



Emotional Impact of Plant-Mediated Activities in the Late Joseon Dynasty: Focusing on 18th-Century Literary Records

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ABSTRACT

Background and objective: Today, "horticulture" has become synonymous with a healthy lifestyle. But when did people start believing that plant-mediated activities were beneficial for mental health and begin engaging in them? While records of garden creation and flower planting can be found in historical texts like the Samguk Sagi and Goryeosa, detailed accounts are scarce, and research into plant-mediated activities within a historical and cultural context is extremely limited.

Methods: This study aimed to investigate the plant-mediated activities that induced positive emotional changes, as documented in records written by literati in the late Joseon Dynasty (18th century), a period when horticultural culture flourished alongside urban development. It also sought to analyze the causal relationship between plant-mediated activities and emotional changes. This research utilized translated documents of classical texts written in Chinese characters. From 245 classical documents in the Korea Classical Literature Translation Institute's comprehensive database, 159 personal literary collections were selected. Among these, 33 documents written by 18th-century literati were chosen, and two additional single-volume publications were added, totaling 35 documents for the study. To extract plant-mediated activities, we established four analytical elements: activity space, activity behavior, and expression of emotional change. We only selected records that included expressions indicating positive emotional changes after a plant-mediated activity.

Results: Our research identified 12 plant-mediated activities that met the analysis criteria. These activities included appreciating flowers and trees, listening to rain fall on plantain leaves, writing on or admiring leaves, and strolling in gardens, all of which contributed to positive emotional changes.

Conclusion: The 18th-century plant-mediated activity records extracted in this study align with previous research findings that plant-mediated activities can influence stress reduction and recovery. However, experimental studies are needed to verify their psychophysiological effects.

Keywords: emotional recovery, plant-mediated activities, horticultural therapy, sound scape, musa basjoo

Introduction

With the increased time spent indoors because of reduced outdoor activities following the COVID-19 pandemic, many people have shown a growing interest in plants. The pandemic has amplified anxiety and stress, leading

to the spread of plant cultivation as a popular cultural phenomenon for anxiety relief and stress reduction, and related industrial systems have been established. In 2022, the Healing Agriculture Act was implemented, and local governments in Korea supported the plant industry by "enacting ordinances on companion plants." Today, 'horticulture' has

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become synonymous with a healthy lifestyle. A garden with a safe fence can serve as a healing tool (Stuart-Smith, 2020). Pachana et al. (2003) stated that the therapeutic use of plants and gardens has restorative effects on people with physical and mental illnesses, Ulrich et al. (1991) found that staying in natural environments and gardens positively stimulates emotional, physical, and cognitive functions. Additionally, studies have reported that interactions with natural elements can reduce stress levels and improve physical functioning in individuals with mental health issues (Han et al., 2018). Numerous studies have established that plant-based activities contribute to positive emotions. When did people begin to consider plant-mediated activities beneficial for mental health? In the Middle Ages, gardens were regarded as places for physical and mental well-being (Daunay, 2010), and the history of gardens can be traced to the 1st century AD (Janick and Paris, 2022). While overseas studies document historical records of garden activities and horticulture for mental health, domestic research on garden activities or plant-mediated activities for mental health in Korea is limited. Since when have plants been used for mental health in Korea? Specifically, what activities were conducted, and when? In which environments a plant-related activities conducted? Were plant-related emotional activities conducted in stressful environments similar to those faced by modern people?

Records of garden creation and flower planting can be found in the SamgukSagi (Historical Records of the Three Kingdoms). In Baekje, flowers were cultivated in the palace in 390 AD (King Jinsa 7). In Silla, the Anapji Pond was built in 674 AD (King Munmu 14), records indicate that flowers were planted in the palace courtyard. Records of flower viewing and banquets can be found in the Goryeosa (History of Goryeo) and Goryeosajeolyo (Abridged History of Goryeo). According to the Goryeosa, King Gongyang “built a pavilion in the garden and planted flowering plants, considering it a place of comfort” (Encyclopedia of Korean Culture). Although records from the Three Kingdoms and Goryeo periods suggest plant-related activities, but detailed records are scarce. However, during the Joseon Dynasty, records indicated that various plant-related activities were specialized and formed a culture. In the Joseon Dynasty, the Jangwonseo (掌苑署), managed flowers and

