STRATEGIES TO IMPROVE PATIENT SATISFACTION IN HOSPITALS: SYSTEMATIC REVIEW

Aljawharah Hamdan Aziz Alanazi^{1*}, Jawharah Ayesh Alanzi², Alhulwah Saiq Alkuwikybi³, Shuaa Hamdan J. Alenezi⁴, Mawahib Ghazi Awadh Alruwaili⁵, Maha Shwiht Alenezi⁶, Taghreed Awadh Abdullah Alanazi⁷, Fadhah Abdullah Juayran Alanazi⁸, Nada Mudhhi Shawkan Alanazi⁹, Maryam Mohammed Alanazy¹⁰

Abstract:

Patient satisfaction is a critical indicator of the quality of care provided by hospitals, reflecting the overall experience patients have during their interactions with healthcare providers and facilities. In today's healthcare landscape, hospitals are increasingly focusing on strategies to enhance patient satisfaction, recognizing its importance in fostering trust, improving health outcomes, and attracting new patients. This essay explores various strategies aimed at improving patient satisfaction in hospitals, including patient-centered care, effective communication, reducing wait times, staff training, and leveraging technology. By understanding and implementing these strategies, hospitals can create environments that prioritize patient needs and preferences, ultimately leading to higher levels of satisfaction and improved healthcare outcomes. The proposed framework encompasses assessing patient needs, implementing patient-centered care delivery, improving communication, ensuring care coordination, enhancing physical comfort, and continuous feedback and improvement. Additionally, the utilization of technology offers immense potential to engage patients in their care, enhance communication, and personalize care delivery, ultimately driving excellence in healthcare delivery and improving patient satisfaction.

Keywords: Patient satisfaction, Hospital setting, Patient-centered care, Communication, Waiting times, Staff training.

DOI: 10.53555/ecb/2022.11.7.76

^{1*}Nurse technician, Department of Forensic Medicine, Northern Border University, Arar, Saudi Arabia

²Nurse technician, Department of Forensic Medicine, Northern Border University, Arar, Saudi Arabia

³Nurse - north medical tower, Arar

⁴Nurse technician, Department of Forensic Medicine, Northern Border University, Arar, Saudi Arabia

⁵Technician-Nursing, Complex of will and mental health, Arar.

⁶Technician-Nursing, north medical tower, Arar.

⁷Technician-Nursing, north medical tower, Arar

⁸Nursing technician, The northern border healthy cluster, Arar

⁹Technician-Nursing, north medical tower, Arar.

¹⁰Nursing technician, Prince Abdulaziz bin Musaed Hospital

^{*}Corresponding author: Aljawharah hamdan Aziz alanazi

^{*}Nurse technician, Department of Forensic Medicine, Northern Border University, Arar, Saudi Arabia

Introduction:

In today's healthcare landscape, patient satisfaction is recognized as a crucial measure of the quality of care provided by hospitals. Beyond clinical outcomes, patient satisfaction reflects the overall experience patients have during their interactions with healthcare providers and facilities. A positive patient experience not only fosters trust and confidence in the healthcare system but also contributes to better health outcomes and patient adherence to treatment plans.

Recognizing the significance of patient satisfaction, hospitals are increasingly focusing on strategies to enhance the patient experience. From effective communication and reduced wait times to patient-centered care and cultural sensitivity, hospitals are implementing various initiatives to improve satisfaction levels among their patients [1].

Hospitals face a continuing challenge to reduce the gap between consumers' expectations and the actual services provided. hospitals have recognized that customer service and provider—patient interactions are important in creating successful outcomes, and they have emphasized the measurement and reporting of patient satisfaction measures [2].

Patient satisfaction is important for several reasons. Firstly, satisfied patients are more likely to adhere to their treatment plans and follow-up appointments, leading to better health outcomes. Additionally, satisfied patients are more likely to recommend the hospital to others, which can help attract new patients and improve the hospital's reputation in the community. Moreover, high levels of patient satisfaction are often associated with higher levels of patient safety and lower rates of medical errors [3].

