Spatial Forms and Signage in Wayfinding Decision Points for Hospital Outpatient Services

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Abstract
This study primarily researches the influence of wayfinding decision point spatial forms and signage on wayfinding behaviors in hospital outpatient areas, using spatial syntax analysis to perform axial mapping analysis and isovist analysis. We then perform a wayfinding experiment involving 24 experimental subjects, combining visual records and the records of behavior to perform analysis and categorization for wayfinding, visual content and behavior-producing decision point space forms. Finally, we compile the results of the experiment to investigate the effect of decision point spatial configuration, signage, and other factors on wayfinding behaviors. The primary results of our research include the following three points: (1) the most probable behavior produced in wayfinding was the stop behavior; visual content relied primarily upon direction signage; (2) wayfinding decision point node configurations that most often produced wayfinding behaviors were the closed form, the open L form, and the open form; (3) in terms of outpatient space wayfinding design, direction signage in closed forms and open L forms had the greatest effect on wayfinding.

Keywords: wayfinding; space syntax; decision point; signage

1. Introduction
The outpatient area is the spatial junction of hospital interior architecture. Wayfinding design for outpatient areas emphasizes good placement and appropriate signage, allowing users to arrive at the desired space to receive medical services. Many spatial characteristics in outpatient areas are identical and difficult to differentiate; spatial forms and signage are also environmental factors in wayfinding behaviors (Passini, 1980.) As a result, the quality of spatial configurations and directional effectiveness of signage are important environmental factors in producing wayfinding behavior in outpatient areas (Carpman et al., 1986.) The outpatient environment is unfamiliar and complicated for the user and often produces wayfinding behaviors; the production of wayfinding behaviors reflects the quality of the outpatient space's "wayfinding design."

Wayfinding design primarily includes the two aspects of how to prevent problems from occurring and how to resolve problems after they occur. The former is directly related to architectural design, while the latter is related to signage. In resolving wayfinding problems in actual outpatient areas, spatial configuration, signage, and wayfinding behaviors of users must be examined to understand the basis of wayfinding problems. Appropriate design strategies can then be suggested to improve the wayfinding designs of existing environments.

This study uses two medical centers with single-level, hallway-form outpatient spatial configurations as subjects, focusing on "decision point spatial forms and signage," applying space syntax theories to analyze outpatient spatial configurations and explain spaces and areas that often produce wayfinding, and using wayfinding experiments to investigate the effect of actual decision point spatial forms and signage on wayfinding behaviors in single-level hallway-type outpatient spaces.

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wayfinding. The procedure of this study was as shown in Fig.1.

This study has three research objectives: (a) to understand the content of wayfinding behavior in outpatient spaces and the content and characteristics of visual perception; (b) to understand spatial forms that often produce wayfinding decision points; and (c) to investigate the effect of spatial forms and signage on wayfinding. We can then understand the needs of the user in terms of wayfinding in the outpatient environment, and provide information in wayfinding design for the reference of future space designers and the owners of facilities.

2. Background
2.1 Indoor Wayfinding

Weisman (1981) suggested that overall configuration, signage systems, visual contact, and space differentiation of an architectural environment are related to wayfinding design. With regard to the four factors pointed out by that study and current limitations on studies of hospital outpatient environments, the portion of that study regarding overall configurations lacked investigation into decision points. The portion regarding space differentiation cannot investigate the differentiation of outpatient space because there is not much differentiation in existing hospital outpatient spaces and paths and actual outpatient spaces cannot change conditions at will. The portion regarding signage systems and wayfinding visual contact is most often produced in decision points of actual paths and not understood in the perception of the user (O’neill, 1991.) As a result, the investigation of wayfinding behaviors in outpatient spaces should emphasize the locations of decision points and related areas in the overall configuration. The effect of the environment can then be properly understood.

2.2 Decision Points

Carpman et al. (1986) believed that decision points existed outside of the intersections of primary paths; changes in the direction of primary paths, changes in environmental clues, the merging of movement paths [?], or important entrances and exits (such as the main entrance) can all become decision points. Decision points are points at which people need to make a decision regarding paths and/or directions to take, or locations at which confusion arises as to which path or direction to take. In other words, decision points are the points at which people most need environmental cues. Current outpatient spaces all provide signage to assist in wayfinding, but most studies ignore the effects of signage and do not relate to nor investigate the relationship between decision point type and signage.