fruits in the royal garden (Ahn, 2015), and specialized floricultural books appeared. Kang Hee-an (1417_1464) wrote “Yanghwasorok (養花小錄),” the first specialized floricultural book in Korea (Kim and Lee, 2020), and Yu Bak's (1708_1782) “Hwaamsurok (花庵隨錄)” is a notable specialized floricultural book along with “Yanghwasorok” in the history of horticultural culture (Jung, 2003). Seo Yu-gu (1764_1845) recorded cultivation methods for about 50 types of flowering plants in “Yewonji (藝畹志)” (Yeom, 2009). The compilation of several specialized floricultural books suggests an increased interest in plant cultivation and the development of plant cultivation techniques. “Taepyeongseongsi-do,” which is believed to have been written between the late 18th and 19th centuries, depicts shops selling and delivering plants, suggesting that the culture of growing and appreciating plants was active.

This study aims to analyze the causal relationship between plant-mediated activities and emotional changes by investigating activities that induced positive emotional shifts, as recorded in 18th-century literary documents.

Research Methods

Research Scope and Subjects

This study focuses on the 18th century of the late Joseon Dynasty. The 18th century was a period of developing urbanization and flourishing horticultural culture, so it's expected that records of plant-mediated activities from this era would exist. Furthermore, translated versions of Chinese character texts from this time have been published, making documentary research possible.

To investigate records of plant-mediated activities, we first screened the 245 classical translated books from the Korea Classical Comprehensive Database. We excluded specialized collections such as history, Uigwe (royal protocols), and geography, prioritizing individual literary collections. From this initial selection of 162 individual literary collections, we further narrowed our focus to collections by individuals active during the 18th century. For the purpose of this study, an “individual active in the 18th century” is defined as someone who lived for at least 20 years between

Table 1. Research subject materials

1-1 Translated literature data from the institute for translation of Korean classics _ Korean classics database							
No	Title of the material	Author	Author's birth and death year	No	Title of the material	Author	Author's birth and death year
1	Gangjaejeob (剛齋集)	Song Chigyu(宋穉圭)	1759~1838	18	Seonghojeonjeob (星湖全集)	Lee Ik (李瀾)	1681~1763
2	Ganghanjeob (江漢集)	Hwang Gyeongwon (黃景源)	1709~1787	19	Sonjaejeob (遜齋集)	Bak Gwangil (朴光一)	1655~1723
3	Gowundang Pilgi (古芸堂筆記)	Yu Deokgong (柳得恭)	1748~1807	20	Sunamjeob (順菴集)	An Jeongbok (安鼎福)	1712~1791
4	Gusasadangjeob (九思堂集)	Gim Nakhaeng (金樂行)	1708~1766	21	Yeonamjeob (燕巖集)	Bak Jiwon (朴趾源)	1737~1805
5	Nokmunjeob (鹿門集)	Im Seongju	1711~1788	22	Okwojaejeob (玉吾齋集)	Song Sanggi (宋相琦)	1657~1723
6	Dasan Simunjeob (茶山詩文集)	Jeong Yakyong (丁若鏞)	1762~1836	23	Wandang Jeonjeob (阮堂全集)	Gim Jeonghi (金正喜)	1786~1856
7	Damheonseo (湛軒書)	Hong Daeyong (洪大容)	1731~1783	24	Ipjaejeob (立齋集)	Jeong Jongno (鄭宗魯)	1738~1816
8	Daesanjeob (大山集)	Lee Sangjeong (李象靖)	1711~1781	25	Jeongamjeob(貞菴集)	Min Usoo (閔遇洙)	1694~1756
9	Deokchonjeob (德村集)	Yang Deokjung (梁得中)	1665~1742	26	Jonjaejeob (存齋集)	Wi Baekgyu (魏伯珪)	1727~1798
10	Dogokjeob (陶谷集)	Lee Uihyeon (李宜顯)	1669~1745	27	Juksokgwan Yujeob (竹石館遺集)	Seo Yeongbo (徐榮輔)	1759~1816
11	Maesanjeob (梅山集)	Hong Jikpil (洪直弼)	1776~1852	28	Cheongseongjapgi (青城雜記)	Seong Daejung (成大中)	1732~1809
12	Myeonggo Jeonjeob (明臯全集)	Seo Hyongsu (徐滢修)	1725~1779	29	Cheonggianggwan Jeonseo (靑莊館全書)	Lee Deokmu (李德懋)	1741~1793
13	Mumeongjajib (無名子集)	Yun Gi (尹愔)	1741~1826	30	Hagokjeob (霞谷集)	Jeong Jedoo (鄭齊斗)	1649~1736
14	Mihojeob (漢湖集)	Gim Wonhaeng (金元行)	1702~1772	31	Hansujaejip (寒水齋集)	Kwon Sangha (權尙夏)	1641~1721
15	Beonamjeob (樊巖集)	Chae Jaegong (蔡濟恭)	1720~1799	32	Hanpojaejip (寒圃齋集)	Yi Geonmyeong (李健命)	1663~1722
16	Byeongsanjeob (屏山集)	Lee Gwanmyeong (李觀命)	1661~1733	33	Hongjae Jeonseo (弘齋全書)	Jeongjo (正祖)	1752~1800
17	Samsanjeob (三山齋集)	Gim Ian (金履安)	1722~1791				
1-2 Translated materials							
34	Heumyeong(欽英)	Yu Manju (俞晚柱)	1755~1788	Write a Diary. Translated by Kim Hara. Dolbegae. 2015.			
35	Pungsuk Gohyeop (楓石鼓篋集) Uchodanggi	Seo Yu-gu	1764~1845	Prose and Criticism of the Silhak Scholars. Gang Mingju. Bogosabooks.2013			

