondents' demographic information

This study was conducted on adults in their 20-30s showing symptoms of stress (Table 2). As for gender, 67.8% were women and 32.2% were men. Most (30.1%) lived in Seoul, followed by Chungcheongbuk-do (27.9%), Gyeonggi-do (16.9%), Daejeon (6.0%), Incheon (4.4%), Jeollabuk-do (3.8%), Chungcheongnam-do (including Sejong) (3.3%), Daegu/Gyeongsangnam-do (1.6%), Gyeongsangbuk-do

Table 2. Demographic information (N = 183)

Variable	Category	N	%
Gender	Male	59	32.2
	Female	124	67.8
Age	20 to 39 years old	183	100
Operating area	Seoul	55	30.1
	Busan	1	0.5
	Daegu	3	1.6
	Incheon	8	4.4
	Daejeon	11	6.0
	Ulsan	1	0.5
	Gyeonggi-do	31	16.9
	Gangwon-do	3	1.6
	Chungcheongbuk-do	51	27.9
	Chungcheongnam-do (including Sejong)	6	3.3
	Jeollabuk-do	7	3.8
	Gyeongsangbuk-do	2	1.1
	Gyeongsangnam-do	3	1.6
	Jeju-do	1	0.5
Education	High school graduate	100	54.6
	University graduate	71	38.8
	Graduate school graduate	12	6.6
Marriage	Single	175	95.6
	Married, Cohabitation	7	3.8
	Etc.	1	0.5
Occupation	Sale/Business/Service work	5	2.7
	General office work	14	7.7
	Production/Technical work	10	5.5
	Education/Professional work	20	11.0
	Student	108	59.0
	Etc.	26	14.2

(1.1%), and Busan/Ulsan/Jeju-do (0.5%). For education, 54.6% were high school graduates, 38.8% were college graduates, and 6.6% were graduate school graduates. Most of the subjects were single (95.6%), followed by married/living together (3.8%) and others (0.5%). By occupation, most were students (59.0%), followed by education/professional work (11.0%), general office work (7.7%), production/technical work (5.5%), and sales/business/service work (2.7%).

Awareness and whether a policy is necessary of agro-healing

As for awareness of agro-healing, 66.1% responded that they are 'not aware at all', and 33.9% responded that they are 'aware' (Table 3). Among those who responded that they are 'aware', most encountered agro-healing by 'mass media' (51.6%), followed by 'institutions related to agriculture/rural areas' (19.4%), and 'agriculture-related events' (11.3%).

According to a previous study, as a result of an awareness survey on agro-healing among agro-healing experts, care farm operators, social welfare experts, and social welfare facility operators, 54.9% responded they are 'not aware at all' of agro-healing, and 45.1% responded they are 'aware' (Bae et al., 2019a). As a result of surveying whether one has experience participating in agro-healing, 68.7% responded they had 'no experience', and 31.3% responded they had 'experience' (Bae et al., 2019a). This indicates that the general public awareness of agro-healing is lower than that of experts related to agro-healing. In addition, as a result of an agro-healing awareness survey conducted on 1,302 general citizens in 2015, 46% responded that they are aware of agro-healing, indicating that the awareness of agro-healing is still low even after 6 years of conducting the survey (Park et al., 2017). Therefore, to promote agro-healing in Korea, it is necessary to establish national-level policies or support measures as well as systematic strategies and publicize agro-healing through all kinds of media.

68.3% of the subjects had no experience participating in agro-healing, and 31.7% had experience. Among those who said they have experience, the goals of participating in agro-healing were 'experience' (31.0%), 'education' (27.6%),

Table 3. Awareness and whether a policy is necessary of agro-healing (N = 183)

Variable	Category	N	%
Recognized or not	Know a lot	7	3.8
	Know a little	55	30.1
	(The path I came to know about agro-healing)		
	Mass media	32	51.6
	Agricultural related event	7	11.3
	Agricultural and rural related institution	12	19.4
	Etc	11	17.8
	Not know at all	121	66.1
Participation or not	Experience	58	31.7
	(Purpose of participation)		
	Healing	6	10.3
	Rest	3	5.1
	Leisure	12	20.7
	Education	16	27.6
	Experience	18	31.0
	Etc	3	5.2
	(Willingness to participate again)		
	Willing to participate again	54	93.1
	No intention to participate again	2	3.4
	Non-response	2	3.4
	No experience	125	68.3
	(Willingness to participate)		
	Willing to participate	103	82.4
	No intention to participate	22	17.6

