Health Literate Hospital: A Qualitative Exploration of Care Providers' and Care Costumers' Perspectives

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ABSTRACT

Background and Objectives: By considering hospitals as the workplaces where health literacy problems are most frequent and extreme, exploring the health literate health care organizations' attributes in hospital context seems inevitable. The purpose of this study was to use qualitative research method for identifying dimensions and characteristics of a Health Literate Hospital (HLH) as well as defining it.

Materials and Methods: Exploratory content-analysis, open-ended and face-to-face interviews were used to elicit participants' perspectives. Considering maximum variety, 23 care providers and 25 care recipients in Tehran participated in interviews. According to Granheim and Landman's method using MAXQDA-10 software beside manual analysis, researchers coded transcripts and collating these codes into sub-categories and then merging them into main categories and explored dimensions of the concept.

Results: Analysis of qualitative data from 48 participants led to identification of 97 codes, 24 sub-categories and finally 12 categories including; 1) facilitating access to information and services, 2) health prevention and education strategy, 3) health literacy-oriented planning, 4) provide diverse and innovative understandable media, 5) safety-based management, 6) community partnership-based service, 7) workforce health literacy-oriented training, 8) interpersonal communication, 9) health literacy leadership, 10) clear information on costs and insurances, 11) health service coordinate with the level of individuals' literacy, and 12) respecting clients.

Conclusion: Finding of this study conceptualized a Health Literate Hospital (HLH) as a multi-dimensional framework encompassing twelve attributes with health literacy approach. It is hoped that findings can be useful to guide the future researches and interventions as well as to provide the clear base for planning, implementing, and evaluating interventions aimed at promoting health outcomes. These findings can inform clinical policymakers and managers in designing policies, strategic planning, and staff training programs to strengthen the institutionalization of health literacy practices in settings like hospitals.

Paper Type: Research Article

Keywords: Health Literacy, Health Literate Health Care Organizations (HLHOs), Health Literate Hospital.

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Introduction

Health literacy is a key determinant toward achieving health outcomes and has been identified as an important public health agenda (1, 2). In the 1970s, the term of health literacy introduced in a discussion of health education as a policy matter which affecting the health system (3). Nutbeam in 1998 described the health literacy as "cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health"(4). Low health literacy directly and indirectly affects health outcomes (5). Researches have confirmed that inadequate health literacy may be a significant barrier to use of preventive health measures, self-care, healthy behaviors and the processes of Shared Decision Making (SDM) in medical interventions, patients' understanding of their diagnosis and treatments, poorer medication adherence and to receiving high-quality care(6-9). The results of researches affirm that low health literacy is associated with increased risk for emergency care and hospitalizations, prolonged recovery and complications, less management of chronic disease, less understanding of the preadmission medication regimen, physicians' recommendations and ultimately increased mortality (10-14).

Given that health is influenced by psychological, biological, and social determinants, health literacy is increasingly recognized not only as an individual attribute but also as a characteristic related to families, communities, and organizations delivering health and social services (15). Therefore, limited health literacy should be considered as a challenge for health care providers and health systems, rather than merely as an adversity for patients (16). The concept of Organizational Health Literacy (OHL) was developed in parts by different studies (17-19). Additionally, Brach et al. introduced the concept of Health Literate Health Care Organizations (HLHOs) to describe how healthcare organizations address health literacy challenges among patients. By considering the role of context and system-level factors, they described this concept as an organization that make it easier for individuals to navigate, understand, and use information and services to take care of their health (20). As a consequence, the U.S. Department of Health and Human Services (HHS) updated health literacy definition in 2021 for development of Healthy People 2030 objectives. In line with this interpretation, the HP2030 definition identify that organizations by making health-related information and services accessible and comprehensible play an important role in bolstering health literacy. Healthy People 2030 addresses both individual health literacy and organizational health literacy and also recognizes the vital role for organizations (21).

HLHOs by considering the complexity of health information and health systems, patients' needs, particular attention to the needs of diverse populations and delivering health literacy-based care could improve quality of care, eliminate health disparities and promote health equity (21-23). HLHOs should organize strategies to reduce the risks of patients' inadequate understanding of health information, providing them suitable navigation assistance and materials in the

languages of the community (24). Although Brach et al. proposed ten attributes of HLHOs, no other study has comprehensively defined or addressed the full concept. Moreover, Subsequent studies as well has investigated some of these attributes and no study has considered all 10 attributes (25). In most of the literature, organizational health literacy has been conceptualized as the ability of services providers to provide the information needs of diverse populations with limited health literacy skills. Namely, organizational health literacy has been confirmed as a capacity of the health care organizations to clear effective health communication with the patients (26-28). While some studies have focused on the capacity of the health care organizations to offers navigation assistance (29, 30).

Although, hospitals reinforce and supplement the overall effectiveness of other parts of the health system, adverse events occurring in hospitals which connected to health literacy, indicate that hospitals are the settings where health literacy problems are most frequent and severe. Therefore, explaining and redefining the concept of health literate health care organizations in hospital context seems inevitable. This paper has considered the concept of Health Literate Hospital (HLH) and exploring its attributes. Due to the importance of the subject and the impact of various roles and responsibilities in health literacy, this study was conducted using a qualitative approach to explain the concept of HLH, based on both service providers (expertise representative) and service recipients' (population representative) perspectives.

Main questions of the research:

What are the attributes of a health literate hospital?

How a health literate hospital is defined?

Materials and Methods

Research Design

We performed exploratory qualitative research with semi-structured, in-depth interviews with service providers and service recipients to identify attributes of a health literate hospital and to define the concept of HLH.