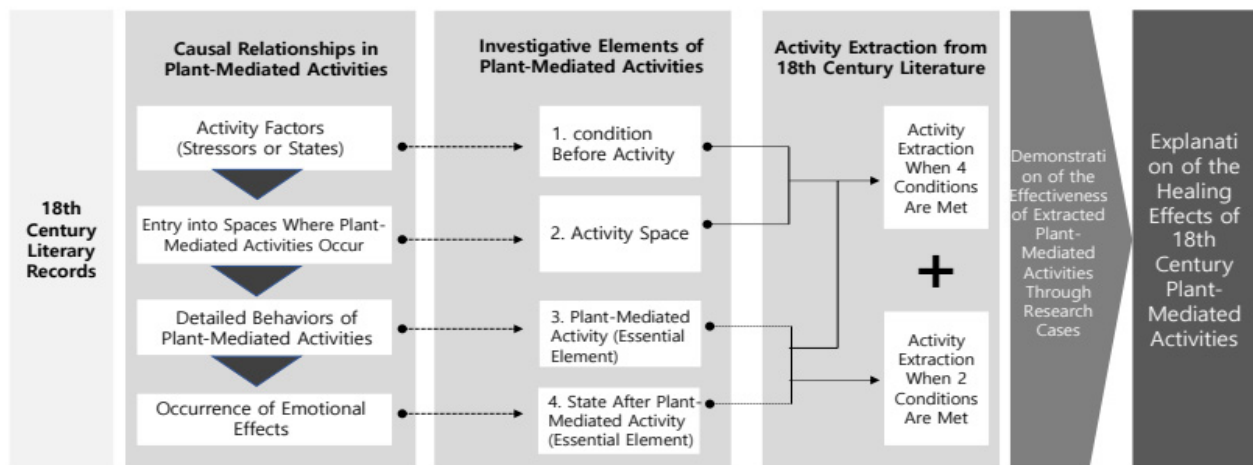


Fig. 1. Research methodology process.

