A Review of the Research on the Psychosocial Supportive Environment of the Elderly Care Facilities

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Abstract: Severe negativity and lack of social support threaten the health of older adults. The health and well-being of older adults can be enhanced by creating a psychosocial supportive environment by placing health-promoting environmental elements in the physical environment of an elderly care facility. Based on systematic literature collection and analysis, this paper summarizes the environmental design goals and environmental characteristics from three aspects: social support, emotional support and psychological coherence support, and analyzes the limitations of the social psychological support environment in the mechanism of action.

Keywords: Caring facilities for the elderly; Psychosocial support; Environmental feature

1. Research Background

In the 1930s, research found that some things in people's minds may lead to physical diseases, revealing that some diseases are related to body and mind, and people's environment, as an action factor, has a great impact on human health[1]. The modern concept of disease has changed from narrow pathogenicity to multifactorial pathogenic system, in which psychosocial factors are an important part, and these psychosocial factors that play an important role in the pathogenic system are closely related to the quality of the physical environment in which people live[2]. The relationship between the physical environment and human health is well explained in the theoretical model for psychosocial mediated disease (**Figure 1**) proposed by Kagan and Levi in the 1970s. The model describes that the physical environment is the basis for the establishment of social organizations and how it promotes human health or causes diseases[3]. In 1979, Aaron Antonovsky put forward the famous salutogenesis theory based on 15 years of research work, which advocated looking for the origin of health and overturned the concept of looking for the cause of disease in traditional medicine. In the 1980s, Ulrich revealed that being in a non-threatening natural environment would reduce the physiological indicators related to stress[4], which initiated the research of therapeutic environment and promoted the establishment of evidence-based design.

In 2007, Swedish scholar Dilani combined the health origin theory with architectural environment design and developed psychosocially supportive design. As a theoretical model, it provides a possible paradigm for improving health through physical environment design[5]. Dilani pointed out that by setting environmental elements to promote health in the physical environment and creating a psychosocial support environment, people in the environment can improve their ability to cope with stress or reduce anxiety[6], which can offset the psychosocial stimulation and biological psychological reaction pathogenic process caused by stress to some extent, so as to maintain physical and mental health[6].
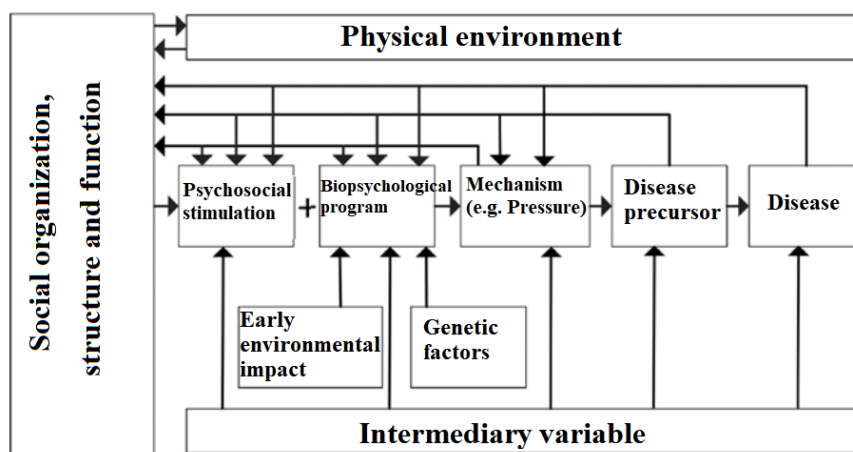

Figure 1. Theoretical model of psychosocial factors[3].

Due to the decline of physical and cognitive functions, social status and role changes, the elderly are prone to negative emotions such as isolation, loneliness and depression[7], and the lack of negative emotions and social relations pose a threat to the health of the elderly[8]. For the elderly living in facilities and relying on various service facilities, it is very important to design the physical environment of facilities with psychosocial support to improve the health and well-being of the elderly.

However, in the current research on the environment of elderly care facilities, the specific environmental elements and implementable design strategies of psychosocial support environment are not clear, and the connection point between health promotion and environmental design needs to be further explored. Therefore, this study aims to explore the relationship between the psychosocial support of the elderly and the physical environment through a systematic literature review, find out the characteristics of the psychosocial support environment of the elderly care facilities, and extract the specific environmental objectives and environmental design strategies.

2. Research Design

The research literature mainly includes two aspects: one is to focus on the social psychology of the elderly in care facilities, and the other is to focus on the physical environment of facilities. In order to form a more comprehensive analysis and investigation, we should look for the intersection of the social psychological and physical environmental factors of the elderly.

The process of literature investigation is divided into three steps.

First, three categories of key words are determined before searching, including: (1) keywords related to psychosocial support—psychosocial, psychosocially supportive, psychology, mentally, social support, social interaction; (2) keywords of environment type—nursing home, caring home, assisted living facility, long-term care facility, facility for the elderly, residential care facility, dementia care facility; (3) keywords related to

physical environment—physical environment, environment design, build environment. Combined with the first and second types of key words, the second and third types key word: the Boolean search method is used to search Taylor & Francis, ScienceDirect and EBSCO databases respectively, and Google academic supplementary search is used to limit the scope to the literature published from 1995 to 2019.