In this essay, we will explore a range of strategies aimed at improving patient satisfaction in hospitals. These strategies encompass aspects of communication, quality of care, comfort, follow-up, and cultural sensitivity, among others. By understanding and implementing these strategies, hospitals can create environments that prioritize patient needs and preferences, ultimately leading to higher levels of satisfaction and improved healthcare outcomes.

Patient-Centered Care: A Key Strategy for Improving Satisfaction:

Patient-centered care is a pivotal strategy for enhancing satisfaction in healthcare settings. This approach places patients at the forefront of their care journey, prioritizing their individual needs, preferences, and values. By embracing patientcentered care, hospitals can foster stronger relationships with patients, improve clinical outcomes, and elevate overall satisfaction levels [2].

Central to patient-centered care is the concept of empathy and understanding. Healthcare providers strive to develop empathetic relationships with patients, acknowledging their unique experiences, concerns, and aspirations. This fosters trust and mutual respect, laying the foundation for effective communication and collaboration throughout the care process.

In a patient-centered care model, healthcare providers actively involve patients in decisionmaking processes regarding their treatment plans [4]. By empowering patients to participate in these discussions, providers ensure that care aligns with patients' goals and values. This not only enhances patient autonomy and satisfaction but also promotes adherence to treatment regimens and improves health outcomes. So, patient-centered care emphasizes the importance of holistic support beyond just medical treatment. Hospitals that prioritize patient-centered care often offer comprehensive support services, such as emotional counseling, nutritional guidance, and access to community resources. By addressing patients' broader needs, healthcare providers demonstrate their commitment to caring for the whole person, not just the illness [5].

Another critical aspect of patient centered care is continuity and coordination of care. Healthcare providers collaborate across disciplines and settings to ensure seamless transitions between different stages of care. This reduces the likelihood of medical errors, prevents gaps in care, and enhances patients' overall experience with the healthcare system. Furthermore, patient-centered care recognizes the value of feedback and continuous improvement. Hospitals routinely solicit feedback from patients to gauge their experiences and identify areas for enhancement [6]. By listening attentively to patient concerns and implementing necessary changes, healthcare providers demonstrate responsiveness dedication to improving care quality.

Patient-centered care is a cornerstone strategy for enhancing satisfaction in hospitals. By prioritizing patients' needs, preferences, and values, healthcare providers can cultivate trusting relationships, promote shared decision making, and deliver comprehensive support. Embracing a patient-centered approach not only improves the patient experience but also drives better clinical outcomes and strengthens the overall healthcare system [6].

Understanding Patient Needs and Expectations

Patient satisfaction and patients' recommendation to others are both very critical issues to health-care providers [6]. Understanding patient needs and expectations is fundamental to improving patient satisfaction in hospitals. One of the primary ways hospitals can gain insights into patient needs is by implementing surveys and feedback mechanisms. These tools allow patients to express their opinions and concerns regarding their experiences with the healthcare facility. By analyzing survey responses and feedback, hospitals can identify areas where they excel and areas that require improvement. Additionally, hospitals can gain valuable insights into patient needs by closely patient complaints and concerns. examining Complaints often highlight areas dissatisfaction or unmet expectations, providing valuable opportunities for improvement. By addressing these issues, hospitals can demonstrate their commitment to patient centered care and enhance overall satisfaction [7].

Furthermore, it is essential for hospitals to recognize that patient needs and expectations may vary based on individual preferences, cultural backgrounds, and personal circumstances. Therefore, healthcare providers should strive to tailor their services to meet the unique needs of each patient. This may involve offering specialized services, providing language interpretation accommodating services. or specific cultural practices.

Incorporating patient input into decision making processes is another crucial aspect of understanding patient needs and expectations. Shared decision-making models empower patients to actively participate in their healthcare journey by involving them in treatment decisions and care plans. This not only helps patients feel more engaged and informed but also ensures that their preferences and values are considered.

Overall, by actively listening to patients, soliciting feedback, and incorporating patient input into decision-making processes, hospitals can gain a deeper understanding of patient needs and expectations. This enables healthcare providers to deliver more personalized and patient-centered care, ultimately leading to higher levels of patient satisfaction [8].