1701 and 1800. This criterion was established because while some individual literary collections were published in the 18th century, others are collections of 18th-century records published in later periods. Each document within these collections comprises various forms, including poems (詩), essays (論), sacrificial writings (祭), travelogues/records (記), prefaces (序), and miscellaneous writings (雜著). Among these, plant-mediated activities were primarily investigated by focusing on records (記) and miscellaneous writings (雜著), as these forms typically contain entries on daily life (Table 1).

Research Methods

In this study, to extract plant-mediated healing activities from 18th-century literary materials, we first established the causal relationship between plant-mediated healing activities and then set three factors forming the causal relationship as extraction elements: “pre-activity state,” “plant-mediated activity,” and “post-activity state.” Among these three investigation elements, “plant-mediated activity” and “post-activity state,” which can reveal the effects of the activity, are considered essential. If all three elements are not met in the investigation, but two essential elements are met, the content was included in the extraction (Fig. 1).

Seo Yu-gu was bedridden for lung disease. Although the term “room” was not used, it is evident that Seo Yu-gu was inside a room. While lying down, Seo Yu-gu heard

raindrops suddenly hitting *Musa basjoo*. The sound of rain falling heavily on the lush leaves, like scattered beads, made him listen attentively for a long time.

After listening to the sound of raindrops hitting *Musa basjoo* for an extended period, he reported feeling refreshed in mind and clear in spirit, indicating an improvement in his condition. In this context, the “pre-plant-mediated activity state” can be seen as “bedridden with a lung disease,” and the “plant-mediated activity” can be seen as “listening to the sound of rain hitting the banana tree leaves.” The activity space is “inside the room,” and the “post-activity state” is “feeling refreshed in mind and clear in spirit, indicating an improvement in his condition.” The plant-mediated activities were extracted in this manner (Table 2).

Results and Discussion

Results

The activities extracted after investigating the contents of the 35 materials, are shown in Table 3. Twelve activities were extracted, but those without records of the state after the plant-mediated activity, that is, emotions, mood, or behaviors that could be inferred, were excluded from the extraction.

The states before plant-mediated activities were, extracted from the literature, and classified into three types.

Table 2. Extraction of plant-mediated activities from 18th century literature

Pungsuk Gohyeop collection Volume 2, Uchodanggi, Seo Yu-gu / Literary text	Extract point of plant-mediated activity
<p>“I was bedridden with consumption, sweating profusely, drifting in and out of consciousness as if asleep. This happened repeatedly. Then, suddenly, I heard a thumping sound from between the flagstones, and a cool sensation brushed against my face. I got up and saw dark clouds gathering, and raindrops suddenly struck the Musa basjoo, sounding like beads scattering and falling: tap, tap, tok, tok. As I quietly listened to the sound for a while, my mind felt refreshed, my spirit brightened, and I realized my illness was being cured.”</p>	<p>[Pre-activity state] Bedridden with a lung ailment</p> <p>[Plant-mediated activity] Listening attentively to the sound of rain hitting Musa basjoo for a long time</p> <p>[Activity space] ▶ In the room</p> <p>[Plant-mediated activity] Observing plants and listening to the rain falling Musa basjoo</p> <p>[Post-activity state] realized my illness was being cured</p>