Then, the literature was screened by the following rules, including: (1) research published in journals; (2) research on the environment of elderly care facilities, including the working environment of staff, excluding the literature at the level of family environment and community environment; (3) at the same time, it involves the research on the related factors of social psychology and physical environment of the elderly, and excludes the literature only related to one aspect.

After screening by the above rules, the preliminary qualified literature was obtained. On this basis, the researchers and references related to the qualified literature and related to this study were searched for the second round, and the supplementary qualified literature was obtained after screening. Finally, check the contents of all qualified documents and complete the information collection, comparison and sorting (**Figure 2**).

In the process of analysis, through extensive literature review, the objectives of psychosocial supportive environment are summarized from bottom to top, and then the investigation of environmental characteristics is corresponding to the objective model to form a verification. The above process may be more complex in practical research. It is necessary to adjust the possible objectives and classifications through repeated literature analysis until a good match is achieved in the corresponding model.

3. Objectives of Psychosocial Supportive Environment

After screening, 27 effective literatures were obtained. Through the analysis of the main behavioral and psychological effects of environmental characteristics in the literature, it is found that the psychosocial supportive environment of elderly care facilities can be understood from the aspects of social support, emotional support and sense of coherence support (**Figure 3** and **Table 1**).
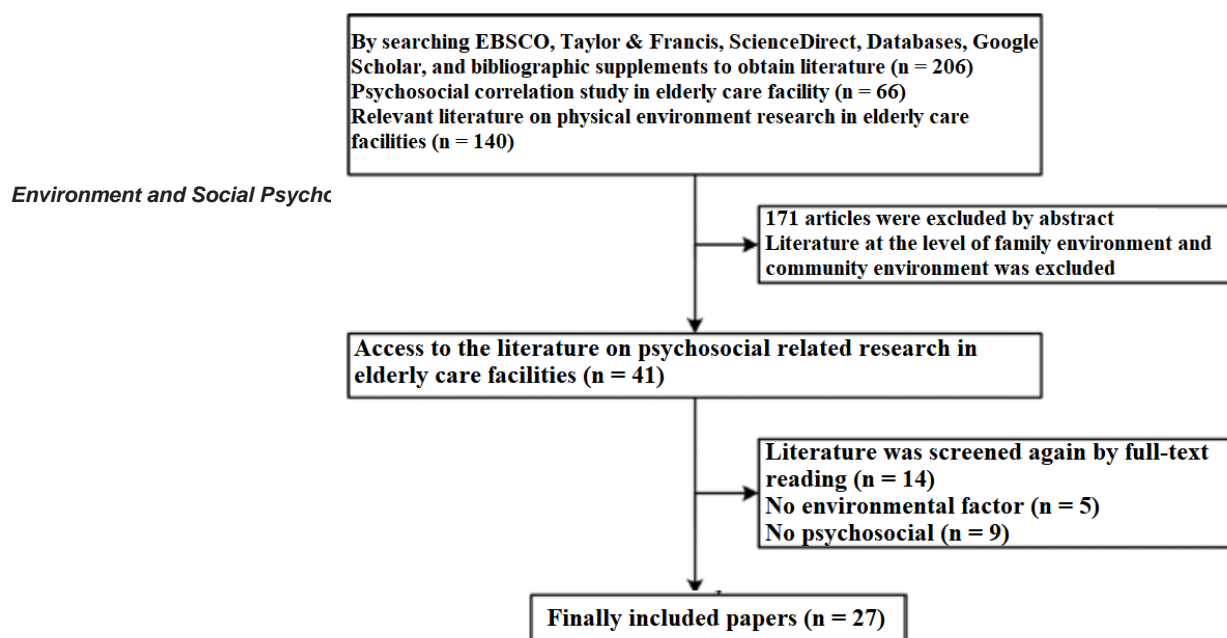