Variable	Category	Mean (SD)
Policy necessity (About the provision of the agro-healing program)	Agro-healing as a whole	7.6 (2.0)
	Agricultural work healing	7.1 (2.2)
	Horticultural therapy	8.0 (1.8)
	Forest healing	8.2 (1.7)
	Animal-assisted therapy	7.6 (2.1)

'leisure' (20.7%), 'healing' (10.3%), and 'recreation' (5.1%). Moreover, among those who had experience, 93.1% said they had intention to participate again, and 3.4% said they had no intention. Among those who did not have experience, 82.4% said they had intention to participate in agro-healing, and 17.6% said they had no intention.

In a previous study that examined the purpose of operating agro-healing programs among program operators (Gim et al., 2013), education was the first priority, followed by healing. As a result of examining the purpose of operating agro-healing facility among facility operators, experience was first priority, healing was second, and education was third (Kim et al., 2021). Agro-healing services in Korea are mostly offered for purposes such as experience, education, and healing, whereas Europe provides services for healing and education with different types of agro-healing (① focused on healing to provide healing services for those in need, ② focused on employment aligned with the labor market to offer jobs and specialized training for the socially disadvantaged, and ③ focused on education to meet the educational needs of students). In addition, care farming in Europe is aligned with the labor market to induce employment.

As such, each country has a different purpose of agro-healing or care farming, which is why Korea must also discuss the adoption of employment policies in agor-healing (Choi et al, 2021; Gim, 2013; Lee, 2016).

Whether policies are needed to provide agro-healing programs was rated on a 10-point Likert scale, with higher scores indicating that the subject feels a greater policy demand. The survey results showed that the policy demand for providing agro-healing programs was 7.6 points. More specifically, agricultural work healing was 7.1, horticultural therapy was 8.0, forest healing was 8.2, and animal-assisted therapy was 7.6, showing that the policy demand for overall agro-healing intervention was high, especially the policy demand for forest healing and horticultural therapy intervention.

Recently, with regard to agro-healing, advanced countries are actively operating education programs such as R&D, technical support, and expert training focused on agro-healing at the national level. Korea also needs to establish policies to promote agro-healing that creates technological, social, and economic values using various agricultural and rural resources based on the 6th industries. Accordingly, the Act on Research, Development, and Promotion of Healing Agriculture was established in March 4, 2020 (No. 17100) and has been enforced since March 25, 2021. The purpose of this Act is to contribute to the promotion of people's health, the improvement of the quality of life, and sustainable growth of agriculture and agricultural communities by promoting agro-healing. The Act specifies policy matters necessary for R&D and promotion of agro-healing such as R&D of agro-healing, diffusion of programs, commercialization, and training of experts.

To train and secure experts in each field based on the type of agro-healing provided in the survey, Article 2, paragraph 4 of the Act on Research, Development, and Promotion of Healing Agriculture specifies the qualifications of a healing agriculture specialist. It is necessary to develop common agro-healing programs as well as specialized programs in each field to actively promote the qualification course for healing agriculture specialists, which will contribute to the growth and development of agro-healing such as development and R&D of agro-healing programs and increase of jobs.

Agro−healing service demand analysis

The intent to participate by type of agro-healing was rated on a 5-point Likert scale, and detailed items were agricultural work healing, horticultural therapy, forest healing, and animal-assisted therapy (Kim, 2019) (Table 4). The survey results showed that agricultural work healing was 3.2, horticultural therapy was 3.8, forest healing was 4.0, and animal-assisted therapy was 3.8.

The person who the subjects wanted to participate in agro-healing activities with were 'friend or lover' (47.5%), 'family' (27.9%), 'alone' (18.6%), and 'others participating in agro-healing activities' (6.0%). This is similar to the survey conducted on adults in 2015, showing results such as 'family' (63.1%), "friend or lover' (13.7%), 'alone' (10.9%), 'an ill family member I am taking care of' (7.5%), and 'others participating in agro-healing' (3.6%) (Park et al., 2017).