Setting and Participant Recruitment

The study was conducted in Tehran, the capital of Iran. Service providers and service recipients were two main sub-groups who were participated. Service recipients include inpatients, outpatients and visitants/relatives were selected through purposive sampling with maximum diversity such as age, gender, marital status, education, expertise, kind of hospital (governmental [public], private and charity) and medical history (e.g., kind of disease). A wide range of key informants from service providers include; physicians, clinical nurses, nursing managers and hospital managers were invited to participate in the interviews.

The target participants of service recipients were supposed to;

- Have experience of hospitalization,
- Receive outpatient services or be visitors in hospital,
- Be above 18 years,
- Have willingness to participate in the study,
- For those who were hospitalized, appropriate physical and mental status and the ability to communicate with the interviewer also were considered.

The inclusion criteria for service providers were;

- Willingness to participate in interviews,
- Having at least one year of job experience in the hospital,
- For managers at least one year of management experience was considered.

The exclusion criteria for service recipients were;

- Have serious physical, psychological, or cognitive conditions that impaired their ability to communicate effectively
- Were in critical medical condition at the time of data collection
- Declined to participate or withdrew their consent at any stage of the study

The exclusion criteria for service providers were;

- Were unable or unwilling to express their views clearly (e.g., due to institutional restrictions or personal reasons)
- Refused or withdrew participation at any point in the study process

Data Collection

The semi-structured interviews were conducted in Tehran with service recipients and service providers. Exploratory, open-ended and face-to-face interviews were used to elicit participants' perspectives on attributes of a health literate hospital. The interview guide was developed in 2 separate sections and its content validity was checked by the research team. The interviews began with main open-ended questions and continued with probing questions to explore deeper insights. (Table 1). Interviews and data analysis were conducted between July 2021 and January 2022. All procedures (before actual data collection) were approved by the Research Ethics Committee. After explaining the purpose of the study, the participants provided informed consent before the interviews. They were assured that they had the right to withdraw at any time and their information would remain confidential. Qualified services recipients and services providers were selected from diverse hospitals in Tehran. Service providers were invited to a face-to-face interview through phone calls. The interviews were mostly held in participants' workplaces (i.e. hospital), after office hours or shift. Most interviews with service recipients were held in sickrooms and waiting rooms of hospitals where they felt comfortable and agreed. Interviews with service recipients who had been hospitalized in the past few months were conducted at their home with prior appointment. In general, 25 face-to-face interviews with service recipients and 23 with service providers were held that each of them lasted from 20 to 45 minutes. Interviews continued until saturation was reached and no new code emerged. To confirm data saturation, an additional 3 services recipients and 3 services providers were interviewed with no new insights generated. To improve the data gathering quality, with the consent of the participants, interviews were audio recorded for verbatim transcription. They were assured that recordings would be deleted after the interviews were conducted.

Data Analysis

Graneheim and Lundman content-analysis method as follow was used to analyze the interviews:

1- Transcription of the interviews verbatim,

2- Reading the entire text several times to gain a sense of the whole,

3- Identification of meaning units (words, sentences, or paragraphs related to the same central meaning),

4- Condensation of meaning units while preserving the core content,

5- Coding of the condensed meaning units,

6- Grouping them into sub-categories and abstraction and formulation of main categories from sub-categories (31).

Also, the MAXQDA-10 software was used beside manual analysis. Two researchers (S R and F B) were discussed the process of analysis approach before engaging in the stages. The interviews were verbatim written and reviewed more than once. The researchers independently were read the transcripts followed by code identification from significant phrases and sentences transcripts, collating these codes into sub-categories and then merging them into main categories. The results and process were compared and reviewed several times by two researchers. Toward reach a consensus on the final set of sub-categories and categories, two researchers (M G and F B) confirmed the coding process and any disagreements were discussed until consensus was achieved. Researchers did not have any characteristics that may influence the data collection and data analysis in research process.

Trustworthiness

To demonstrate of the findings, the four criteria of credibility, transferability, dependability and confirmability were enacted (32, 33) as bellow;

1- Credibility: Prolonged engagement, thick description, allocating enough time to collect data, external checking, selecting participants with different experiences, choosing appropriate meaning units, describing how subcategory, category and themes are formed and explaining how to judge the similarities and differences between categories were employed to confirm credibility.

2- Confirmability: To ensure the confirmability criteria, prolonged engagement, persistent observation, external checks, and the search for disconfirming evidence were continuously applied throughout the research process. In addition, investigator triangulation was used by involving two researchers who independently coded and analyzed the data. To ensure rigor in the coding process, an inter-coder agreement procedure based on consensus was employed. Initially, two researchers independently coded the transcripts. Then, they compared their coding and engaged in in-depth discussions to resolve any discrepancies. Through iterative meetings, they reached mutual agreement on all codes, sub-categories, and categories. This consensus approach facilitated deeper reflection and integration of diverse perspectives, thereby enhancing the credibility and trustworthiness of the analysis. Given the qualitative and interpretive nature of the study, statistical measures such as Cohen's kappa were not applied; instead, the consensus method was considered more appropriate to capture the nuances of meaning in the data.

3- Dependability: To enact confirmation of dependability the stepwise replication by the research team and reviewing the data by independent individuals was employed. The process of research and all activities was recorded for approving of conformability so

that the whole research process will be clear and transparent to the readers.

4- Transferability: Lastly, sampling with maximum diversity and accurate description of participants, sampling method, time and place of data collection were fully performed to approve transferability.

Table 1. The Interview Guide for Exploratory Interviews with Services Providers and Services Recipients

To interview with service providers	To interview with service recipients
- How is an organization like hospital defined as a health literate? - What are the dimensions of health literate hospital? - What are the characteristics and criteria of a health literate hospital?	• What information does the hospital have to provide to you? • What characteristics should a hospital have to reduce confusion and to provide appropriate access to information and services?