Figure 2. Literature screening process. (Source: the author's own drawing).
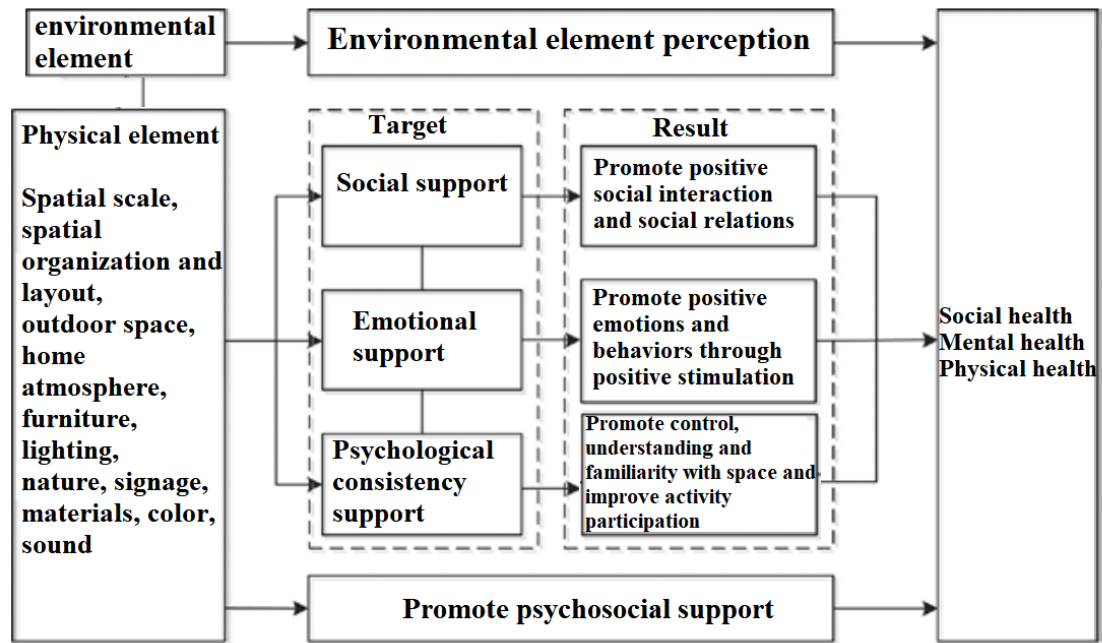
Figure 3. Target model of psychosocial supportive environment. (Source: the author's own drawing).

3.1. Social support

The environment supports the elderly to connect with all kinds of people, such as families, staff, other elderly people or people with intergenerational differences, and promotes positive and spontaneous social interaction. Through the role of environmental elements such as spatial organization and furniture facilities, we can shorten the interaction distance and create activity opportunities to form a positive impact, so as to achieve the goal of promoting social support.

3.2. Emotional support

The environment supports and promotes the positive psychological emotions of the elderly and reduces the negative emotions such as loneliness, depression and anxiety. The behavior and psychological process of perceiving environmental elements such as lighting, natural and outdoor environment, material and color act on the elderly, form positive compensation, promote them to produce positive emotions and achieve positive stimulation.

3.3. Psychological consistency support

Take the environment as a part of the resources available to the elderly, compensate and support their behavior activities, and strengthen their ability to deal with stress. When the autonomous action of the elderly in space is guaranteed, their opportunities to participate in activities and interactions may increase.

Through environmental elements such as home atmosphere, spatial organization and layout, logo and decoration, the elderly can enhance their control, comprehensibility and familiarity with space, promote their activities and achieve the goal of enhancing their sense of coherence.

Table 1. Environmental characteristics promoting psychosocial support (source: author self-drawn)

Environmental objectives	Environmental strategy	Glenda Cook et al., 2010	Sitinur Athirah Mohammad, 2016	Jessicae Thomas et al., 2013	R.M. Dröes et al., 2016	Dieneke Smit et al., 2014	Meiyung Leung et al., 2019	Habib Chaudhury et al., 2017	Leona Werezak et al., 2003	Hilde Verbeek et al., 2014	Bramde Boer et al., 2017	Bramde Boer et al., 2018	Susanna Nordin et al., 2017	Marga-retp Calkins, 2018	Gesine Marqu-ardt et al., 2014	Sandra Davis et al., 2009	IrisVan Steenw-inkel et al., 2017
Promote social support	Suitable scale and space distance		●	●									●		●		
	Spacious public space for entertaining family and friends			●													●
	Barrier free design, universal design		●		●												●
	Small scale care unit							●	●	●	●			●	●		●
	Large dining space												●				
	Living space and public space to meet private and social needs			●					●							●	

Table 1. (*Continued*)

Environmental objectives	Environmental strategy	Glenda Cook *et al.*, 2010	Sitinur Athirah Mohammad, 2016	Jessicae Thomas *et al.*, 2013	R.M. Dröes *et al.*, 2016	Dieneke Smit *et al.*, 2014	Meiyung Leung *et al.*, 2019	Habib Chaudhury *et al.*, 2017	Leona Werezak *et al.*, 2003	Hilde Verbeek *et al.*, 2014	Bramde Boer *et al.*, 2017	Bramde Boer *et al.*, 2018	Susanna Nordin *et al.*, 2017	Marga-retp Calkins, 2018	Gesine Marquardt *et al.*, 2014	Sandra Davis *et al.*, 2009	IrisVan Steenwinkel *et al.*, 2017
Promote social support	Functional space to enhance community ties													●		●	
	Space to support meaningful daily activities				●						●						
	Furniture layout to promote communication					●			●					●		●	
	Decorative items that can arouse common interest							●			●					●	
	Availability and availability of TV, computer, new technology and other equipment			●	●												
Emotional support	Good lighting	●	●	●			●	●	●		●		●	●	●	●	
	Access to nature and outdoor space			●		●					●		●	●		●	●

Table 1. (*Continued*)

