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Assessing the Status of Age-Friendly Hospital Environment in Tertiary Hospitals: Descriptive Explorative Study

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ABSTRACT

Background : The aging population and comorbidities among older adults increase the demand for health services, emphasizing the need for an age-friendly hospital environment to address their unique needs, reduce healthcare costs, and enhance overall well-being. Therefore, this study assessed the status of age-friendly hospital environments to identify areas for improvement in meeting age-friendly standards to ensure better health care experiences.

Methods : A descriptive explorative study was conducted in two tertiary-level referral hospitals in Kathmandu, Nepal. The data was collected through direct observation of existing hospital services and environment using a checklist after obtaining ethical and administrative approval. The wards of both hospitals were selected purposively. Data were analyzed using descriptive statistics (frequency and percentage).

Results : Regarding the status, 43.9% of hospital services and infrastructure in hospital 1 and 54.5% of the hospital 2 fulfilled the criteria of age friendliness. Although both hospitals were accessible to older adults, only 26.9% and 38.4% of hospital services, and 54.1% and 64.9% of the physical environment of both hospitals met the criteria of age-friendliness. Both hospitals lacked screening protocols, dedicated geriatric services, geriatricians or trained human resources, volunteer support, and priority systems for older adults.

Conclusion : More than half of the age-friendly environment criteria were met by only one hospital in terms of services and infrastructure. To ensure better healthcare experiences for older adults, it is recommended to develop clear hospital policies/protocols, provide training, and optimize the management of existing services and physical infrastructure.

Keywords: *Age-friendly hospital environment, age-friendly principles, older adults*

INTRODUCTION

The aging population is of global concern. In the South-East Asia Region, older adults aged 60 or above is expected to increase to 13.7% and 20.3% by 2030, and 2050, respectively.[1] In Nepal, there are 2.97 million (10.21%) older people as of the 2021 census.[2] The growing trend of an aging population is continuously increasing the cost of health care accounting for approximately 60% of healthcare expenditures. [3]

Chronic diseases are the leading cause of illness and disability and it is associated with increased use of healthcare resources,[4] increased psychological distress, decreased quality of life, long term hospitalizations, and death, [5,6] these all emphasize the need to establish age-friendly hospitals.[7] Augustine [8] mentioned that a separate OPD, queue, admission, and billing counter for older adults, non-slippery floors, good lighting, wide doors, elevators, corridors, including easy accessibility to the physical environment are important physical features for age-friendly hospitals. Moreover, signboards with big letters and contrasting backgrounds are essential to enhance visibility. [10]

The World Health Organization addresses creating age-friendly environments as the fourth priority area for action.[11] Various studies have emphasized the need for age-friendly hospital environments to improve health outcomes & quality of life and have started age-friendly hospital services with the development of certain policies and frameworks. In Nepalese context, although Geriatric Health Service Strategy 2021-2030 [12] and the Geriatric Health Service Program Implementation Guideline, 2023 [13] focused on establishing age-friendly hospital services, including dedicated wards for older adults, its implementation has remained inconsistent across the country and there is no evidence regarding current status of age friendliness of the environment. Hence, this study addresses this gap by providing the evidence that can guide for the improvements in age -friendly health care services.

METHODS

A quantitative descriptive exploratory observational study was conducted in two tertiary-level referral hospitals in Kathmandu, Nepal. These hospitals are centrally located, tertiary-level, multi-specialty, referral hospital with diverse services and departments for all over Nepal with increase patient occupancy. An easily accessible location has made a large number of older adults to be treated in these hospitals. The hospitals were selected purposively as it was easily accessible and approachable for the researchers as well. Ethical approval was obtained from the Institutional Review Committee (IRC) of the Institute of Medicine, Tribhuvan University [Ref no. 478(6-11) E2 077-078] and administrative approval from the concerned hospitals. Data was collected within two weeks (3rd Jan 2022 to 17th Jan 2022) through direct observation of existing hospital services and the physical environment of purposively selected wards (medical wards, general wards, and cabins of both hospitals [Hospital one (H1) and Hospital two (H2)] by using an observational checklist which was developed based on the "WHO Age Friendly PHC Toolkit"[14], Rashmi's checklist [15], and extensive literature review. It consisted of 66 items that included accessibility (3 items), hospital services (26 items), and physical environment (37 items). To establish the validity of the instrument, consultation was done with the Geriatrician, research experts, and fellow researchers. The research team conducted structured observations covering different wards of two tertiary hospitals by moving from one ward to another according to a pre-determined schedule. For observation, co-ordination was done with hospital administration, followed the hospital protocol prior to observation. Two researchers conducted observations simultaneously to maintain inter-rater reliability and maintain consistency across all areas. Some clarifications regarding hospital services were obtained through consultations with hospital administrators. Based on age-friendly principles, general observation and recordings were done by the research team in a yes/no form.