Table 3. List of plant-mediated activities

No	Author	Title of the literature	Pre-activity condition	Activity space	Plant-mediated activity	Post-activity condition
1	Bak Jiwon	Yeonamjeob Hapungjukrodanggi	My chest felt tight, my thoughts were scattered, my tanggeon lowered involuntarily, and my eyelids grew heavy	in the room	Hearing the sound of rain pattering on Musa basjoo leaves	A sudden mental refresh
2	Seo Yu-gu	Pungseokgohyeopji p. Volume 2 Uchodanggi	I was bedridden with consumption, sweating profusely, drifting in and out of consciousness as if asleep.	in the room	raindrops suddenly struck the Musa basjoo, sounding like beads scattering and falling: tap, tap, tok, tok. As I quietly listened to the sound for a while	my mind felt refreshed, my spirit brightened, and I realized my illness was being cured.
3	Seo Hyongsu	Myeonggo Jeonjeob Volume 8		in the room	When the rain falls, I lie beneath my window, listening to the gentle drumming on the Musa basjoo leaves	I enjoyed it.
4	Yu Deokgong	Gowundang Pilgi Volume 2 (Why flowers are so lovely)	A few years ago, I developed a passion for planting flowering trees, and I've since transformed the area in front of my study into a vibrant flower garden. After getting off work	Palace > garden	As soon as I took off my official uniform, I strolled around the flowering trees, reciting poetry	I was unaware of the guests' arrival
5	Yu Deokgong	Gowundang Pilgi, Volume 5 Flower viewing and fishing in the year of Eulmyo	On March 9th, Chasu (Park Je-ga) was working on the compilation of "Jeongni Tonggo Doseol" at the jobang of the main camp (Jangyongyeong)	jobang > Palace garden	Arriving at Mangchunjeo, I enjoyed viewing the azaleas	Looking back on it, it was as if I had wandered in a dream, so enchanting was the experience
6	Lee Deokmu	Cheongjanggwon Jeonseo, Volume 4 Yeongcheo Mungo, Volume 2		garden	Going under a tree, I pick up a brush, pluck a leaf, and write whatever comes to mind.	Suddenly looking back, I chuckle to myself.

Table 3. (continued)

No	Author	Title of the literature	Pre-activity condition	Activity space	Plant-mediated activity	Post-activity condition
7	Lee Deokmu	Cheongjanggwan Jeonseo Volume 6 Gwandok Ilgi in Yeongcheo Japgo 2	Due to frequent illnesses, I'm always lying down	in the room > garden	Opening the south-facing window, I saw that most of the trees on Jongnam Mountain were yellowish, and there were many red trees as well. Forcing myself to get up, I strolled around the garden	It evoked people's sorrow and aroused their spirit. While I was blankly intoxicated, without speaking or laughing, my illness suddenly vanished somewhere
8	Yu Manju	Heumyeong September 20, 1785	When my mind is troubled	garden	I utter the words, 'Empty forest, yellow leaves.' At dusk in late autumn, a deciduous tree, swayed by the wind, slowly sheds a few yellow leaves. I pick one up and examine it.	My mind settles down
9	Yu Manju	Heumyeong May 27, 1785	His words turned my stomach.	garden	Seeing the slender crescent moon, I entered the front yard of the main hall. Noticing the pine trees with their shadows cast upon them.	It feels like I've met a friend I haven't seen for ages
10	Yu Manju	Heumyeong April 11, 1785		in the room	A bright moon hangs in the sky, ice-like flowers are in the yard, and a newly acquired book rests on the desk.	My heart and mind seem to be shining brightly. I feel like I'm enjoying pure bliss and want to boast about it
11	Jeong Yakyong	Dasan Simunjeob volume 13 Preface to a Poem Reciting Chrysanthemum Shadows	After retiring from the morning assembly	in the room	Arrange the chrysanthemums, placing them away from the wall, then light a candle to brighten them and appreciate their shadows.	He shouted loudly, rejoiced as if about to leap, clapped his hands on his knees, and exclaimed in admiration, "How wondrous! This is truly the most magnificent scenery under all of heaven!"
12	Jeong Yakyong	Dasan Simunjeob volume 14 Junglanhwamokgi	(No record)	palace > garden	He would push back his kerchief and stroll along the railing, or sometimes drink wine under the moon and compose poetry	The tranquility of the mountain forests and gardens was such that I almost forgot the noise of the carriage wheels.

The first was the state of working at the workplace, the second was related to illness, and the third was the state of negative emotions. Working in the workplace cannot be specifically described as a state of stress or a state containing negative emotions, however, it can be a state where stress may occur because it is an environment of obligatory behavior. In Seo Yu-gu's "Pungsuk Gohyeopjip Vol. 2, Uchodanggi," records show that "I was sick with a lingering illness, sweating profusely, and drowsy and exhausted,

falling asleep several times," and from the phrase "drowsy and exhausted," it can be seen that the person was in a physically and mentally difficult state. Three cases were identified where the state of negative emotions could be known, and it is confirmed that they were in a negative emotional state because the expressions of emotional state such as "My chest was stuffy and my thoughts were scattered," "When my mind is noisy," and "I felt nauseous at his words" were specific.