Improving patient satisfaction in hospitals

Improving patient satisfaction in hospitals is crucial for enhancing the overall quality of care and patient outcomes. Effective communication between healthcare providers and patients is essential. This includes active listening, providing understandable explanations about diagnoses

and treatment options, and addressing any concerns or questions patients may have. Additionally, investing in training programs for healthcare staff to improve communication skills, empathy, and cultural competence ensures that patients feel understood, respected, and valued throughout their healthcare experience [9].

Reducing wait times for appointments, admissions, tests, and consultations is another critical strategy. This can be achieved bv streamlining administrative processes, optimizing scheduling and ensuring efficient workflow systems, management. Moreover, focusing on delivering high-quality medical care and services is paramount. This involves maintaining clinical excellence, adhering to evidence-based practices, and continuously monitoring and improving patient outcomes.

Emphasizing patient-centered care is essential in involving patients in decision-making processes, respecting their preferences and values, and promoting shared decision-making between patients and healthcare providers. Enhancing the physical environment of the hospital with amenities such as comfortable waiting areas, private rooms, and access to Wi-Fi and entertainment options can also contribute to patient satisfaction [10].

Effective pain management protocols are crucial to alleviating patient discomfort and improving overall satisfaction with their hospital experience. Implementing systems for post-discharge follow-up and support ensures continuity of care and addresses any ongoing concerns or needs patients may have. Comprehensive patient education about their conditions, treatment plans, and self-care strategies empowers patients to take an active role in their healthcare, reducing anxiety and uncertainty [8].

Establishing feedback mechanisms, such as satisfaction surveys, focus groups, and suggestion boxes, allows hospitals to collect and act upon patient feedback to identify areas for improvement. Recognizing and respecting the diverse cultural backgrounds and beliefs of patients by providing culturally sensitive care and services ensures that all patients feel respected and valued [6].

Furthermore, offering emotional support services, such as counseling or support groups, to patients and their families, particularly those dealing with serious illnesses or undergoing complex treatments, is essential. By implementing these strategies, hospitals can create a more patient-centered approach to care that improves satisfaction, enhances patient outcomes, and ultimately leads to better overall healthcare experiences.

Enhancing Communication Between Healthcare Staff and Patients:

Enhancing communication between healthcare staff and patients is paramount for fostering a positive healthcare experience and optimizing patient outcomes. Effective communication lies at the heart of patient-centered care, as it facilitates understanding, trust, and collaboration between healthcare providers and patients. One fundamental aspect of improving communication is active Healthcare listening. professionals attentively listen to patients, demonstrating empathy and understanding of their concerns. This not only helps in addressing patients' needs more effectively but also establishes a strong foundation for building trust and rapport [11].

Moreover, clear and simple language is essential in healthcare communication. Medical information should be conveyed in a manner that patients can easily comprehend, avoiding the use of complex medical terminology whenever possible. By using plain language, healthcare staff can ensure that patients fully understand their diagnosis, treatment options, and care instructions, empowering them to make informed decisions about their health.

Empowering patients to actively participate in their care is another key component of enhancing communication. Healthcare providers should encourage patients to ask questions, express concerns, and engage in shared decision making processes regarding their treatment plans. Open dialogue between healthcare staff and patients fosters collaboration and partnership, ultimately leading to improved patient satisfaction and adherence to treatment regimens.

Furthermore, hospitals should offer diverse communication channels to cater to patients' preferences and needs. This may include in-person consultations, phone calls, emails, and patient portals. Providing multiple communication options enables patients to engage with healthcare staff in the most convenient way for them, enhancing accessibility and facilitating effective communication.

Cultural competency is also vital in healthcare communication. Healthcare professionals should be sensitive to patients' cultural backgrounds, beliefs, and values, adapting their communication style accordingly. Understanding cultural differences helps healthcare providers build rapport and trust with patients, leading to more meaningful and effective interactions.

Consistent communication throughout the patient's care journey is essential for maintaining engagement and reducing anxiety. Healthcare

providers should provide regular updates on test results, treatment plans, and next steps, ensuring that patients feel informed and supported throughout their healthcare experience. Additionally, implementing feedback mechanisms allows hospitals to gather input from patients about their communication experiences, identify areas for improvement, and make necessary adjustments to enhance communication strategies [12].