Environmental objectives	Environmental strategy	Glenda Cook *et al.*, 2010	Sitinur Athirah Mohammad, 2016	Jessicae Thomas *et al.*, 2013	R.M. Dröes *et al.*, 2016	Dieneke Smit *et al.*, 2014	Meiyung Leung *et al.*, 2019	Habib Chaudhury *et al.*, 2017	Leona Werezak *et al.*, 2003	Hilde Verbeek *et al.*, 2014	Bramde Boer *et al.*, 2017	Bramde Boer *et al.*, 2018	Susanna Nordin *et al.*, 2017	Marga-retp Calkins, 2018	Gesine Marquardt *et al.*, 201	Sandra Davis *et al.*, 2009	IrisVan Steenwinkel *et al.*, 2017
Emotional support	Outdoor space, pedestrian comfort		●	●		●					●			●	●	●	
	Reduce noise	●						●	●								
	Interesting works of art and interior sketches													●			
	Comfortable and warm materials and colors		●										●	●		●	
Psychological consistency support	Access to nature and outdoor space			●		●					●			●	●		●	●
	Outdoor space, pedestrian comfort		●	●		●					●			●	●	●	
	Reduce noise	●						●	●								
	Interesting works of art and interior sketches													●			

Table 1. (*Continued*)

Environmental objectives	Environmental strategy	Glenda Cook et al., 2010	Sitinur Athirah Mohammad, 2016	Jessica Thomas et al., 2013	R.M. Dröes et al., 2016	Dieneke Smit et al., 2014	Meiyung Leung et al., 2019	Habib Chaudhury et al., 2017	Leona Werezak et al., 2003	Hilde Verbeek et al., 2014	Bramde Boer et al., 2017	Bramde Boer et al., 2018	Susanna Nordin et al., 2017	Marga-retp Calkins, 2018	Gesine Marquardt et al., 201	Sandra Davis et al., 2009	IrisVan Steenwinkel et al., 2017
Psychological consistency support	Comfortable and warm materials and colors		●										●	●		●	
	Open layout							●					●	●			●
	Combination of different functions and types of public spaces												●				●
	Spatial accessibility		●	●					●						●		●
	Home atmosphere, non-institutionalized and familiar environment		●			●		●	●	●	●	●	●	●		●	●

4. Characteristics of Psychosocial Supportive Environment

4.1. Environmental characteristics of social support

Participating in activities and socializing is one of the important purposes that the elderly need to achieve in elderly care facilities. Meaningful social interaction is an important factor to reduce the negative emotions of the elderly and improve their well-being and quality of life[9]. Lack of participation can also lead to more behavioral problems and lower quality of life in elderly people with cognitive impairment[10].

The important thing is how to promote structured or spontaneous interaction through the design of physical environment characteristics, encourage benign social connections by providing opportunities for contact and participation, support the exertion of the personal ability of the elderly, and give meaning to daily life.

4.1.1. Space layout design

(1) Ensure the convenience of space activities to improve social interaction

The premise of social interaction is the physical proximity of users in the space. Therefore, the convenience of daily activities affects the activity and social scope of the elderly.

The spatial distance of facilities is one of the factors that directly affect the social interaction and leisure activity participation of the elderly[11]. It is easier for the elderly to use the compact environment[12]. Considering the physical condition and walking ability of the elderly, the long distance between spaces will cause their action burden and is not conducive to social participation[12]. Compact environment is more easily used by the elderly[12]. The space often used by the elderly should be minimized, such as the necessary distance between the activity space and the toilet[13].

Barrier free design is a condition closely related to the physical action of the elderly. Taking the restaurant space as an example, the barrier free environment that allows elderly people using auxiliary facilities such as walking aids or wheelchairs to pass through the restaurant independently and choose the dining location actually creates a comfortable and pleasant social space, which stimulates the participation and interaction of activities other than actual dining[14]. The same is true in other public spaces.

(2) Meet the spatial level of private social interaction

In addition to public participation, the private social activities of the elderly are an important part of meeting their social support   . A small space in the facility to meet close conversations with family and friends is a way to encourage social interaction[11]. Living space also needs to meet the privacy of private social interaction. Spacious living space allows the elderly to freely arrange personal items that are meaningful to themselves and furniture that can interact comfortably with friends or family, which can provide high-quality private space for the elderly[14].

The private and public social interaction needs of the elderly reflect the hierarchy and domain of space in the organization, which is helpful to stabilize the formation of social relations and living conditions. Diverse, continuous and transitional spatial hierarchy is more conducive to the effective transformation and utilization of the environment by the elderly. A certain scale, relatively fixed and familiar spatial interaction range can be realized by means of incomplete partition and functional area division.

(3) Functional space organization to enhance community connection

Introducing the community or other surrounding people into the facilities through effective space organization can increase the communication opportunities of the elderly, encourage social participation, create contact with the community for the elderly and help them reduce loneliness[15]. Restaurants, exhibition spaces and

multi-functional spaces open to people other than the elderly, combined with the setting of children's day care space, gather people together in a meaningful way, and can also establish a sense of community in the facilities when they interact[15,16].