Participants' Characteristics

A total of 48 individuals (25 service recipients and 23 service providers) were included in the study. In the group of service providers 17 females and 6 males were between the ages of 26 to 51 years, with a mean age of 40 years and with the averaged 16 years working experience. Service recipients were 11 males and 14 females. The details on the participants in this study are presented in Tables 2 and 3.

Eliciting Themes

As a consequence, 97 primary codes, 24 sub-categories and 12 categories were extracted. The relevant information is summarized in Table 4.

Here, we address categories as well as sub-categories;

1. Facilitating Access to Information and Services

This category refers to the degree of easy access to health information and health care services and navigation assistance which are provided by hospital. It has 2 sub-categories of navigation and access to information and health care services.

1.1. Navigation

This sub-category is concerned with the degree that hospital offers navigation assistance to patients easy find their directions in different department and location in hospital. For instance, a service provider said;

"Hospitals should provide clear directions for getting to the buildings and different department. Hospitals are complex buildings and patients or family members are confused when they move from one department to another. Hospitals should make it easier for people to navigate by providing patient navigators, visible and easily understood symbols, using signs to identify and direct patients to common locations, such as the check-in and check-out areas, exam rooms, lab, and restrooms and color-coded lines on the floors or walls." [SP18].

1.2. Access to Information and Health Care Services

A few participants noted that health literate hospital should assist service recipients in understanding and using services are offered. For example, one mentioned;

Table 2. Demographic Characteristics of Service Providers (n=23)

Participant Number	Age	Gender F: Female M: Male	Work Experience (Year)	Expertise	Position
S.P1	26	F	5	Bachelor of Science in nursing	Charge nurse
S.P2	50	F	20	Bachelor of Science in nursing	Health education and promotion supervisor
S.P3	34	F	11	Bachelor of Science in nursing	Registered nurse
S.P4	41	F	18	Master of Science in psychology	Head- nurse
S.P5	36	F	12	Bachelor of Science in nursing	Senior staff nurse
S.P6	45	F	20	Master of Science in medical education	Head- nurse
S.P7	43	F	16	Bachelor of Science in nursing	Infection control nurse
S.P8	50	F	23	General physician	Physician
S.P9	37	F	16	PhD in health in disasters	Office manager of quality improvement
S.P10	37	F	13	Master of Science in HSE	Quality improvement expert
S.P11	50	F	24	PhD in MBA	Dialysis nurse manager
S.P12	52	Fe	24	Master of Science in medical education	Nursing supervisor
S.P13	35	M	10	Bachelor of Science in nursing	Charge nurse
S.P14	35	M	5	Doctor of dentistry	Dentist
S.P15	36	M	16	Bachelor of Science in nursing	Charge nurse
S.P16	28	M	5	Master of Science in healthcare management	Charge nurse
S.P17	45	F	20	Forensic physician	Forensic doctor
S.P18	51	M	20	Cardiologist	Vice-chancellor of international affairs of university
S.P19	40	F	10	PhD in nursing (Associate Professor)	Faculty member of the School of Nursing and Midwifery
S.P20	44	F	15	PhD in nursing (Associate Professor)	Faculty member of the School of Nursing and Midwifery
S.P21	45	F	18	General physician	Transplant coordinator
S.P22	37	M	12	Specialty in thoracic surgery	Thoracic surgeon
S.P23	32	F	5	ENT resident	Student

Table 3. Demographic Characteristics of Service Recipients (n=25)

Participant Number	Age	Gender F: Female M: Male	Job Status	Literacy	Condition	Hospital TypePublic Hospital: PuPrivate Hospital: PvCharity: Ch
S.R1	35	M	Employee	Master of Science in nanotechnology	Family member	Pu- Pv
S.R2	43	M	Employee	Bachelor of science in chemistry engineering	Patient- varicocelectomy	Pu- Pv
S.R3	40	F	Housekeeper	Diploma	Patient- heart Surgery	Pu- Pv
S.R4	35	F	Housekeeper	Fifth elementary school	Family member	Pu- Pv
S.R5	35	M	Architect	Bachelor of science in architecture engineering	Family member	Pu
S.R6	60	F	Retired employee	Bachelor of science in English Language	Patient- heart Surgery	Pv
S.R7	42	M	Self-employment	Bachelor of Art in Mathematics	Patient- thoracotomy	Pu
S.R8	33	F	Housekeeper	Diploma	Family member	Pu
S.R9	65	F	Housekeeper	Middle school	Patient- covid-19 ward	Pu
S.R10	40	F	Employee	Associate in literature	Patient- covid-19 ward	Pu
S.R11	30	F	Programmer	Bachelor of Science in computer engineering	Patient- LASIK eye surgery	Pv
S.R12	56	F	Housekeeper	Diploma	Patient- gastrointestinal ward	Ch
S.R13	30	F	University student	PhD candidate of health education and promotion	Family member	Pu- Pv
S.R14	32	F	Teacher	Bachelor of Science in microbiology	Patient- cesarian section surgery	Pv
S.R15	52	F	Housekeeper	Diploma	Patient- angiography	Pv
S.R16	42	F	Housekeeper	Bachelor of science in environmental health	Patient- chemotherapy	Ch
S.R17	46	M	Pharmaceutical Manager	Bachelor of science in agricultural engineering	Patient- endoscopy	Pv
S.R18	60	M	Retired employee	Diploma	Patient- radiotherapy	Pu- Pv
S.R19	65	F	Housekeeper	Middle school	Patient- neurology ward	Pv
S.R20	42	M	Pharmacy vendor	Diploma	Family member	Pu- Pv