As shown in Table 3, the spaces where the plant-mediated activities took place were a room with a window, a garden, which is an outdoor space, and an open space such as a pavilion. Twelve plant-mediated activities were extracted because emotional expressions that could reveal the emotional or psychological state after the activities were confirmed. Activities involving a single sense predominantly utilized sight and hearing. Plant-mediated activities using sight included "looking at shaded pine trees," "observing flower shadows," and "viewing garden flowers." The plant-mediated activity that used hearing was "listening to the sound of raindrops falling on plantain leaves." For plant-mediated activities that engaged more than one sense, there were combinations of sight and touch, sight and hearing, and sight with walking. Cases where both sight and touch were used included "picking leaves to write on them with a brush" and "picking up leaves to look at them." "Listening to the sound of raindrops falling on plantain leaves while looking at plants" was an activity that combined sight and hearing. Plant-mediated activities that integrated sight with walking included "walking along the garden railing" and "appreciating azaleas while strolling in the garden." Considering the state after these plant-mediated activities, positive changes were observed compared to the state before the activity. There were 7 records of improved emotional states, such as feeling refreshed or good, 2 records of feeling an improvement in illness, and 3 records of feeling calm or immersed.

Discussion

The Background of the 18th Century Floral Culture Development

Globally the 17th century was a period during the Little Ice Age. As farming became difficult because of the Little Ice Age, the population of rural areas were concentrated in Seoul in the 18th century. The population of Hanyang increased from a level of 220,000 in 1669 to exceed 300,000 in the 1770s'. In the 18th century, Hanyang was the center of politics, economy, military, and culture, with 90% of the population engaged in commerce and an increase in hobbies such as various flowers and bonsai (Ko, 2007). It was an era in which interest in garden creation

and horticultural techniques became widespread because of active exchange with China and Japan (Jo, 2013). Particularly in the 18th century, with the development of printing technology and the influx of Chinese garden information (Kim and Lee, 2020), the accumulation of garden-related knowledge enabled the development of garden culture and flourishing of floricultural culture.

Furthermore, in the early Joseon period, the appreciation of flowers was associated with the perception of "wanmul-sangji (玩物喪志)," meaning "losing one's grand ideals by being preoccupied with cherished and favored objects." However, during the late Joseon period, appreciation of and interest in flowers became widespread. As floriculture became commercialized and its economic value increased, and as mental utility value was attributed to flowers (Youn, 2016), it promoted the development of gardens and floricultural culture. Horticultural culture flourished mainly in Seoul after the mid-18th century (Jung, 2005; Youn, 2016).

Plant-Mediated Activity Space, Gardens, and Appreciation Activities

Among the 12 plant-mediated activities extracted from 18th-century literary records, seven took place in gardens. Gardens are enjoyed while walking. While walking in a garden, one naturally engages in plant-mediated activities by seeing, feeling, and touching plants. Jeong Yak-yong recorded in "Dasansimunjip (茶山詩文集) Jukranhwamokgi (竹欄花木記)" that "his house was in Myeongryebang (明禮坊), and as there were no ponds or gardens to enjoy in the morning and evening, he directly created a garden, made bamboo railings to prevent flowers from being damaged, walked along the railings after the morning assembly (朝會), composed poems, and forgot the noise with the tranquility of the mountains and the atmosphere of the garden." A garden with a safe fence becomes a healing tool itself (Stuart-Smith, 2020), and is the most accessible and convenient place with nature unfolded to help emotional recovery. The Gyeonghwasejok (京華世族) of the 18th century, who lived in Hanyang for generations and wielded power, created gardens as places to enjoy nature (Lee et al., 2014), and became a trend to create flower gardens in private residences (Kim and Choi, 2015).