(4) Small space promotes social interaction in many ways

In the facilities for the elderly covering residential functions, small-scale care units similar to the family environment can promote the autonomy, social interaction and privacy of the elderly. The number of elderly people in small-scale units ranges from 5-9 to 13-15[17]. The limited number of people makes the conflict between people less, which seems to enhance good social communication and improve the social skills, communication skills and activity participation of the elderly[7,16,17]. The more centralized layout of the unit environment also greatly increases the opportunities for the elderly to encounter meaningful stimuli, providing a more attractive environment[16]. However, small-scale unit is a concept of comprehensive environment, which can also refer to a class of facilities, not simply the size of unit area, so its positive impact may also be related to other factors in the environment[17].

4.1.2. Furniture and available equipment

Interaction in public places can increase the independence, self-confidence and self-realization of the elderly. The provision and quality of available facilities in the environment should encourage the elderly to interact rather than use the facilities alone[18].

(1) Furniture layout to shorten the interaction distance can directly affect the potential of social interaction. When the furniture layout is not flexible, the distance between people is inappropriate or far away, and the elderly are difficult to communicate with others in eyes, language or behavior, which will reduce the applicability of space. A variety of tables and chairs, seats at the entrance, tables and chairs configured in groups and semi-circular sofas can promote dialogue[19].

(2) Decoration with personal characteristics and decoration related to local culture and history in the decorative space that arouses users' interest in communication can not only alleviate the boredom of the space, but also stimulate the memory of the elderly and become a topic that the elderly can communicate with together[20]. This kind of space ornaments that arouse the common interest of users can stimulate dialogue and promote interaction.

(3) The communication and interaction between the elderly, between the elderly and caregivers, and between the elderly and other intergenerational groups in the equipment and facilities that meet the social connection can be observed as direct interaction and social connection. In essence, the static activities such as reading, reading newspapers, watching TV and listening to radio carried out by the elderly alone also indirectly achieve the connection with the external society through the interaction with environmental facilities[20]. Watching TV is not only an important activity for the elderly to kill time in the facility, but also an effective way for the elderly to obtain news and information. Some studies have also pointed out that using tablet computers to play family related videos for the elderly with cognitive impairment can help create a positive social environment and alleviate the anxiety of the elderly[21]. Therefore, it is necessary to consider the availability and availability of TV, computer and other equipment in the design of facility space[22].

4.2. Environmental characteristics of emotional support

The emotional changes of the elderly are closely related to the regulation of sensory stimulation, which is the main way to stimulate positive feelings and reduce stress. Positive stimulation helps the elderly pay attention to positive environmental factors and diverts their attention from negative emotions such as anxiety and loneliness.

This includes not only the sensory environment formed by lighting, sound, material and color, but also the elements that actively distract the attention of the elderly, such as natural elements and outdoor space. In particular, natural elements play an important role in relieving the pressure and healing of the elderly. Kaplan and his wife proposed in the Attentional Restorative Theory (ART) that observing passive attention activities that do not consume energy such as nature can restore active attention that consumes energy such as reading and work [23].

4.2.1. Good lighting

Lighting factors in the environment have an important impact on the mental health and social relations of the elderly[24]. Less background noise, sufficient light and relaxed environment can promote the communication of the elderly[25]. The environment with insufficient light will restrict the elderly to move around in the facility and interact with others[26]. Phototherapy, that is, exposure to bright light, has a positive impact on the cognitive ability of the elderly, which can make them more sober and have stronger oral expression ability[24], and also help reduce the anxiety, depression, distraction, anger and other bad emotions of people with cognitive impairment[27]. Window seats exposed to bright light are often the best places for the elderly in the space.

4.2.2. Access to nature and outdoor space

Natural environment, outdoor passage or time spent outdoors have a positive impact on stress relief, physical activities, anxiety and negative emotions of the elderly in care facilities[20]. Studies have pointed out that the entry of outdoor space is the only environmental variable significantly related to the reduction of depressive symptoms in the elderly[19]. Whether you have a natural view from the inside of the facility through the window or enter the outdoor natural environment, this desire for sensory interaction with nature covers the significance of making more connections with life[28].

Interesting landscapes and outdoor spaces provide a richer environment for the elderly, giving them the opportunity to explore the environment and find possible activities to participate in, as well as compensating for their physical limitations. Studies have found that compared with the elderly living in traditional elderly care institutions and small-scale life-style elderly care facilities, the elderly in the Dutch green elderly care farm are more active in daily life, participate in more activities, socialize and participate in more activities. This is because the green care farm has unique outdoor space elements such as animals, stables, gardens and crops, it provides an environment for the elderly to initiate activities or go out at any time[29]. In the outdoor environment dominated by green space landscape rather than hard ground landscape, various animals and plants related to life experience are more meaningful environments[28].

In the outdoor environment, the space that can be exposed to the sun, the shade space, the accessible plants, the area where gardening activities can be carried out, different forms of rest seats and social space create different choices and opportunities for social interaction for the elderly[13, 30].

4.2.3. Other factors

In addition to the two main elements of lighting and nature, sound, color, material and art are also environmental factors that positively stimulate the elderly. The increase of noise level is related to the increase of agitation and aggressive behavior of the elderly with cognitive impairment, the decrease of social communication and the decline of quality of life[31].