Participant Number	Age	Gender F: Female M: Male	Job Status	Literacy	Condition	Hospital TypePublic Hospital: PuPrivate Hospital: PvCharity: Ch
S.R21	35	M	Clothing distributor	Associate in electronic	Patient- covid-19 ward	Pu
S.R22	39	M	Electronic distributor	Bachelor of science in Food industry Engineering	Family member	Pu- Pv
S.R23	55	M	Taxi driver	Fifth elementary school	Patient- endocrinology ward	Pu
S.R24	38	F	Psychoanalyst	Master of Science in psychology	Patient- covid-19 ward	Pu- Pv
S.R25	45	M	Optometer	Bachelor of science in optometry	Family member	Pv

Table 4. Categories, Sub-categories, and Samples of Codes Obtained from Interviews

Category	Sub-category	Initial Codes
Facilitating Access to Information and Services	Navigation	Facilitating navigation for illiterate people Availability of color-coded lines on the floors or walls Existence of visible and easily understood symbols Providing technology for illiterate people
	Access to Information and Health Care Services	Standardizing and simplification admission and discharge processes Giving guidance by information kiosks Designing all process accurate and understandable
Health Prevention and Education Strategy	Preventive Information	Provide understandable information about patients' rights Provide understandable information about rules and regulations Offer accurate and clear information about para-clinical tests and results Provide information about prevention of chronic diseases (e.g., diabetes, cardiovascular diseases, cancer) Offer information to improved quality of life of patients
	Patient Education	Providing information to improved understanding of medical condition Educating the patient to improves self-care Educating the patient on post-discharge self-care Offering clear information about procedures and medications
Health Literacy-Oriented Programs	Health Literacy-Based Planning	Considering health literacy in the strategic planning Considering health literacy in the operational plans Noticing health literacy in developing the goals and objectives
	Health Literacy-Based Evaluation	Considering health literacy in accreditation Considering health literacy in evaluation of health care providers Evaluating the effectiveness of patient education Root cause analyzing for medical errors due to ineffective communication Evaluation of hospital individuals, wards and units based on health literacy strategies

Category	Sub-category	Initial Codes
Diverse and Innovative Understandable Media Provision	Media Diversity	Providing alternatives to print materials Providing cartoon, illustrations and audio-visual materials for health education Creating media based on patients' educational needs
	Innovative Media	Using new technologies for patient education Applying internet, networks, web-based information for offering health information Using electronic application Offering user-friendly mobile application
Safety-Based Management	Patients' Rights	Ensuring informed consent for invasive procedures Designing form of informed consent clear and easy-to- understand Explaining patients to inform about invasive procedures Explaining patients clearly about the benefits and risks of treatment Explaining patients clearly about the costs of appropriate treatment alternatives
	High-risk Situations	Patient education about use of medication and side effects Managing safe discharge of patient based on SMART method Establish clear communication among healthcare providers in transferring care
Participatory Services	Implementation Level Participation	Participate of patients and families in pretesting the materials Involving patients in educating other patients
	Evaluation Level Participation	Getting feedback from service recipients about patient education programs Getting feedback from service recipients regarding the quality of staff communication Getting feedback from service recipients about media and materials
Health Literacy-Oriented Workforce Training	Health Literacy Education	Considering health literacy skill in orientation sessions for new staff Considering health literacy skill in continuing education for all healthcare providers Evaluating the health literacy skills of all workforce Evaluating the effectiveness of health literacy training programs
	Patient Education Courses	Training workforce to communicate effective with patients Training workforce to apply patient education principles Training "education methods" to healthcare providers
Interpersonal Communication	Facilitating Communications	Providing effective communication for illiterate patients Availability of bilingual staff Providing translate facilities Using plain language
	Communicative Technology Usage	Providing user-friendly technology to improved communication Using technology to facilitates communication such as talking touchscreens Applying images, models and three-dimensional models to facilitate patient education

Category	Sub-category	Initial Codes
Health Literacy-Oriented Leadership	Culture Building	Creating a culture of respect patient values Creating a culture of being responsive to patients Creating a culture of patient educations as an organizational value
	Health Literacy-Based Management	Development of organizational programs for patient education Implementing health literacy guidelines Consider financial resources for patient education and media production
Clear Information on Costs and Insurances	Insurances	Offering easy-to- understand information about insurances coverage Offering clear information about procedures that are generally excluded the insurance coverage Providing adequate explanations regarding the use of supplementary insurance
	Costs	Providing clear and sufficient information regarding the cost of pre-hospital treatment Providing clear and sufficient information regarding the difference between Inpatient and outpatient cost Providing clear information about the cost of medicine, surgical procedures and intensive care room
Literacy Appropriate Services	Being Culturally-Oriented	Provide simple and appropriate equipment with patient culture Provide educational media in several languages Providing height-adjustable beds
	Limited Literacy Accessories	Providing support facilities for people unable to fill out forms Provide alternative audio-visual media Providing educational media for low health literate patients
Respecting Clients	Responsiveness	Being responsiveness to all patients and family Promote attention to patients who need emergency care Being active listener for patients and families
	Human Dignity	Preserving human dignity and respect for all patients Protecting patients' privacy Treating all patient by polite and compassion

"In my idea a health literate hospital should provide everyone with access to health information. Standardizing and simplification admission and discharge processes, giving guidance by service providers and information kiosks, making physicians available to answer questions and assistance patients in decision-making, designing all process accurate, easy-to-understand and user-friendly and offering help in a friendly way." [SP2].

2. Health Prevention and Education Strategy

This explored dimension involves 2 sub-categories of preventive information and patient education. This category refers to providing patients and their families with information in two main groups. The category "health prevention and education strategy" is used here to mean health literacy and refers specifically to the communication and educational aspects of patient-centered prevention and does not include the

organizational and policy-making strategies for health promotion.