In Jeong Seon's "Dokseoyeogado," a scholar is seen appreciating peonies in a pot, and in the painting "Taepyeongseongsi-do," shops selling potted plants and delivering potted plants are observed (Table 2). The Gyeonghwasejok of the 18th century created gardens as places to enjoy nature (Lee et al., 2014). Scholars who did not have gardens appreciated flowers in flower vases and bonsai (Jeong, 2012). Appreciation methods such as "Bingdeungjobinyeon (氷燈照寶宴)," which involves appreciating plum blossoms by placing candles inside cut ice blocks on winter nights, and "Gugyeongbeop (菊影法)," which involves appreciating chrysanthemums using shadows, appeared (Ahn, 2012). 18th-century literary class's horticultural hobby craze allowed scholars to find solace through flowers and gardens (Kim, 2016). Wanting to enjoy nature within the city in the 18th century, when commercialization and urbanization were developed, reminds us of the biophilia theory, which states that humans innate instinct is to return to nature (Wilson, 2017).

Musa basjoo, a Beloved Plant in the 18th Century

In the plant-mediated activities extracted from 18th-century literary records, the plant that prominently appears is the Musa basjoo. Among the Eleven extracted from 18th-century literary records, three were related to the banana tree, all of which involved listening to the sound of rain falling onto its leaves. The banana tree, scientifically known as Musa basjoo, or Japanese banana, is a perennial plant of the Musaceae family, and belongs to the same genus as the banana. Native to China, it grows to a height of approximately 4m. It has glossy leaves, each over 2m long and 50cm wide, spread in all directions at the top. Among the twelve activities, Seo Yu-gu, Park Ji-won, and Seo Hyung-su recorded "listening to the sound of rain falling on the banana tree leaves." Jang Hon (1759-1828), a scholar of the mid-Joseon period, listed old plum blossoms, chrysanthemums, paulownia, banana trees, and grape trellises as plants among 80 items for an elegant life in "Yieomjip (而已广集)" (Ahn, 2008; Lee, 2010). Heo Gyun, a literary figure of the mid-Joseon period, recorded the sound of rain falling on banana tree leaves as one of the 10 "elegant sounds" in "Hanjeongrok," calling it the clear sound of heaven and earth (Hong, 2011). In the 18th century, the

banana tree was important for pursuing garden culture, and have possibly introduced a desire to experience the soundscape of rain struck the Musa basjoo (Rho et al., 2010).

Musa basjoo is a commonly depicted plant in 18th-century paintings. Kim Hong-do (1745-1806) portrayed the Musa basjoo plant in his works Wolha Chwisaengdo (Playing a Reed Instrument Under the Moon While Intoxicated) and Poui Pungnyudo (Scholar's Leisurely Life). Furthermore, in Danwondo (Portrait of Danwon), which depicts the scenery of his own thatched-roof house, he also represented a Musa basjoo plant planted in the garden. A Musa basjoo plant in a garden also appears in Jeong Seon's (1676-1759) Cheokjae Jesi (Painting with Cheokjae's Poem), and painter Yi Jae-gwan (1783-1837) painted a scene of writing characters on a Musa basjoo leaf in his Pachoesido (Writing a Poem on a Musa basjoo Leaf). In Yun Deok-hui's (1685-1776) painting 'Woman Reading,' a woman can be seen reading with a Musa basjoo plant in the background. Sim Sa-jeong's (1707-1769) paintings featuring the Musa basjoo plant include 'Banana Plant and Dragonfly' and 'Torn Musa basjoo Plant and Autumn Cat.' The Musa basjoo plant can also be found in Dasan Chodangdo (Painting of Dasan's Thatched Cottage) by Jeong Yak-yong (1762-1836), a prominent scholar of the late Joseon Dynasty. Moreover, King Jeongjo's (1752-1800), the 22nd king of Joseon, painting of a Musa basjoo plant, titled Jeongjo Pil Pachodo (Musa basjoo Plant Painted by King Jeongjo), is designated as a national heritage 'Treasure.' The fact that the Musa basjoo plant appears in paintings by figures ranging from the king to representative artists and scholars of the 18th century suggests that it was a cherished plant during that era.