Creating a friendly indoor environment through color can make the elderly feel warm, comfortable and relaxed, so as to encourage the elderly to enter public places and participate in activities[24]. Interesting artworks and interior sketches can provide positive distractions and promote positive emotions. The presence of plants in the room can make the elderly feel more like home, so as to reduce anxiety and promote health[6].

4.3. Environmental characteristics of psychological consistency support

Psychological consistency is the core concept of health origin, which is also a person's ability to regard the world as a continuum and consider it understandable, controllable and meaningful. Enhancing the sense of psychological consistency of the elderly can help them better adjust themselves to environmental pressure and have better health results[32]. From the perspective of environment, the creation of comprehensibility, controllability and familiarity in the physical environment can promote the coordination among various elements, form a well-functioning system and support the sense of psychological consistency. Comprehensibility includes mutual familiarity and recognition in the dynamic relationship between individual and environment. Controllability refers to the ability of facilities to assist users when needed, which can help the elderly control their living environment. Familiarity is the non-institutional and friendly home atmosphere felt by the elderly in the facilities, which can create conditions for the continuity of life meaning. Improving these aspects will help the elderly cope with the pressure of the facility environment and enhance their autonomy and activity participation in the facility.

4.3.1. Understandable spatial layout

(1) Open plan promotes environmental understanding. Open plan layout penetrates the visual connection in space, so that the elderly can observe the spatial situation in advance and improve the comprehensibility of space. This observation action alleviates the anxiety of the elderly to a certain extent[19], helps them find the places they want to go and the activities they want to participate in, and prepares for the possible scenarios in advance. At the same time, caregivers are more likely to detect the location of the elderly, reducing the pressure of following the elderly closely[16]. Open kitchenette is an important feature of the care environment for the elderly with cognitive impairment. Through the familiar sensory environment related to food, it can be integrated into the content of life and promote the occurrence of dining activities and other communication activities[16].

(2) The diversification of spatial functions improves the combination of multiple public spaces with specific facilities and furniture suitable for different activities in social selection facilities, which provides environmental preparation for the diverse activities and social interaction opportunities of the elderly[12,14]. At the level of social support, the diversity of space also allows the elderly to avoid conflict and choose interactive objects in communication, and also supports caregivers to adjust their participatory activities according to the preferences and characteristics of the elderly.

(3) High accessibility of space promotes activity choice. Accessibility of space is the premise for the elderly to move freely. The environment with poor accessibility will limit the participation of the elderly, cause environmental pressure and lead to negative emotions. The plane streamline system without direction change and linear layout and circular return corridor are conducive to the elderly's path finding and orientation[31,34]. The flat ground and walking loop are convenient for the elderly to carry out outdoor activities[12]. Automatic doors and elevators improve the efficiency of movement[14].

4.3.2. Familiar environment and atmosphere

The environment of home atmosphere positively affects the daily activities and social support of the elderly[27], which is also a core strategy in "people-centered" nursing[27]. Some studies have pointed out that in the facilities with more frequent expression, memory and designated task activities that play a more important role in improving the happiness of the elderly, there is often a family atmosphere, which has a home-based and non-institutional style in color, wall, furniture, lamps and lanterns[35].

Creating a home atmosphere environment in elderly care facilities can create a sense of freedom for the

elderly by providing purposeful, familiar and meaningful activity participation[17]. In the environment with stronger home atmosphere, the enthusiasm of staff is also stronger, which may be fed back to the elderly in the facility again to promote their positive behavior and emotion[34].

4.3.3. Controllable identification and decoration

The environment should maximize perceived clarity. By providing meaningful clues, including signs, decorations, furniture, etc., to compensate for support orientation, help the elderly identify and control the environment, and compensate for the loss of cognitive ability of the elderly.

Identification in facilities has an indirect positive connection with social relations and cognitive function of the elderly[24]. Clear and easy to read signs help the elderly identify their location and reach different spaces so that they can participate in communication and activities.

Clear time control is also beneficial to the development of daily activities of the elderly. The existence of clock, calendar, mobile phone and other similar items is of great benefit to the elderly to master the sense of time and alleviate anxiety, and even reduce the use of psychotropic drugs for the elderly with cognitive disorders[11,24,26]. The accuracy of time positioning is equally important. Broken clocks and unrenewable calendars are more likely to cause confusion for the elderly[37].

In the environment, objects can be set to represent the use of space, such as placing a meal pad and a water cup on the dining table, which also helps the elderly with cognitive impairment understand the use of space and encourage them to participate in daily activities such as placing tables or cleaning tables[31].

Self-decoration or objects of personal significance not only have directional support, but also provide a sense of belonging and create a familiar and relaxed environment[11]. The reminiscence or autobiography of the elderly can help produce more effective reminiscence or self-awareness of the elderly[37].

5. Complexity of Psychosocial Supportive Environment

Through the organization of environmental elements such as spatial organization and layout, home atmosphere, furniture facilities, signs, lighting, natural and outdoor space, we can promote social support, positive stimulation and sense of coherence, and realize the spatial language translation between social psychological support and physical environment.