2.1. Preventive Information

This sub-category refers to the providing information on prevention disease, health promotion interventions and other information includes; rules and regulations, patient' rights and insurances policies. A service provider said in this aspect;

"A health literate hospital should provide general information on factors influencing health and also prevention the diseases. They also should provide understandable and appropriate information about patients' rights, the rules and regulations, insurances coverage, bills and tests result." [SP12].

2.2. Patient Education

Most participants mentioned that patient education is the service providers' responsibility in a health literate hospital setting. Hospital should provide information on diagnosis and treatment options. For case, a service provider expressed;

"In my opinion, patient education should offer to all patients based on assessed needs. Moreover, effective patient education techniques should be used for specific condition such as major procedure, self-care, new medications or changes to medication. Also, hospital-to-home transitions and discharge education should begin at admission and the SMART discharge protocol should be considered." [SP11].

Or a service user said that;

"Doctors and nurses should answer all our questions on hospital-to-home transitions. We need the clear and practical information about when, where, and how to follow up, self-care after going home and use of medication." [SR15, Female, 1 week ago, Angiography].

3. Health Literacy Oriented Programs

This dimension refers to the degree of integrating health literacy in planning process. As the evaluation is essential part of planning process, 2 sub-categories were explored for this category includes; health literacy-based planning and health literacy-based evaluation.

3.1. Health Literacy-Based Planning

This is referred to integrating health literacy in strategic planning, operational planning and quality improvement. For instance, a service provider stated;

"The leaders of health literate hospital should consider health literacy in all planning process includes; developing the goals and objectives, selecting the strategies and implementing the all activities. First of all, they should focus on health literacy problem whenever collect information to assess and identification the problems." [SP9].

3.2. Health Literacy-Based Evaluation

This sub-category is pertained to regarding the health literacy in all type of evaluations. A service provider declared;

"I think as the health literacy consider in planning process, it should be regard in accreditation, quality improvement and in evaluation all interventions and activities. Additionally, evaluation of health care providers, wards and units of the hospital should be based on the health literacy." [SP9].

4. Diverse and Innovative Understandable Media Provision

This category refers to preparing and allocating the diverse and innovative materials to offer essential health information and make patient education

effective. It has the 2 sub-categories of media diversity and innovative media.

4.1. Media Diversity

Some participants noted that the needs of service recipients with a range of health literacy skills to create and serve media should be considered. Prerequisites for access to this important is development the diversity of high-quality materials. For example, one said;

"Some print materials, which are very common, are not suitable for people with limited health literacy. Alternatives to print materials includes; cartoon, illustrations and audio-visual materials are more appropriate and easy-to-understand for these people. Further, create the media should be based on patients' educational needs, their language and their culture." [SP2].

4.2. Innovative Media

This is referred to creating innovative materials to make the source widely accessible. For case, a service provider mentioned that;

"We live in a time that people commonly use internet and they have searched for health information. The hospital should use this potential to provide and distribute patient education materials. Most important topics such as tests, self-care condition and side effect of medicines could be delivered through internet in a way that is attractive, practical and widely accessible. Further, other sources such as internet, networks, web-based information and electronic applications can enhance patients understanding." [SP21].

5. Safety-Based Management

This category has 2 sub-categories of patients' rights and high-risk situations. This category refers to capability of hospital to providing safety and equity in health care based on health literacy.

5.1. Patients' Rights

Most participants mentioned that as it is one of the patient's rights to understand conditions and risks before decision making about treatment, hospital have a duty to provide health care information in simple and understandable language. A service provider stated here upon;

"All service providers specifically physicians should respect the patients 'role in medical decisions. They should explain patients and families the benefits, risks, and costs of appropriate treatment alternatives. Further, they should ensure that all patients will undergo invasive procedures with fully understanding the procedure and potential risks and benefits." [SP8].

5.2. High-risk Situations

This sub-category refers to capability of hospital to improve health literacy in order that prevent and reduce risks, errors and harm that occur to patients during providing the health care. For instance, a service provider declared;

"The increasing complexity in hospitals conduce to human mistakes. Therefore, one the most duty of a health literate hospital is improving patients' safety. The hospital should manage high-risk situations include discharge, transferring care, medication errors and the patient safety methods such as ISBAR and SMART should be followed by all staff." [SP10].

6. Participatory Services

This dimension with 2 sub-categories of implementation level participation and evaluation level participation is pertained to

the ability of hospital to engage service recipients and community members in the implementation and evaluation of health information and services.

6.1. Implementation Level Participation

This sub-category is concerned with the capability of hospital to engaging service recipients and community members in implementation of health information and services. For instance, one mentioned about this;

"In my opinion, we can involve our patients in creating materials include the topic they need information about and the kind of materials they are preferred. We can also pretest our materials with a few of them and ask them about their understanding of information or photos." [SP4].

6.2. Evaluation Level Participation

Some participants mentioned that service recipients can participate actively in evaluation of health information and services. For case, a service provider said;

"We can ask patients for feedback on our materials and media, our faciliatory in navigation and also their care experiences. Most importantly, we can ask them for feedback on the quality of our health care information and services." [SP19].

7. Health Literacy-Oriented Workforce Training

This explored dimension involves 2 sub-categories of health literacy education, patient education courses, and refers to ability of hospital to providing health literacy training and educational techniques training programs for all staff.

7.1. Health Literacy Education

This sub-category is pertained to capability of hospital to train health literate staff. For example, a service provider tolled us;

"At the point of my view, the concept of health literacy is still unfamiliar to healthcare providers. The hospital should consider the health literacy skill in all training programs such as orientation sessions for new staff and continuing education. Also, evaluating their health literacy skills should be noticed in every year education programs." [SP20].