The number of times the subjects want to participate in agro-healing a year was as follows. For agricultural work

Table 4. Agro−healing service demand analysis (N = 183)

Variable	Category	N	%
			Mean (SD)
Willingness to participate	Agricultural work healing		3.2 (1.4)
	Horticultural therapy		3.8 (1.2)
	Forest healing		4.0 (1.2)
	Animal-assisted therapy		3.8 (1.2)
With whom to engage	Alone	34	18.6
	Family	51	27.9
	Friend or Sweetheart	87	47.5
	Others participating	11	6.0

Table 4. (continued)

Variable	Category		N	%
Participation time (per year)	Agricultural work healing	1 time	65	35.5
		2 times	38	20.8
		3 times	25	13.7
		4 times	25	13.7
		5 times	7	3.8
		6 or more times	15	8.2
		Etc	8	4.4
	Horticultural therapy	1 time	33	18.0
		2 times	46	25.1
		3 times	31	16.9
		4 times	32	17.5
		5 times	11	6.0
		6 or more times	23	12.6
		Etc	7	3.8
	Forest healing	1 time	33	18.0
		2 times	38	20.8
		3 times	31	16.9
		4 times	35	19.1
		5 times	19	10.4
		6 or more times	22	12.0
		Etc	5	2.7
	Animal-assisted therapy	1 time	45	24.6
		2 times	32	17.5
		3 times	27	14.8
		4 times	22	12.0
		5 times	17	9.3
		6 or more times	30	16.4
		Etc	10	5.5
Period of stay (1 time)	Agricultural work healing	Less than half a day	76	41.5
		Day	58	31.7
		2-4 days	36	19.7
		5-7 days	4	2.2
		Etc	9	4.9
	Horticultural therapy	Less than half a day	65	35.5
		Day	88	48.1
		2-4 days	23	12.6
		Etc	7	3.8
	Forest healing	Less than half a day	45	24.6
		Day	54	29.5
		2-4 days	74	40.4
		5-7 days	4	2.2
		Etc	6	3.3
	Animal-assisted therapy	Less than half a day	63	34.4
		Day	74	40.4
		2-4 days	33	18.0
		5-7 days	4	2.2
		Etc	9	4.9

Table 4. (continued)

Variable		Category	N	%
Number of regular visits (1 month)	Agricultural work healing	Once (once a month)	136	74.3
		2 times (once 2 weeks)	9	4.9
		4 times (once a week)	8	4.4
		8 times (2 times a week)	2	1.1
		Etc	28	15.3
	Horticultural therapy	Once (once a month)	117	63.9
		2 times (once 2 weeks)	27	14.8
		4 times (once a week)	13	7.1
		8 times (2 times a week)	2	1.1
		Etc	24	13.1
	Forest healing	Once (once a month)	125	68.3
		2 times (once 2 weeks)	23	12.6
		4 times (once a week)	14	7.7
		8 times (2 times a week)	2	1.1
		Etc	19	10.4
	Animal-assisted therapy	Once (once a month)	123	67.2
		2 times (once 2 weeks)	27	14.8
		4 times (once a week)	14	7.7
		8 times (2 times a week)	1	0.5
		Etc	18	9.8

healing, 35.5% responded that they wanted to participate once, and 20.8% responded that they wanted to participate twice. For horticultural therapy, 25.1% said they wanted to participate twice, and 18.0% said once. For forest healing, 25.1% said they wanted to participate twice, and 18.0% said once. For animal-assisted therapy, 24.6% said they wanted to participate once, and 17.5% said twice. Therefore, they responded that once a year is most adequate for agricultural work healing and animal-assisted therapy and twice a year for horticultural therapy and forest healing. According to Park et al. (2017) that surveyed the demand for care farms, most of the subjects responded that they wanted to use twice a year, which is consistent with the results of this study. However, the difference is that this study investigated the desired frequency of participation by classifying the type of agro-healing into detailed item. Based on these results, it is necessary to organize various types of agro-healing programs in care farms.