2.3 Signage

Before examining the signage of hospital outpatient areas, the existence and appropriateness of signage should be investigated. Most related studies presuppose that signs are already placed in appropriate locations and so discuss the legibility of the signs. In reality, the placement of signs in outpatient spaces is often problematic; studies of legibility are thus difficult to perform. The topic of "existence" has two points which need to be clarified: (1) in terms of wayfinding behaviors, whether or not a certain point requires the placement of wayfinding information (signs or other objects,) and (2) in terms of a certain location, where wayfinding information should be placed, and what type should be placed.

Signage can be divided into two different categories in terms of function: simplified or exhaustive. Simplified signage can be divided into the three categories of orientation signage, direction signage, and identification signage. (Boyd, 1993; Selfridge, 1978) Other scholars divide signage into the five categories of orientation signage, direction signage, identification signage, information signage, and regulation signage. (Wallace, 1997) "Orientation signage" orients or highlights important knowledge from a large source, as "You-Are-Here maps." Direction signage uses maps, guides, landmarks, or special characteristics to display path finding knowledge from one location to the other. "Identification signage" explains the name of a certain object or place. Existing signage systems in outpatient spaces can be divided into the three categories of orientation signage, direction signage, and identification signage according to their properties and by referring to related studies.

2.4 Space Syntax Analysis

Most wayfinding studies using space syntax theories in architecture investigate how the wayfinder constructs environmental cognition, and emphasizes comparing the differences between spatial layout and psychological configuration in cognitive representation. Sketch maps are the most common research method. (Evans, Marrero, & Butler, 1981; Rovine & Weisman, 1995)

People receive environmental information through visual perception. The knowledge established in the environmental perception process when such environmental information is converted to sketch maps is referred to as topology knowledge. The spatial organization displayed in such sketch maps is referred to as topology configuration. (Kaplan & Kaplan, 1982; Haq, 2003) A study by Rovine and Weisman (1995) found that, of the topology configuration drawn in sketch maps, 62.4% was identical to the actual architectural space configuration. In other words, the topology configurations drawn after wayfinding experiments are similar to actual spatial configuration.

Haq (2003) went further in hypothesizing that the two research methods of sketch maps drawn after wayfinding and space syntax are founded in topology, and thus hypothesized that the quantified results of space syntax analysis would be identical to the environmental perception constructed by wayfinding behavior. Results of that study confirmed the hypothesis, and suggested that space syntax analysis can measure the areas that cause wayfinding in complicated buildings. (Haq, 2003; Bafna, 2003) Space syntax can accurately measure the psychological configuration of the user, but cannot analyze the effect of spatial forms of decision points.
in actual areas or signage on wayfinding behavior. Consequently, there is a need to utilize wayfinding experiments to understand the relationship between wayfinding behavior in actual spaces, spatial forms, and signage; the effect of each on the others can then be investigated.

3. Method

The organizations selected for this study were chosen based on the following criteria: (1) hospital scale and architectural type, (2) outpatient space configuration and position, and (3) organization track records; the willingness of the organizations to participate in our experiment was also considered. Medical centers are the largest and most high-grade out of hospitals; a 2004 medical center grading report showed 22 qualified medical centers. Outpatient space configuration and location types can be divided into three categories: single-level, double-level, and cross-building configurations. Reception and waiting areas in each type of space can be divided into the two categories of hallway-type and lobby-type. This study utilizes single-level, hallway-type outpatient spaces as primary research environments. Thus, Facility D and Facility Q are used as research environments.

Signage location and correctness of content were examined before experiments began so as to evaluate the effectiveness of the signage. In both organizations, direction signage in outpatient spaces was hung in the intersections of paths. Upon examination, it was found that the content, the names of the destinations pointed out by the signs, as well as directions of the signs were all correct (Fig.2.).

Participants in the study were chosen according to their familiarity with the research environments, levels of education, and life experience. There were 24 participants in this study, 15 of them male and 9 of them female. The ages of the participants were between 21 and 24; all participants had a college-level education. In terms of life experience, all participants had been to similar medical treatment facilities before, but never to Facilities D and Q.