7.2. Patient Education Courses

A few participants noted that healthcare providers should be noticed to patient education principles and a health literate hospital should ensure that all the staff were trained in educational techniques. A service provider stated here upon;

"At the first step, health care providers should understand the importance of effective communication with patients. Also, they should know the role of effective patient teaching in quality of health care. The principles of effective communication with patients and the principles of patient education must be taught to all staff." [SP2].

8. Interpersonal Communication

This category refers to the strategies that hospital invokes to build effective health communication habit among all staff and improved quality of patient-provider communication. This category has 2 sub-categories of facilitating communications and communicative technology usage.

8.1. Facilitating Communications

Most participants mentioned that a health literate hospital is responsible for following clear and understandable communication techniques. A service provider declared;

"Our patients even the literate is confused by medical terms. The healthcare providers should use plain language in communication

with patients and their families. They should increase patient understanding by explaining uncommon words and avoiding jargon. Moreover, they should consider language and culture of their patients. A health literate hospital should respond language differences and provide translating facilities such as recruiting bilingual staff." [SP22].

8.2. Communicative Technology Usage

This sub-category is concerned with ability of providing technology that overcome barriers of low health literacy and facilitates communication. For instance, one said;

"A health literate hospital should offer user-friendly technology which facilitates communication for individuals with limited health literacy such as talking touchscreens, various subtitle language and podcasts." [SP17].

9. Health Literacy-Oriented Leadership

This category involves 2 sub-categories of culture building and health literacy-based management, and refers to the ability of hospital leaders to creating a culture that values service recipients and dignity and respect are part of the hospital's culture.

9.1. Culture Building

A service recipient under chemotherapy said that; "In my opinion, in a health literate hospital respect for patients and families is the most important point. Healthcare providers should respect patient values and culture. Also, they should listen to patient, spend time for answering all our questions and respect our time. They are responsible for patients' satisfaction." [SR16, Female, Chemotherapy].

9.2. Health Literacy-Based Management

Some manager mentioned that a health literate hospital should implement health literacy guidelines and strategies. A service provider declared;

"As a leader, I believe that we need sustaining change and in order to achieving that, health literacy should consider in all meeting, policies and procedures. Additionally, we need to observe and evaluate our system continually." [SP9].

10. Clear Information on Costs and Insurances

This explored dimension is concerned with readiness of hospital to provide clear information about health insurance coverage and costs of care and health services. It has the 2 sub-categories of insurances and costs.

10.1. Insurances

This refers to the hospital duty to offer clear information of insurances which is essentially unique to health care include the costs of care, insurances coverage, the amount of deductible (the amount paid out of pocket before insurance kicks in) and co-pay (the amount paid out of pocket after the insurance has kicked in). For instance, a service provider stated;

"Hospital should provide simple, clear and consistent information about insurances coverage. Further, the hospital should offer understandable information about coverage for specific treatments and procedures, procedures that are generally excluded the insurance coverage and the degree of coverage." [SP17].

10.2. Costs

This subcategory is concerned with the information which hospital should provide about costs. For case, one of service providers said;

"A health literate hospital should offer clear and easy-to-understand information

regard difference between inpatient and outpatient costs, inpatient expenses per day at hospital, cost of medicines, surgical procedures' cost, private hospital room's fee and intensive care rooms fee, out-of-pocket cost policies and out-of-pocket expenses." [SP17].

11. Literacy Appropriate Services

This dimension deals with hospital duty to remove various health literacy barriers includes; cultural and linguistic barriers, illiteracy and communication barriers. It involves 2 sub-categories of being culturally-oriented and limited literacy accessories.

11.1. Being Culturally-oriented

Some participants mentioned that a health literate hospital should endeavor to remove cultural barriers like unfamiliar norms and language which lead to health disparities. For instance, a service provider declared that;

"I believe that one of the most duties of a health literate hospital is removing cultural barriers. In some cultures, it is common to sleep on the floor instead of a bed. These patients are unfamiliar with using bed and are at risk of falling down. So, it is the hospital duty to increase options and capacity. Namely, the hospital should use height-adjustable beds." [SP12].

11.2. Limited Literacy Accessories

This refers to responsibility of hospital to provide assist facilities for illiterate people such as developing appropriate materials. For example, one stated;

"Healthcare providers in a health literate hospital, assist patients with limit health literacy actively. They do not use jargon and explain all instruction with short and simple sentences. They also assist people to fill out forms. Moreover, hospital is responsible to provide appropriate educational materials for patients with limited literacy like multimedia products." [SP19].

12. Respecting Clients

This category is pertained to role of health literate hospital in providing respectful health services and information and it has 2 sub-categories of responsiveness and human dignity.

12.1. Responsiveness

Some participants mentioned that a health literate hospital has a responsiveness workforce. For instance, a woman that was hospitalized due to heart surgery said us;

"Patients have some expectation that commonly are ignored by healthcare providers. Physicians and nurses should listen to their patients and explain to patients, who they are. Some patients need prompt attention while the physicians leave them unattended or ignored." [SR3, Female, at the time of study, heart surgery].

12.2. Human Dignity

A man who had varicocelectomy surgery in the past year stated that; "All patients deserve to be treated with dignity. Healthcare providers should treat them with respect, polite and compassion. They must protect our dignity and privacy and ask permission for touch our body. Most of them do not respect patient' time and humiliate patients. It is the responsibility of hospital to change these disparities." [SR2, Male, 1 year ago, varicocelectomy surgery].