The desired length of stay for agro-healing each time was as follows. For agricultural work healing, 41.5% wanted to spend less than half a day, and 31.7% wanted to spend a day. For horticultural therapy, 48.1% wanted to spend a day, and 35.5% less than half a day. For forest healing,

40.4% wanted to spend 2-4 days, and 29.5% a day. For animal-assisted therapy, 40.4% wanted to spend a day, and 34.4% less than half a day. Therefore, the most desired length of stay by type of agro-healing was less than half a day each time for agricultural work healing, a day for horticultural therapy and animal-assisted therapy, and 2-4 days for forest healing. In the UK, most users of agro-healing want to spend 5 days (Hine et al., 2008). This difference may be due to the fact that, while there are many short-term programs for education and healing targeting the general public in Korea, Europe implements many long-term programs for the socially disadvantaged.

We surveyed the preference for each intervention activity as the basic data for development of agro-healing programs. Main activities for agricultural work healing, horticultural therapy, forest healing, and animal-assisted therapy were selected, and the preference for each was rated on a 5-point Likert scale (Table 5).

Agricultural work healing activities were classified into creating an animal breeding environment, carpentry, cleaning around the farm, using and managing mechanical equipment and tools, managing firewood, making processed food, and other creative activities. The preference for each de-

Table 5. Preference by type of agro-healing (N = 183)

Variable	Category	Mean (SD)
Agricultural work 6healing	Creating an animal breeding environment	2.6 (1.4)
	Carpentry	3.5 (1.2)
	Cleaning around the farm	2.0 (1.1)
	Management of mechanical equipment and tools	2.5 (1.2)
	Firewood management	2.6 (1.2)
	Making processed food	3.8 (1.1)
	Other creative activities	3.8 (1.1)
Horticultural therapy	Vegetable garden design	3.1 (1.3)
	Creating vegetables garden	3.2 (1.2)
	Cultivating the plant	3.4 (1.3)
	Vegetable garden management	3.3 (1.3)
	Harvesting crop management	3.7 (1.1)
	Making crafts using plants	3.7 (1.2)
	Farm party	3.9 (1.1)
Forest healing	Walking in the forest	4.2 (0.9)
	Meditation in the forest	3.9 (1.2)
	Crafts in the forest	3.9 (1.1)
	Playing in the forest	3.9 (1.1)
	Yoga in the forest	3.6 (1.3)
Animal-assisted therapy	Activity with dog	3.9 (1.3)
	Activity with horse	3.4 (1.4)
	Activity with rabbit	3.3 (1.3)
	Activity with cow/pig	2.8 (1.3)
	Activity with sheep/goat	3.1 (1.3)
	Activity for catching fish	3.0 (1.4)
	Activity for experiencing insect	2.1 (1.3)

tailed activity was 3.8 points for making processed food and other creative activities, 3.5 points for carpentry, 2.6 points for creating an animal breeding environment and managing firewood, 2.5 points for using and managing mechanical equipment and tools, and 2.0 points for cleaning around the farm.

Horticultural therapy activities were classified into designing vegetable gardens, creating vegetable gardens, cultivating plants, managing vegetable gardens, managing harvested crops, making crafts using plants, and farm party. The preference for each detailed activity was 3.9 points for farm party, 3.7 points for managing harvested crops and making crafts using plants, 3.4 points for cultivating plants, 3.3 points for managing vegetable gardens, 3.2 points for creating vegetable gardens, and 3.1 points for

designing vegetable gardens.

Forest healing activities were classified into walking in the forest, meditation in the forest, crafts in the forest, playing in the forest, and yoga in the forest. The preference for each detailed activity was 4.2 points for walking in the forest, 3.9 points for meditation in the forest, crafts in the forest, and playing in the forest, and 3.6 points for yoga in the forest.

Animal-assisted therapy activities were classified into activities with dogs, activities with horses, activities with rabbits, activities with cows/pigs, activities with sheep/goats, catching fish, and insect experience. The preference for each detailed activity was 3.9 points for activities with dogs, 3.4 points for activities with horses, 3.3 points for activities with rabbits, 3.1 points for activities with sheep/goats,

3.0 points for catching fish, 2.8 points for activities with cows/pigs, and 2.1 points for insect experience.

A similar study before had surveyed the preference for virtual care farm programs among general adults and discovered that the preference was highest for making processed food in agricultural work healing, for managing harvested crops in horticultural therapy, for walking in the forest in forest healing, and for activities with dogs in animal-assisted therapy (Koo et al., 2022). This is similar to the results of this study, and the preference for each agro-healing intervention will be used as the basic data in developing agro-healing programs for people with symptoms of stress in the future.