5.1. Complexity of environmental elements

The influence of environmental factors in elderly care facilities on their social psychology is comprehensive, and some factors have multiple ways of action, which can promote social psychological health through two or more environmental goals (**Figure 4**). For example, the green plants in the indoor space can not only relieve the pressure of users as a positive stimulus and distraction, but also make the home atmosphere in the environment stronger. Taking care of green plants can also form a richer participation in activities in the facility. Green plants that are important to the past life experience and memory of the elderly can further have a positive impact on the cognition and emotion of the elderly. The open space can help the elderly identify and understand the environment on the intuitive level. On the social support level, it also allows the elderly to avoid conflicts and choose interactive objects in communication. It also supports the caregivers to adjust their participatory activities according to the preferences and characteristics of the elderly. The classification of different elements under environmental objectives is mainly based on their most direct-action mode.

At the same time, the achievement of environmental objectives is also the result of the compound action of

different environmental factors. Furniture layout and facility selection in the space can play a role in social interaction. The overall comfortable atmosphere formed by light, sound and color may also greatly promote the participation of social activities.
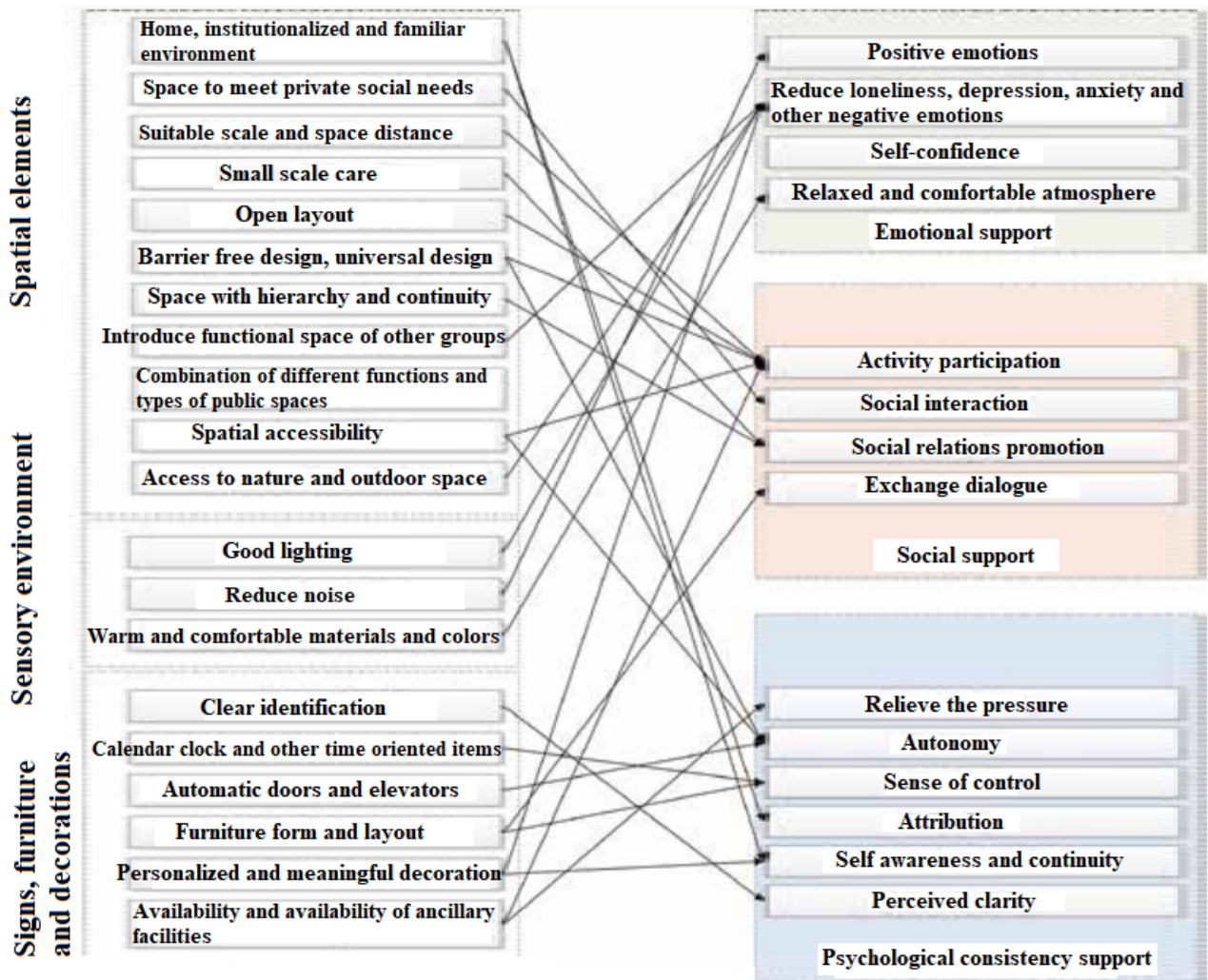

Figure 4. Compound function of environmental elements. (Source: the author's own drawing).