Ultimately, in order to respond the main questions of research and based on findings, we could summarize and present schematic conceptual explanation as well as definition of a health literate hospital as Figure 1. Our

proposed definition considers a Health Literate Hospital (HLH) as:

"a hospital with twelve attributes which has health literacy-oriented planning, safety-based management, and health literacy leadership and by applying and focusing on health prevention and education strategies, workforce health literacy-oriented training, interpersonal communication and offering diverse and innovative understandable media; provides clients with facilitating access to information and services, health service coordinate with the level of individuals' literacy, clear information on costs and insurances, respecting clients and community partnership-based services in order to create an environment that enables people to access and benefit optimally from the range of health care information and services".

***A health literate hospital** could be defined as a one that has the twelve attributes including; health literacy-oriented planning, safety-based management, health literacy leadership and health prevention and education strategy and by applying and focusing on workforce health literacy-oriented training, interpersonal communication and offering diverse and innovative understandable media; provides clients with facilitating access to information and services, health service coordinate with the level of individuals' literacy, clear information on costs and insurances, respecting clients and community partnership-based service in order to create an environment that enables people to access and benefit optimally from the range of health care information and services*

Figure 1. The Schematic Conceptual Explanation of a Health Literate Hospital & Proposed Definition

Discussion

As there was no any research on health literate hospital precisely like present study and this concept was defined here for the first time, discussion of our findings in comparison to prior studies is difficult. Although as we

expected, there was similarities between our results with HLHOs defined by Brach et al.(20). They presented 10 attributes that exemplify a health literate health care organization that as a point of departure in this discussion. Facilitating access to information and services determined in this study which include; facilitating access to information and health care services and facilitating navigation, was very similar to one of the attributes which have defined by Brach et al.(20). Additionally, other studies confirm that healthcare services can be confusing and complicated for patients and facilitating navigation can reduce health disparities and improve quality of care (34-36). According to Freeman's nine-principal framework of patient navigation, Peart et al. have suggested that informed and involved patient, receptive and responsive health professionals and a coordinated, supportive healthcare environment are the elements of patient-centered care(37).

Health prevention and education strategy as another dimension is referred to offering health information and patient education. Our findings suggest that patient education should be consider as an independent attribute of a health literate hospital. In contrast, Brach et al. have mentioned patient education in the other attributes. Not surprisingly, findings reported by other healthcare specialists confirm that patient education is one of the responsibilities of the health care systems (38, 39).

Health literacy-based planning and evaluation as a sub-category of health literacy-oriented planning was extracted in the present research. In line with this result, Brach et al. has suggested to integrating health literacy into planning, evaluation measures, patient safety, and quality improvement. It should be noted that in another dimension of health literate hospital concept, we deal with safety-based management independently. In this context, other researchers pointed out that health literacy should be conceived as an organizational issue and should be engaged both the strategic and the operational planning (23, 40, 41).

Recently, the patient-centered care is increasingly being suggested as a pathway to improve quality of care and better health outcomes. As health care has moved to a patient-centered care approach, patient education must be improved to in order to promote patients' perception and understanding of their medical conditions (42, 43). Providing diverse and innovative understandable media was another extracted category. Similarly, designs and distributes print, audiovisual, and social media content was another attribute of definition of Brach et al. (20). Moreover, researchers mentioned that the use of non-traditional materials, novel technologies such as 3-Dimensional (3D) printing and intelligent technology such as online interactive tools, facilitate patient's understanding and improve health outcomes (44-46).

Respecting the patients' rights and management of high-risk situations as a sub-category of safety-based management were extracted. Gottesman, described that informed consent lead to increasing patient safety as a result of providing comprehensive education and is one the most important rights of patients, is to be fully understand the procedures and potential risks and

benefits(47, 48). Notably, many healthcare specialists suggest the patient safety will improve by management of high-risk situation and applying safety methods such as ISBAR and SMART (49-52). Similarly, addressing health literacy in high-risk situations was highlighted as an attribute of HLHOs by Brach et al. (20).

Community partnership-based service refers to engage service recipients and community members in the implementation and evaluation of health information and services. Patients and family members can take on specific roles in healthcare organization. They can involve in the development and design of information and services and also in health technology assessment (52, 53). Also, including populations served in the design, implementation, and evaluation of health information and services was defined as an attribute of a HLHOs by Brach et al. (20).

Workforce health literacy-oriented training was another category which contains education and train the healthcare provider and all staff. Our data suggest that the concept of health literacy and the principles of effective patient education should plan as a mandatory workforce training. Saunders et al. have described that healthcare organizations should enable workforce education planning to the aim of better understanding of the health literacy (54). Moreover, one investigation have reported that an important strategy for improvement healthcare provider health literacy skill is making health literacy trainings mandatory (55). As well as, Brach et al. emphasized that “everyone” in a health literate health care organization needs health literacy training (20).

The importance of healthcare provider communication with patients has been well described in a large number of literatures (56-59). Our findings suggest that interpersonal communication as a dimension of HLH. Most of the literature addressing the HLHOs as the capacity to obtain clear and understandable communication with the patients (24). Alternatively, delivering patient-centered care is increasingly being suggested as a pathway to improve quality of care and better health outcomes. Prerequisite of patient-centered care, is promoting patient-provider communication and engagement of patients in decision-making process (60).

Health literacy leadership as another explored dimension refers to creating a health literacy culture and implement health literacy guidelines and strategies. The guides emphasize that the implementing and sustaining health literacy in healthcare organization requires strong and effective leadership who integration of health literacy in strategic planning (61-63). Brach et al. have described that health literacy leadership takes a difference of forms such as focusing on prioritizing effective communication and creating a culture of health literacy (20).