Agro−healing policy service design

Most of the respondents considered that the environment for using agro-healing services was moderate (63.4%), followed by inconvenient (25.7%), convenient (7.7%), and very inconvenient (3.3%) (Table 6). The disadvantages of using agro-healing services were lack of publicity and content (51.4%), lack of accessibility (29.5%), lack of expertise

and financial reasons (3.8%), and lack of time (2.2%). What must be improved when using agro-healing services was lack of various promotional contents (73.8%), lack of education and training programs (13.7%), lack of partnership with the government (7.1%), and lack of consideration for the underprivileged (5.5%).

The agricultural powers of Europe have already captured their national situations and needs and are establishing concepts, purposes, and public support policies for agro-healing, which takes up a major part of their agricultural industry (Hine et al., 2008; Di lacovo and O'Connor, 2009; Lee, 2016). Moreover, in the Netherlands, there are regional-level care farm organizations such as the Association of Green Care Farms in most regions, which not only share information or hold workshops but also invite outside experts for advice (Lee, 2016). Most users of agro-healing services in Korea are living in urban areas. However, most care farms have switched from production farms or experience farms to agro-healing (Kim et al, 2021). Agro-healing services are mostly provided in rural areas since they are agricultural activities, making user access difficult (Roesta

Table 6. Evaluation about agro−healing services use environment (N = 183)

Variable	Category	N	%
Evaluation of service use	Very inconvenient	6	3.3
	Inconvenient	47	25.7
	Moderate	116	63.4
	Convenient	14	7.7
Disadvantages	Lack of accessibility	54	29.5
	Lack of publicity and content	94	51.4
	Lack of expert and specialized institutions	7	3.8
	Lack of financial support	7	3.8
	Lack of time	4	2.2
	Etc	34	18.6
Point to be improved	Lack of education and training programs	25	13.7
	Lack of consideration for the underprivileged	10	5.5
	Lack of various promotional content	135	73.8
	Lack of partnership with government	13	7.1
Expected effect	Promote physical health	9	4.9
	Promote mental health	130	71.0
	Promote social activity	9	4.
	Promote vocational skills and employment opportunities	7	3.8
	Increase in leisure and hobbies	28	15.3

et al, 2010). Meanwhile, the Netherlands adopted agro-healing in rural areas adjacent to the cities, which led to rapid development (Lee, 2016). Therefore, for agro-healing services in Korea, it is necessary to focus on providing publicity and contents and improving accessibility to care farms.

The expected outcomes of participating in agro-healing services are promoting mental health (71.0%), increasing and leisure and hobbies (15.3%), promoting physical health and social activities (4.9%), and promoting vocational skills and employment opportunities (3.8%). According to Lee (2013), 76.5% (208) of all respondents said they are willing to participate in agro-healing programs to reduce job stress, and most of them seemed to be participating with expectations related to promoting and recovering mental health.

74.3% of the respondents said it is necessary to implement and systemize agro-healing policies, showing that a majority of people felt the need to implement agro-healing policies (Table 7). Agro-healing service charges are covered by individual users or paid by the national and local governments (59.6%), provided by local communities (24.6%), covered by the government (13.7%), and covered entirely by individual users (2.2%).

Advanced countries in Europe have already clearly set the concept and purpose of agro-healing, establishing public support policies at the national level (Hine et al., 2008; Di Iacovo and O'Connor, 2009; Dessein and Bock, 2010). The Netherlands improved accessibility to agro-healing services by implementing a system that includes agro-healing in public medical services and paying the medical fees based on the Exceptional Medical Expenses Act (AWBZ) and Persoonsgebonden Budget (PGB) (Hassink et al., 2014).

The service charges for care farms in the Netherlands are covered 60% by subsidies and 20% by the national health insurance, leaving users to pay only about 20% of total charges (Hassink et al., 2007). Belgium is offering 40 euros (€) a day for up to 3 users of care farms at the national level (Goris and Weckhuysen, 2007). The service charges for care farms in the UK were covered mostly by charity (49%) and local governments (33%) (Hine et al., 2008). Therefore, to promote agro-healing in Korea, it is necessary to implement a social security system for agro-healing services as a welfare category and consider expanding the scope of policies so that national health insurance can be applied.