5.2. Complexity of environmental characteristics

Or the type of research covered in the literature ($n = 4$), including the overall research results in the literature ($n = 4$). The review literature focuses on the analysis and summary of environmental characteristics, and the empirical research mostly focuses on the relationship between environmental factors and observable or measurable variables such as interactive behavior, activity participation, and emotional performance and so on. Environmental assessment is often measured by assessment scales, such as Dementia Care Mapping (DCM), Sheffield Care Environment Assessment Matrix (SCEAM), etc. The results are more biased towards the relationship between variables and the overall environment. Some environmental factors causing changes in dependent variables can be found through semi-structured interviews, but they are often broad design features, such as home environment Clear identification is not specific to what kind of identification, but a clear and specific design strategy. A study on the relationship between physical environment and depression pointed out the problems of environmental details. When the elderly have many obstacles to enter the outdoor space, such as locked doors, uneven sidewalks, steep steps, and need permission or help to go out, it will aggravate the performance of depression[19]. But it doesn't point out what kind of outdoor access and sidewalk layout is more

beneficial.

Due to different research methods and research objects, different studies will have different conclusions in the results of social support. In the study of small-scale unit care environment for the elderly with cognitive impairment, the improvement of fixed scope in behavioral activities, social interaction and well-being was affirmed. Some studies also believe that low-density people in space will reduce the frequency of social contact. There are elderly care facilities covering the healthy elderly. The research points out that the introduction of functional space available to people in the community outside the facilities can increase the social contact and interaction of the elderly. Therefore, in the specific environmental design of elderly care facilities, different research results should be combined to consider the differences between the elderly with different physical activity abilities and different cognitive abilities.

6. Limitations and Prospects of Psychosocial Supportive Environment Research

6.1. Research limitations

This study mainly focuses on the environmental elements related to psychosocial supportive goals, and summarizes the characteristics of psychosocial supportive environment from previous studies. Although the procedures and methods of systematic literature review can ensure the comprehensiveness of the number and content of literature collection as much as possible, some research literature may still be omitted due to factors such as database, Literature Publishing language, search years and so on, resulting in some one sidedness of the research results.

On the other hand, in the study of home atmosphere environment, Cohen and others have proposed that physical environment can only promote an environment like home rather than create a home[38]. The physical environment itself can only promote, but not enough to completely create an all-round environment supported by social psychology. The social and organizational environment in elderly care facilities is also a necessary part of psychosocial support. However, this study does not fully consider the impact of caregivers and organizational environment as intermediary variables in the process of physical environment promoting psychosocial support. In addition, although important interventions such as intergenerational communication activities, dancing and keeping pets are closely related to psychosocial support, they are not included in the scope of the study because they are more related to the creation of social environment.

6.2. Research prospect

Although the research has some limitations, it is still exploratory. The results are of great significance in the direction of physical environment supporting the social and mental health of the elderly. As the material basis of social organization and psychological response, building physical environment has great potential to promote health. This study shows that the environment has a certain impact on social support, emotional support and psychological consistency support, but more quantitative relationships need to be established between specific environmental factors and the objectives of social psychological support.

In the future, more research is still needed to transform the slightly broad overall environmental characteristics into the architectural environment under specific conditions, further put forward more specific environmental design strategies for the elderly care facilities under different cultural and economic conditions, and how to maximize the social and psychological support of the environment for the elderly. When many

environmental factors are combined, how to quantify and determine the possible influencing factors and formulate the most appropriate design strategy; under the people-oriented care environment and design criteria, when the spatial features extracted from the existing literature face individuals with different needs and preferences in the group environment, how to consider the diversity and diversity to promote more meaningful and balanced psychosocial support is the problem that needs to be studied in the next step.

In the existing research, the interaction between management factors and space environment design is also less involved. However, in the actual care environment, the staff and the control of environmental factors are the main reasons for the difference between the expected purpose and actual utility of the factors. Staff control the opening and closing of indoor and outdoor channels, so their understanding of the environment and nursing determines whether the elderly can move alone and enter the outdoor space. For the elderly with cognitive impairment, effective interaction with staff also plays an important role in promoting mental health[39]. The impact of caregivers as variables on the actual utility of the environment and psychosocial supportive environment will also be further research, so that staff can play a greater role in the care process and interaction with the elderly. The research on the joint force of social environment, organizational environment and physical environment is also a subject to be carried out.

The goal of healthy aging is to promote the overall physical, psychological and social health of the elderly. As an important part of their life and even life support, elderly care facilities need to work together to promote the physical and mental health and well-being of the elderly from the perspectives of physical environment, social environment and organizational environment. In recent years, China's elderly care facilities have improved greatly in terms of environment, but we still need to pay more attention to the construction and research of environment to promote health, especially social and mental health. Architectural design can further learn from the research results of psychology and sociology, and support the improvement and promotion of space environment design with more empirical research, so as to create a respectful, inclusive and healthy comprehensive environment for elderly care facilities.

Conflict of Interest

The authors declared no conflict of interest.

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