Clear information on costs and insurances was extracted as an attribute of HLH and concerned with the information which hospital should provide about costs and insurances. This category was very similar to one of the Brach et al. described attributes, which mentioned that individuals need clear, consistent, and comparable information about health insurances coverage and the costs(20).

The literature review confirmed that culture provide the appropriate context for understanding of health information and enhancing health literacy (64-66). Our findings confirm that a health literate hospital should consider patients' disabilities and provide culturally appropriate health information and services to overcome cultural and illiteracy barriers. Differently, Brach et al. have focused just on reducing the stigma associated with limited health literacy (20).

Respecting clients was last identified dimension and refers to preserve of human dignity and responsiveness workforce. Presently, some healthcare specialists believed that being treated with dignity and respect associated with positive health outcomes. Indeed, it is healthcare organization responsibility to establish a culture that treats patients with dignity and respect (67-69).

Finally, we can say that this attempt to explain the concept of a health-literate hospital revealed that both professional and public perspectives in Iranian society encompass the 10 attributes of Health Literate Health Care Organizations within the organizational setting known as a hospital. In addition to these features, Health Prevention and Education Strategy and Respecting Clients were also identified as exclusive the attributes in the present study and were examined accordingly. (See similarities and differences of HLHOs and HLH as mentioned in discussion in Table 5).

Study Limitations and Strengths: Probably, the findings of the present study will be useful in programs aimed at improving quality of healthcare in hospitals and clinical settings. The other strength of our research was using a range of service providers and service recipients with maximum diversity that could help generalizability as possible as. This study has limitations that need to be considered when interpreting the results. One of the limitations was the distrust of interviewer by the service recipients in some cases. They were imagined that if they offered negative information about hospital, they would be denied of health services. For overcoming this limitation, the interviewer assured their information would remain confidential and will not be transferred to service providers. Another limitation was the low generalizability of qualitative studies and non-generalizing to other societies which was overcome by sampling with maximum diversity. Although cultural diversity was considered, it is recommended to conduct this research in other cultures and clinical environments.

Conclusion

This study aimed to conceptualize the construct of a Health Literate Hospital (HLH) through qualitative inquiry involving healthcare providers and service recipients. By analyzing their experiences and perspectives, the study identified a multi-dimensional framework encompassing facilitating access to information and services, health prevention and education strategy, health literacy-oriented planning, provide diverse and innovative understandable media, safety-based management, community partnership-based service, workforce health literacy-oriented training, interpersonal communication, health literacy leadership, clear information on costs and insurances, health service

coordinate with the level of individuals' literacy, and respecting clients. This framework advances the theoretical understanding of HLH and clarifies how hospitals can systematically support patients' ability to access, understand, and use health information and services.

Table 5. Matching View on Attributes of HLHOs (Brach et al., 2012) and HLH (Findings of Present Research, 2022)

No.	Health Literate Health Care Organizations	No.	Health Literate Hospital
1	Has leadership that makes health literacy integral to its mission, structure, and operations.	1	lealth Literacy-oriented Leadership Culture Building Health Literacy-based Management
2	Integrates health literacy into planning, evaluation measures, patient safety, and quality improvement.	2	lealth Literacy-oriented Programs Health Literacy-based Planning Health Literacy-based Evaluation
3	Prepares the workforce to be health literate and monitors' progress.	3	lealth Literacy-oriented Workforce Training Health Literacy Education Patient Education Courses
4	Includes populations served in the design, implementation, and evaluation of health information and services.	4	articipatory Services Implementation Level Participation Evaluation Level Participation
5	Meets the needs of populations with a range of health literacy skills while avoiding stigmatization.	5	iteracy Appropriate Services Being Culturally-oriented Limited Literacy Accessories
6	Uses health literacy strategies in interpersonal communications and confirms understanding at all points of contact.	6	nterpersonal Communication Facilitating Communications Communicative Technology Usage
7	Provides easy access to health information and services and navigation assistance.	7	acilitating Access to Information and Services Navigation Access to Information and Health Care Services
8	Designs and distributes print, audiovisual, and social media content that is easy to understand and act on.	8	iverse and Innovative Understandable Media rovision Media Diversity Innovative Media
9	Addresses health literacy in high-risk situations, including care transitions and communications about medicines.	9	afety-based Management Patients' Rights High-risk Situations
10	Communicates clearly what health plans cover and what individuals will have to pay for services.	10	lear Information on Costs and Insurances Insurances Costs
		11	lealth Prevention and Education Strategy * Preventive Information Patient Education
		12	especting Clients * Responsiveness Human Dignity

* Attributes Explored Exclusively in Content Analysis of Present Study

These findings provide a solid basis for developing valid and context-specific assessment tools, as well as guiding the design and evaluation of interventions aimed at promoting organizational health literacy. Future research should focus on testing the applicability of this framework in diverse healthcare settings and exploring its impact on patient engagement, service quality, and health equity. To translate these insights into practice, hospital administrators are encouraged to recognize health literacy as a strategic priority, develop leadership structures that support its implementation, invest in staff training, and tailor services and communication to the literacy levels and cultural contexts of the population they serve. These steps will help create health literate organizations that deliver more effective and equitable care.

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Ethics approval and consent to participate: This study was conducted in accordance with the principles of the Declaration of Helsinki and received approval ethical research code from ethics Committee of Shahid Beheshti University of Medical Sciences (Approval ID: IR. SBMU. PHNS. REC.1400.054: Approval Date: 2021-09-14). All participants were fully informed about the study aims prior to any participation in research activities and they had the opportunity to ask questions throughout the study. Then, the participants signed a letter of informed consent which it was clearly mentioned they are allowed to exit the study whenever they wish and for any reason. All data remained confidential and anonymized. Permission to take notes or record audio were obtained and audio files deleted after research.

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