For analysis, all the observational checklists of the hospital and respective areas were reviewed thoroughly. Score one (1) was given for "Yes" and zero (0) for "No". The obtained scores were summed up and converted into a percentage. Descriptive statistics (frequency and percentage) was used to assess the presence and absence of age-friendliness in both hospitals.

RESULTS

Table 1: Assessment of accessibility and hospital services

Subscale	Items	H1	H2
Accessibility	Bus station is near the hospital.	1	1
	Provision of special parking space for older adults.	0	0
	Accessible entrance to wheelchair users.	1	1
Hospital Services	Provision of protocols/policies to screen older patients.	0	0
	Reception counter is near the entrance and easily identifiable.	0	1
	Provision of system of priority for seniors in the reception counter, pharmacy to collect drugs, and billing	0	0
	System of concessions in services.	0	0
	Provision of insurance	1	1
	Availability of volunteers to guide seniors	0	0
	Provision of handrails with easy-to-grip in all areas	1	0
	Availability of telephones in all important areas of hospitals	0	0
	Availability of wheelchairs at the entrance	1	1
	Adequate space for the use of a wheelchair, or walker in ward	1	1
	Provision of instructions for preventive services,	0	0
	Availability of Geriatric physicians/nurses in the hospital.	0	0

Note: 1=yes,0=no

Table 1 shows that both hospitals had nearby bus stations, parking, and wheelchair-accessible entrances, there were no separate parking areas for senior citizens. The

hospitals did not have protocols and policies to screen senior patients, priority system and volunteer support. Although insurance facilities were available, there were no concessions in either hospitals. Telephones were not present in all key areas of hospitals. Moreover, none of the hospitals had geriatric physicians/nurses available**.**

Table 2: Assessment of inpatient and outpatient hospital services

Subscales	Items	H1	H2
Inpatient services	Separate ward for older patients.	0	0
	Allow caregiver to stay with seniors.	1	1
	Recreational activities for senior patients.	0	0
	Provision for cultural/ religious practices in the ward.	0	0
	Availability of protocols to prevent geriatric syndromes.	0	0
Outpatient services	Separate queue for older adults at all counters.	0	1
	Separate OPD for older adults in the hospital.	0	0
	System of giving appointments (through phone call, online) and reminders for seniors.	0	0
	Waiting area.	1	1
	Sitting arrangement.	1	1
Admission and billing	System of priority in the admission process.	0	1
	Priority in the billing counter for older adults.	0	1
Ideal timing for visits	Specified time to provide special services.	0	0
	Specified times to visit admitted senior patients.	0	0

Note: 1=yes,0=no

Table 2 reveals that none of the hospitals have a separate ward, OPD, specified visiting hours and recreational activities. The caregivers were allowed to stay with older patients, and cultural or religious practices were accommodated, particularly in end-of-life care. Both hospitals have a waiting area and seating arrangements. There was a system of priority for older adults in the admission and billing counter in one hospital (H2).