Participants were first informed of the wayfinding procedure: entrance – destination – exit. The experimental destination in both facilities was determined by space syntax analysis; the destination in Facility D was the E.N.T. (Eye, Nose, and Throat) department, while the destination in Facility Q was the orthopedics department. Participants were asked to think aloud and wear cameras on their heads to record the signs they saw as well as verbal information. Prior to the experiment, participants were informed to verbalize the content of signage that they viewed, but not to explain why they viewed the signage. Following the experiment, the video record was played back, and participants were asked to confirm wayfinding information they saw in the procedure. The head researcher recorded the positions of signage, locations of verbal expression, and wayfinding paths for future compilation and analysis.

4. Results

4.1 Evaluation of Spatial Configurations Using Space Syntax Analysis

(a) Facility D

The results of axial map analysis for Facility D are shown in the four indexes of Connectivity (Cn), Control (CV), Global Integration (Rn), and Local Integration (R3). Path D5, from the entrance to the psychiatric department, showed the highest value for each index, showing that the strength of the entire space form could not be understood using connectivity between unit spaces. The global integration and control indexes (Rn-CV) also displayed low correlation ($R^2=0.092<0.5$), showing that the strength of the overall space form could not be understood through control between related spaces. The global integration and local integration indexes displayed high correlation ($R^2=0.809>0.5$), showing that, in Facility D, the configuration of the overall space could be understood through local path inference. (Fig.3.)

In isovists analysis for Facility D, the global integration and connectivity (Rn-Cn) values displayed low correlation ($R^2=0.188<0.5$), meaning that the strength of the entire space form could not be understood using connectivity between unit spaces. The global integration and control indexes (Rn-CV) also displayed low correlation ($R^2=0.092<0.5$), showing that the strength of the overall space form could not be understood through control between related spaces. The global integration and local integration indexes displayed high correlation ($R^2=0.809>0.5$), showing that, in Facility D, the configuration of the overall space could be understood through local path inference. (Fig.4.)

In isovists analysis for Facility D, the entrance (D5-D4) was the most important visual reception area for wayfinding, while the surgery outpatient area (D1-D2) was the next most important visual reception area.
In axial map analysis of Facility Q, the two indexes of the connectivity value (Cn) and the global integration value (Rn) were the highest for the path Q14 from the reception area to the pediatric department, meaning that path Q14 is connected to the most spaces, and that one can know the overall outpatient space after passing through this path; path Q14 is thus an important path in this space. (Fig. 6.)

Space syntax analysis for Facility Q displayed low correlation ($R^2 = 0.258 < 0.5$) between global integration and connectivity (Rn-Cn), meaning that the strength of the entire space form could not be understood using connectivity between unit spaces. There was also low correlation ($R^2 = 0.092 < 0.5$) between the global integration and control values, showing that the strength of the overall space form could not be understood through control between related spaces. The global integration and local integration (Rn-R3) values showed moderate correlation ($R^2 = 0.663 > 0.5$), showing that the overall space form could be understood through the relative inference of local space. (Fig. 7.)

In terms of isovist analysis for Facility Q, the main entrance (Q19-Q14) area was the most important area for visual reception, with the family medicine department (Q9-Q14) following. In totaling relevant values it was found that the orthopedics department (Q3-Q4) area was the most difficult to find using sight, and was thus used as the experimental destination for Facility Q. (Fig. 8.)

### 4.2 Analysis of Wayfinding Behavior and Visual Content

The process of wayfinding includes "stop," "search," "decide," and "legibility" as behavior content, of
which the "stop" behavior was the most frequently occurring. In wayfinding behavior content for Facility D, stop accounted for 26.55% of behavior, search for 25.78%, decide for 23.06%, and legibility for 24.61%. In wayfinding behavior content for Facility Q, stop accounted for 31.91% of behavior, search for 28.91%, legibility for 25.66%, and decide for 13.52%. Stop behavior accounted for the greatest proportion of "wayfinding behavior content." It can thus be seen that "stop behavior" is the most frequently occurring behavior in the wayfinding process and that the primary purpose of stop behavior is to find guidance information provided by the space. (Table 1.)