The priorities for national or local government support to promote agro-healing policy services are as follows (Table 8). The first priority (first + second priority) regarding agro-healing policy services was program and content development 29.0% (45.4%), followed by service charge support (including national health insurance) 16.4% (45.9%), establishment of facilities 11.5% (37.7%), and training of agro-healing experts 8.7% (33.7%).

As a result of the survey by Bae et al. (2019b) on the priorities of agro-healing policy services, the first priority

Table 8. Preferred policy priority for revitalizing agro-healing service (N = 183)

Policy	N	%
Program and content development	53 (83)	29.0(45.4)
Establishment of facilities	21 (69)	11.5(37.7)
Service cost support (including national health insurance support)	30 (84)	16.4(45.9)
Training of agro-healing professionals	16 (62)	8.7(33.9)

Table 7. Awareness about haling agricultural policy (N = 183)

Variable	Category	N	%
Necessity for policy introduction and institutionalization	Very necessary	36	19.7
	Necessary	100	54.6
	Moderate	39	21.3
	Unnecessary	7	3.8
	Completely unnecessary	1	0.5
Service cost payment form	Community-focused support	45	24.6
	User's personal burden + National and local government support	109	59.6
	Government-led support	25	13.7
	User's personal burden	4	2.2

(first + second priority) was agro-healing program and content development 39.0% (71.6%), establishment of agro-healing facilities 32.3% (63.1%), agro-healing service charge support 16.6% (35.6%), and training of agro-healing experts 11.7% (28.9%) (Bae et al., 2019b). Therefore, the results of this study show that compared to agro-healing experts, the general public tend to feel a greater need for agro-healing service charge support.

The current Act on Research, Development, and Promotion of Healing Agriculture specifies that agro-healing services can be provided by 1. Developing and implementing agro-healing programs, 2. planning and managing agro-healing services, 3. operating and managing agro-healing services, 4. training and managing human resources in agro-healing, and 5. operating and managing agro-healing resources and facilities by nurturing healing agriculture specialists. In this regard, the local agricultural community development promotion agency must actively promote training for capacity improvement targeting the operators of agro-healing facilities so as to enhance the competencies of healing agriculture specialists and align agro-healing with social services for related workers in medical care institutions and special education.

It is necessary to link agro-healing with social services for workers. Moreover, by stably establishing the Act on Research, Development, and Promotion of Healing Agriculture by actively discovering and applying various policies for job creation using experts and making assignment and employment of healing agriculture specialists mandatory for agricultural community development promotion agencies, agro-healing may generate more demands and show higher growth potential when there are social grounds to meet the improved national awareness and social values.

Conclusion

This study conducted an awareness and demand survey on agro-healing for adults in their 20-30s showing symptoms of stress to develop agro-healing programs to heal their mental health and provide basic data to improve the quality of policy services. The results showed that there is a low level of awareness and experience related to agro-healing, but there was a high level of interest or intention to participate in agro-healing. Agro-healing experts must identify the awareness and demand of people with symptoms of stress to develop and supply suitable agro-healing programs for them, based on which adequate agro-healing services can be provided. Moreover, it is necessary to provide adequate PR and information through community agencies and networks beyond just developing agro-healing programs, improve accessibility, and provide collaborative support such as financial assistance. For continuous boosting of the agro-healing industry and improvement of service quality, there is a need to establish systematic and long-term plans instead of temporary plans and constantly provide policy measures at the national level. This study is expected to be used as basic data useful in developing agro-healing programs for people with symptoms of stress and improving the service quality. Moreover, it can be used as an important reference material to make policy suggestions to establish an organized system for agro-healing. However, since this survey was conducted before the establishment of the 1st Comprehensive Plan for R&D and Promotion of Agro-healing (April 26, 2022), it has failed to reflect the current policy direction. Future studies must conduct an additional survey reflecting the detailed plans of the new Comprehensive Plan for R&D and Promotion of Agro-healing. Furthermore, this study surveyed only 183 adults in their 20-30s showing symptoms of stress. To obtain representativeness of samples, an additional survey must be conducted collecting more samples in addition to increasing the diversity of subjects by age and symptom.

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