Emotional Impact of Plant-Mediated Activities

Plant-mediated activities from the 18th century that elicited emotional changes, as extracted from literature, can be categorized into Five types. First is the visual activity of looking at trees, flowers, and flower shadows; second is the auditory activity of listening to the sound of rain falling on banana plant leaves; third is an activity combining sight and hearing, such as looking at plants while listening to the sound of rain falling on banana plants; fourth is an activity combining sight and touch, like writing on leaves;

and fifth is a garden strolling activity, walking through the garden and looking at plants. Green or blue automatically lowers arousal levels (Esther, 2020). Looking at flowers induces automatic distraction from stressors and reduces negative emotions (Mochizuki, 2020). Listening to the sound of rain increases arousal levels while providing a sense of coolness (Sakuragi, 2019). In particular, the sound of water can reduce state anxiety, induce pleasure, decrease heart rate, and stimulate the parasympathetic nervous system (Franco et al., 2017). Peltola, H. (2023) reported that rain falling on deciduous leaves is perceived as "soft, warm, and harmonious," in distinct contrast to rain falling on metal surfaces. The activity of listening to the sound of rain falling on *Musa basjoo* plants while observing plants combines the visual activity of seeing plants with the auditory activity of hearing the rain on *Musa basjoo* leaves; this can be an activity that reduces negative emotions and induces pleasure, as can be understood from the emotional changes of Seo Yu-gu described in 18th-century records. Additionally, when people touch plants, they unconsciously experience a calming response (Kazuko and Yutaka, 2013). Walking in a garden where one can come into contact with nature has a positive effect on the autonomic nervous system, and exposure to nature can promote balance between the sympathetic and parasympathetic nervous systems (Hiromi et al., 2020). Furthermore, contact with nature promotes human health (Groenwegen et al., 2006). Kellert & Wilson (1993) suggested that interaction with nature affects human psychological well-being and happiness, and Ulrich et al. (1991) demonstrated through experimental research that contact with natural environments helps in stress recovery. 18th-century plant-mediated activities alleviated negative emotions, reduced stress, and influenced the feeling that disease states had improved. These records are consistent with the findings of existing research on plant-mediated activities.

Conclusion

This study differentiates itself from existing research by exploring the value of plant-mediated activities within a historical and cultural context, specifically focusing on activities in 18th-century literature that influenced positive

emotional changes. The findings of this study are as follows: First, 35 18th-century literary documents revealed plant-mediated activities that evoked positive emotional changes, including garden walking, listening to rain fall on plantain leaves, appreciating plants, and writing on leaves. Activities such as 'listening to the sound of rain falling on plantain leaves,' 'observing flower shadows,' and 'writing on leaves' are plant-mediated activities rarely found in modern horticultural activities, and they can offer valuable ideas for developing horticultural therapy programs. Second, the 18th century was a period of significant development in horticultural culture. This advancement was driven by urbanization, commercialization, the growth of trade, and the development of printing technology, which can be seen as supporting Wilson's biophilia hypothesis. Third, the plantain *Musa basjoo* was a prominent beloved plant in the 18th century and was planted for its soundscape. The activity of 'listening to rain fall on plantain leaves' is confirmed in 18th-century literary records as a related activity. Fourth, the 18th-century plant-mediated activities recorded as inducing positive emotional changes were consistent with previous research findings that plant-mediated activities can influence stress reduction and recovery. The plant-mediated activities extracted from 18th-century records in this study can be said to align with Wilson's Biophilia theory (2017), Ulrich's Stress Reduction Theory (1991), and Attention Restoration Theory (Kaplan & Kaplan, 1989; Kaplan, 1995). It is believed that this study, which primarily focused on 18th-century literature, could yield much broader results if further research were conducted using literature from before and after the 18th century. Furthermore, research is needed to scientifically verify the therapeutic effects of the extracted activities by applying them to modern people. While the limited number of extracted plant-mediated activities—12 cases—presents a limitation for generalization, this research is meaningful as a novel attempt. For the 18th-century plant-mediated activities extracted in this study to be utilized as foundational data for horticultural therapy, experimental research is needed to verify their psychophysiological effects.

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