### Table 1. Table of Wayfinding Behavior Content in the Two Facilities

<table>
<thead>
<tr>
<th>Facility</th>
<th>Stop</th>
<th>Search</th>
<th>Legibility</th>
<th>Decide</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q</td>
<td>205</td>
<td>255</td>
<td>740</td>
<td>158</td>
</tr>
<tr>
<td>D</td>
<td>265</td>
<td>255</td>
<td>231</td>
<td>190</td>
</tr>
</tbody>
</table>

Of the different types of visually received signage in the wayfinding process, direction signage accounted for the greatest proportion. In visually received signage content in Facility D, direction signage accounted for 73.25% of visually received signage, while identification signage accounted for 24.20%, and orientation signage for 2.55%. In visually received signage content in Facility Q, direction signage accounted for 76.71% of visually received signage and identification signage for 22.83%; only once did one person make visual contact with orientation signage. In terms of received signage in "visual content," visually received direction signage accounted for the greatest proportion. For wayfinding visuals in an actual environment, then, direction signage is the primary guide for wayfinding, while very few average people will consult "orientation signage." (Table 2.)

### Table 2. Table of Wayfinding Visual Content in the Two Facilities

<table>
<thead>
<tr>
<th>Facility</th>
<th>Orientation</th>
<th>Direction</th>
<th>Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q</td>
<td>D* = 26.55</td>
<td>Q* = 255</td>
<td>D* = 740</td>
</tr>
<tr>
<td>D</td>
<td>(25.78)</td>
<td>(23.06)</td>
<td>(22.83)</td>
</tr>
<tr>
<td>Q</td>
<td>(73.25)</td>
<td>(24.61)</td>
<td>(76.71)</td>
</tr>
<tr>
<td>D</td>
<td>(71.25)</td>
<td>(26.71)</td>
<td>(24.20)</td>
</tr>
</tbody>
</table>

### 4.3 Analysis of Wayfinding Frequency and Distribution

In both facilities, the area in which wayfinding behaviors were most likely to occur was the "middle stage of the wayfinding process." The frequency of wayfinding behaviors in Facility D, as shown in Fig.9., shows that wayfinding behaviors occurred most frequently in area D3-D8 – 136 times, 20% of the total of wayfinding behaviors in Facility D. Area D3-D10 followed, with wayfinding behaviors occurring 112 times, 16% of total wayfinding behaviors. The area with the lowest frequency of wayfinding behaviors was area D3-D5, with wayfinding behaviors occurring 32 times for a proportion of 5% of total wayfinding behaviors. The frequency of wayfinding behaviors in Facility Q, as shown in Fig.10., shows that wayfinding behaviors occurred most frequently in area Q3-Q14, with 178 occurrences, or 19% of the total. Following was Q3-Q12 with 162 occurrences, or 16% of the total. The area in which wayfinding behaviors occurred most infrequently was area Q3-Q4, in which wayfinding behaviors occurred 16 times, or 6% of the total. In comparing the three stages of wayfinding - start, middle stage, and destination - in "wayfinding frequency and distribution" for Facility D, it can be seen that wayfinding behaviors occurred most frequently in the "wayfinding middle stage." It can thus be seen that wayfinding behaviors at the beginning stage of wayfinding are not more frequently occurring than at other stages; the middle stage of wayfinding is actually the stage in which wayfinding behaviors most frequently occur.

Occurrences of visually receiving direction signage increase in areas in which wayfinding behaviors frequently occur. In Facility D, area D3-D8, in which wayfinding behaviors most frequently occurred, guidance-receiving visual content had direction signage most frequently occurring with 31 occurrences. Area D3-D10, the area in which wayfinding behaviors next most frequently occurred, direction signage occurred 9 times while identification signage occurred 10 times. In area Q3-Q14 of Facility Q, area in which wayfinding behaviors most frequently occurred, direction signage most frequently occurred in visual content receiving guidance with 29 times, while identification signage occurred 5 times. Direction signage occurred 25 times and identification signage 8 times in the area with the second-most number of wayfinding behavior occurrences, area Q3-Q12. (Fig.11.) In comparing the "visual content of areas with more frequently-occurring wayfinding behaviors" the reception of direction signage had the highest number of occurrences, with identification signage following. From these results
performed small-scale experiments in two institutions in order to test the validity of the experiment. The experimental method and the attributes of test subjects were identical to those of the primary experiment. Three test subjects were tested in each institution. Repeated experimental analysis found that the results of wayfinding experiment in D (D=D3-D8, Q=Q13-Q14) and remaining analysis (D=0.28, Q=0.08) in the outpatient area both showed the same significance and that analysis results were similar in both experiments. In terms of wayfinding occurrence frequencies and regions, both experimental analyses occurred in the intermediate process of wayfinding (D=D3-D8, Q=Q13-Q14). Comparing repeated experimental analysis demonstrated that wayfinding experimental analysis of this study in the two institutions possessed validity and could perform categorization of analysis results.