Table 3: Assessment of physical environments in the hospitals

Subscales	Items	H1	H2
Bed	Beds are folding/adjustable.	0	1
Light	Enough light is in the entrance, passage, wards, and toilet.	1	1
	Provision of dim light at night in the ward.	1	1
Doors	Wide doors.	1	1
	Wide enough for the wheelchairs	1	1
Elevators and Corridors	Wide and spacious elevators and corridors.	1	1
	Availability of elevators (lifts) at each floor.	1	1
	Easily identifiable access to different sections.	1	1
Ramps/ staircase	Presence of ramps for wheelchair users and railings in staircases.	1	0
	Uniform and friendly steps to seniors.	1	0
	Non-slippery Floor	0	0
Clocks and calendars	Large clocks and calendars	0	0
Furniture	Provision of an adjustable/electric adjustable bed.	0	1
	Bed with side rails.	0	1
	Chair with an arm and a formed cushion.	0	1
	Availability of over the bed tables.	0	1
	Availability of footsteps.	1	0
Toilets	Availability of toilets in all important areas of the hospital, including the wards, OPD, and on each floor.	1	1
	Availability of alarm in each toilet.	0	0
	Non-slippery, clean, and dry toilet floors.	1	1
	Grab rails are present in toilets.	1	1
	Presence of two-way opening doors in toilets.	0	0
	Auto-flush system in the toilet.	0	0
	Auto on/off present in sink faucet.	0	0
	The toilet paper dispenser is accessible.	0	0

Note: 1=yes,0=no

Table 3 highlights the status of the hospital's physical environment for older adults. Both hospitals had essential

facilities such as adequate lighting in entrances, corridors, wards, and toilets, as well as dim lighting at night in wards. Wide doors, spacious elevators, and corridors were available but required maintenance. Small clocks and calendars were only placed near the nursing station. Toilets were present in key areas including wards, OPDs, and each floor; however, they lacked alarms, auto-flush systems, accessible toilet paper dispensers, and easy access to towels or hand dryers.

Table 4: Assessment of way finding, and signboards related to physical environment

Subscale	Items	H1	H2
Way finding	Clear demarcation of different areas/departments	1	1
	Uncluttered passage to ensure that patients can see their destination	1	1
Signboards	Placement of all the signs at eye level	1	1
	Presence of signboards in all important areas of the hospital (OPD, corridors, service areas, and every floor)	1	1
	Large and bold letter sizes for better visibility	0	1
	Simple and easy to understand visual displays	1	1
	Uncluttered writing with a simple message	0	0
	Key locations (e.g. bathroom) with signs perpendicular to the wall for easy identification	0	1
	Displayed words and signage in simple language	1	1
	Use of pictures and color for its effectiveness.	0	0
	Displayed directional signs at places with a change of direction.	1	1

Note: *1=yes,0=no*

Table 4 shows all the signs are placed at eye level in all special areas of the hospital. The visual display was simple and easy to understand. In one hospital letter sizes were small. There were no key locations (e.g. bathroom) with signs perpendicular to the wall for easy identification whereas it was available in another hospital. Directional signs were displayed at places. Regarding picture and color, it was used in waste management containers in one hospital but lacking in another hospital.

Table 5: Status of age-friendly hospital environment

Subscales (Items)	Hospital 1		Hospital 2	
	Yes	No	Yes	No
	N (%)	N (%)	N (%)	N (%)
Accessibility (3)	2 (66.7)	1 (33.3)	2 (66.7)	1 (33.3)
Hospital services (26)	7 (26.9)	19 (73.1)	10 (38.4)	17 (61.6)
Physical Environment (37)	20 (54.1)	17(45.9)	24 (64.9)	13 (35.1)
Total	**29 (43.9)**	**37 (56.1)**	**36 (54.5)**	**30(45.5)**

Table 5 reveals the status of age-friendly hospital environment in both tertiary level multispecialty hospitals that shows in H1 hospital 43.9%, and in H2 hospital 54.5% of the hospital services and infrastructures were age-friendly. Regarding age-friendly hospital services, only 26.9% and 38.4%, respectively fulfilled the criteria of age-friendliness, whereas 54.1% and 64.9% of the hospitals met the criteria of age-friendly physical environment in H1 and H2 hospitals respectively.