<table>
<thead>
<tr>
<th>Table 3. Table of Repeated Experiment Analysis and Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Facility</strong></td>
</tr>
<tr>
<td>Stop</td>
</tr>
<tr>
<td>Search</td>
</tr>
<tr>
<td>Legibility</td>
</tr>
<tr>
<td>Decide</td>
</tr>
<tr>
<td>Signage</td>
</tr>
<tr>
<td>Distribution</td>
</tr>
</tbody>
</table>

4.5.1 Types of Wayfinding Behaviors and Visual Content

Wayfinding behaviors can be categorized into stop behaviors, integrated behaviors, and seeking behaviors. Fig. 12 shows the proportion of each type of behavior displayed by experiment subjects in the two facilities. Behaviors that can be categorized as "stop-type behaviors" occur 19 times; stop behaviors make up the bulk of wayfinding behaviors displayed by subjects in the wayfinding process. Of stop behaviors, the most typical is that of stopping and looking for guidance cues; there are also occasions when subjects stop moving to think even in the absence of signage. There are, in total, five examples of "integrated-type behaviors;" this term refers to instances in which stop, search, legibility, and decide behaviors are equal in proportion in the wayfinding process. When this behavior occurs, the abovementioned four behaviors occur in sequence; there is no display of outstanding behavior. There was one example of "seek-type behavior," this type of behavior refers to a subject primarily relying on vision to seek out signage but not stopping.

Of wayfinding behaviors, visual reception of signage can be divided into direction signage, orientation...
signage, and identification signage. Fig.12. compares the three types of behavior in the course of wayfinding behavior in both facilities. There are 19 examples of "direction-type signage," a term meaning that, of visual content in the wayfinding process, 76% received direction signage; this type did not receive orientation signage in the visual content. There were five examples of "orientation-type signage," a term meaning that, in the course of wayfinding, orientation signage was received and supplemented direction and identification signage. There was one example of "identification-type signage," a term meaning that there were equal numbers of occurrences of visual content receiving direction and identification signage, while no orientation signage was received.

4.5.2 The Decision Point Type

Space forms through which wayfinding paths pass in the two facilities can be divided into the open form, the open L form, the single-side closed form, the closed form, the T form, and the four-way intersection. (Table 1.) In comparing each of the seven types of spaces through which the 24 subjects passed in the two facilities, the "correlation of wayfinding behavior and visual content with space forms" can be found. The stop behavior occurred most often in closed spaces, with as many as 57 occurrences. There is not much visual interference in close form spaces. Users rely on the directions provided by the space form to proceed; in visual content, users rely on direction signage. If no signage appears in closed spaces, then wayfinders will display stop behavior. Integrated-type wayfinding behavior occurred in closed spaces up to 11 times; there were an equal number of occurrences of this type of behavior, however, in open spaces, T-type spaces, and open spaces. This is primarily due to visual content already receiving orientation signage in open spaces, thus later lowering occurrences of visual content receiving signage in T-type spaces and open L-type spaces. Seek-type behaviors occurred roughly the same number of times in each type of space; seek-type behaviors did not occur often in behavior or in visual content for any type of space.

5. Discussion

5.1 Wayfinding of Content and Features

The 24 subjects in the two facilities produced the stop behavior most often in their wayfinding behavior, with search, legibility, and decide behaviors following in order. From this can be seen that, in terms of the frequency of wayfinding behaviors produced, the display of stop behaviors is most noticeable. On the "visual content" side, direction signage was received most frequently, followed by identification signage and orientation signage. From this can be seen that most wayfinding procedures are dependent upon direction signage and identification signage, whereas orientation signage is not often visually received in the wayfinding process.

"Wayfinding behaviors" can be divided into the categories stop-type behaviors, integrated-type behaviors, and seek-type behaviors. "Visual content" can be divided into the categories of direction-type signage, orientation-type signage, and identification-type signage. In terms of the distribution of behaviors in the two facilities, behaviors in Facility D were distributed across secondary movement paths, while behaviors in Facility Q were distributed across primary movement paths. Wayfinding behaviors in Facility D were distributed at the main entrance (D2), path D3, and E.N.T. area (D3-D12). Each area was not a primary path of the overall outpatient space. Wayfinding behaviors in Facility Q were distributed at the main entrance (Q19-Q14), path Q14, and path Q3; these three areas area all primary paths in the outpatient space. The primary factor behind the different distributions in the two facilities was that path selections and decisions were made primarily according to signage; if signage at the entrance directs paths to the destination to secondary paths, then the wayfinder will not enter main paths. From this we can see that signage at the entrance can divide human traffic into different paths.

5.2 Decision Point Type

Of decision point types, the closed form and the open L form most often produced wayfinding behavior. Out of the space forms encountered in wayfinding in both facilities, the closed space form produced the most wayfinding behaviors, with 57 instances; the direction
signage received in visual content in this form also increased. From this can be seen that wayfinders in a closed-form space produce wayfinding behaviors more often, and that signage is sought out more often in visual content. In the two facilities, open L-form spaces are most often located at entrances paths near the entrance. Visual content from wayfinders of direction signage in this space form reached 108 instances; from this can be seen that wayfinders entering outpatient space paths from open areas visually rely on direction signage.

Closed form decision point types often produce wayfinding behavior, followed by open forms and open L forms. Closed form decision point types in the two facilities often produced wayfinding behavior, primarily due to wayfinders in closed form spaces continually checking to see if they have reached their destination. Open form decision points produce wayfinding behaviors because of their quality of visual openness. Open L space form decision points connect open space and closed paths, leading subjects to check if their chosen paths are correct upon entering closed paths, thus causing an increase in wayfinding behaviors.

Stop-type behaviors most often occurred in closed form spaces, T-form spaces, open L spaces, and open spaces. In both facilities, stop-type wayfinding behaviors most often occurred in closed form spaces. Integrated-type behaviors most often occurred in closed forms, open forms, and open L forms. Seeking behavior most often occurred in closed form spaces, T-form spaces, and open spaces.

In wayfinding visual content, visual content of direction signage most often occurred in open L spaces. Visual content of orientation signage most often occurred in open spaces. Visual content of identification signage most often occurred at T-form spaces and four-way intersections.

5.3 The Impact of Signage on Wayfinding

Wayfinding behaviors in outpatient spaces are mostly reliant on direction signage. If orientation signage is examined, then wayfinding paths will differ from those relying only on direction signage. Direction signage has the greatest effect on wayfinding; wayfinders rely upon direction signage to make decisions regarding wayfinding. In the wayfinding process, subjects primarily relied on direction signage, followed by identification signage and finally by orientation signage. If visual content received orientation signage at the entrance then wayfinding paths would change and affected later reliance on direction signage and identification signage.

5.4 The Impact of Configurations on Wayfinding

Hallway-type outpatient spaces are mostly reliant upon direction signage for wayfinding. Space syntax analysis of original space and intersection analysis of wayfinding experiments found that the wayfinding paths of Facility D were not consistent with primary paths found in space syntax analysis. The primary factor for this difference was that most wayfinders in hallway-type outpatient spaces rely on direction signage for wayfinding. From this can be seen that, in differences between simple space and space with signage added, most wayfinders will rely upon signage in wayfinding.

6. Conclusion

This study performed a wayfinding experiment with 24 subjects in two facilities, investigating outpatient space wayfinding behavior from the angle of space forms and signage and with a focus on the behavior content, visual content, and space forms of wayfinding behavior. The results of this study perhaps cannot cover every problem that should be considered in designing hospital outpatient environments; for example, the figures in the indexes are also important factors to be considered. This study only focuses on the space forms of decision points as well as signage and presents the following suggestions:

1. In outpatient spaces, orientation signage is the most important in wayfinding design. The correctness and location of orientation signage should be carefully considered during design.
2. Signage at the entrance can divide traffic in outpatient spaces. Paths to and patients of different departments in the outpatient space should be appropriately divided according to location to avoid people always entering and exiting from using the same path.
3. In outpatient spaces, closed-form spaces and open spaces most often produce wayfinding behaviors. Space distribution in wayfinding design should emphasize the design of these space forms.
4. Stop behaviors most often occur in closed-form spaces. These spaces should provide clear signage in order to avoid obstruction of traffic in these spaces.
5. Visual content received in wayfinding often appears in open L spaces. Wayfinding design should provide for correct and clear guidance information in these spaces.

References