DISCUSSION

This study reveals that the hospital had access to a transportation facility and the entrance was accessible to wheelchair users. However, the parking system was not designated for senior citizens. The hospitals did not have protocols and policies to screen senior patients; there was no system of giving priority and volunteers were not available to guide seniors in both hospitals. Telephones were not available in all important areas of hospitals. Similar to this findings, Rashmi [15] and Hung et al.[3] mentioned that accessibility of the hospital [15] special parking spaces near the hospital, and separate entrances are important criteria for senior friendliness in hospitals.[3] In most hospitals (81.0%), there was a lack of protocol for screening older patients, a lack of a system of priority and not having of a special telephone line which are consistent with the findings of present study.[16] There was no instruction for preventive services for counseling on three common risk factors in this study but in contrast, Ahmadi et al [16] reported having instruction in most hospitals. Similarly, none of the hospitals had geriatric physicians/nurses available in this study. Consistent with this finding, trained and experienced healthcare providers in geriatric fields were scared even in developed countries.[3,17] Geriatric physicians were available only in

one hospital for elderly patients. [16] Geriatric health service strategies, [12] has mentioned the need to implement human resource plan for making professionally competent, trained human resources for an effective geriatric health service delivery.

In this study, none of the hospitals have a separate ward/ OPD, specified time to visit and provide special services, recreational activities for senior patients, and availability of protocols to prevent geriatric syndromes. There was a provision for an online appointment system but did not have a system of reminders to remind older patients of their appointments. Priority was given to older adults at the admission and billing counter in one hospital. Similar to these findings, hospitals did not have a special ward and lacked a system of priority, a system of reminders of their appointments. [16] Geriatric Health Service Strategies [12] focus on strengthening the health care services of the health system by establishing and operating well-equipped hospital department with a geriatric specialty , set up and operate separate ward for the care of senior citizens with the capacity of more than 100 bed in the health institutions.

Regarding the physical environment, the hospital had essential facilities for the senior patient. Enough light, dim light at night, wide doors enough for wheelchair clearance, and elevators were available. Beds with side rails were not available in all beds. Though toilets were available in all important hospital areas, there was no alarm in the toilet, the door could not be opened both ways, had no auto flush system, toilet paper dispenser, and easy access to a towel or hand dryer but grab rails in the toilets were available in only one hospital. These findings are consistent with the study conducted by Ahmadi et al.[16] in which hospitals had the necessary facilities (50.0%), good lighting (88.0%), wide rooms, and doors (100%) and there were elevators in almost all the floors. Toilets were present in all important areas (92%), and had grab rails but lacked an alarm system in more than half of the studied hospitals. [18] Providing well-designed appropriate environments helps to enhance the functional ability of older adults during hospitalization and maintain their quality of life for discharge. [6]

The present study shows that the hospitals have a clear demarcation of different areas/departments and an uncluttered passage. All the signs are placed at eye level in all important areas of the hospital. The visual display was simple and easy to understand. In contrast, in most hospitals the words and signboards were not displayed in the local language. The additional use of pictures/ symbols is helpful for visually impaired or illiterate individuals. [19] Regarding the status of the hospital, 43.9% and 54.5% of the hospital services and infrastructures were age-friendly. Similar to this, Tajvar et al. [20] mentioned that the mean score of age-friendliness was 51.7 out of 100, and no significant relationship was found between the characteristics of hospitals and their age-friendly scores.

CONCLUSION

More than half of the hospital services and infrastructure were age-friendly in only one of the hospitals, whereas in another hospital, it was below the expected benchmark. Although both hospitals were physically accessible to older adults, neither had protocols or policies in place for screening older patients. Additionally, there were no dedicated geriatric wards/outpatient departments, separate queues, or priority systems, provision of volunteers to assist them, or availability of geriatricians and trained healthcare personnel specialized in geriatric care. Thus, it is recommended that hospital authorities incorporate WHO age-friendly principles and standards into institutional policies and develop a comprehensive protocol for managing existing physical infrastructure, ensuring easy access to hospital services and facilities, and implementing the Geriatric Health Service Implementation Guidelines for providing services to older adults.

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CONFLICT OF INTEREST

The authors declare no any conflict of interest in publishing this article.

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