Ultimately, by prioritizing effective communication, hospitals can create a culture of patient-centered care where healthcare staff and patients engage in open, respectful, and collaborative interactions. This not only improves patient satisfaction but also contributes to better healthcare outcomes and overall quality of care.

Proposed framework to improve patient experience

For customers, interaction with staff is the single most important determinant of patient experience. Face-to-face communications form consumers' overall impression of the hospital, sometimes before service delivery and medical treatment occur. Forty-two percent of consumers said that the way they are treated by physicians, nurses, and reception staff is the most important component of a successful inpatient experience [13]

Creating a comprehensive framework to enhance the patient experience is critical for healthcare organizations aiming to deliver high-quality, patient-centered care. The first step in this framework involves assessing and understanding patient needs. This entails conducting thorough assessments, utilizing surveys, focus groups, and feedback mechanisms to gather insights into patient experiences. By analyzing this data, healthcare providers can identify areas for improvement and prioritize initiatives based on patient feedback, ensuring that efforts are targeted towards addressing the most pressing concerns.

Once patient needs are understood, healthcare organizations can focus on implementing patient-centered care delivery. This approach emphasizes empathy, respect, and collaboration, with healthcare providers actively involving patients in decision-making processes regarding their treatment plans and care options. Personalizing care to meet the unique needs and preferences of each patient is essential, taking into account factors such as cultural background, language, and health literacy to ensure that care is tailored to the individual.

Effective communication and information sharing are also fundamental aspects of the framework. Improving communication between healthcare providers and patients through clear, empathetic, and culturally sensitive language is crucial for fostering understanding and trust. Providing patients with comprehensive information about their health conditions, treatment options, and care plans using accessible formats and technology platforms facilitates transparency and engagement, empowering patients to actively participate in their healthcare journey [14].

Care coordination and continuity play a significant role in enhancing the patient experience. By improving coordination between healthcare settings and providers, establishing clear pathways for referrals, transfers, and follow-up care, and implementing multidisciplinary care teams, healthcare organizations can ensure seamless transitions and integrated care delivery. This promotes collaboration and information sharing among healthcare professionals, ultimately enhancing the quality and continuity of care for patients.

Physical comfort and amenities are also important considerations within the framework. Creating a welcoming and comfortable environment for patients, addressing their physical needs, and providing amenities such as comfortable seating areas, entertainment options, and access to food and beverages can significantly impact the patient experience during hospital stays. Additionally, empowering patients through education and providing them with the knowledge, skills, and resources they need to make informed decisions about their health promotes self management and engagement in their care [15].

Finally, continuous feedback and improvement are essential components of the framework. Establishing mechanisms for gathering ongoing feedback from patients, tracking performance metrics, and using data analytics and quality improvement methodologies opportunities for enhancement ensures that the framework remains responsive to evolving patient needs and preferences. Regular reviews and updates based on feedback and evaluation results facilitate continuous improvement in the patient experience, ultimately leading to better outcomes and satisfaction for all stakeholders involved in the healthcare journey.

Optimizing the physical environment of hospitals to enhance satisfaction

Enhancing the physical environment of hospitals is pivotal in elevating patient satisfaction and their overall experience. To begin with, creating a welcoming and comfortable atmosphere is paramount. Hospitals can accomplish this by meticulously maintaining cleanliness and aesthetics of their facilities. Regular cleaning and updating of physical infrastructure, such as walls, floors, and furniture, contribute to leaving a positive impression on patients and visitors alike [16].

Moreover, attention to details such as lighting, temperature control, and noise reduction plays a significant role in shaping the patient experience. Hospitals should aim to cultivate a calm and soothing environment by leveraging natural light whenever possible, ensuring optimal temperature settings for comfort, and implementing measures to minimize disruptive noise [17].

Additionally, optimizing the layout and design of hospital spaces can enhance efficiency and convenience for patients. This could entail organizing waiting areas to mitigate congestion, providing clear signage for easy navigation, and ensuring accessibility to essential amenities like restrooms and refreshment areas.

Integrating elements of nature and green spaces into hospital environments can also positively impact patient well-being. By incorporating outdoor gardens, indoor plants, and other natural elements, hospitals can create tranquil spaces where patients can unwind and rejuvenate during their stay [18].

Furthermore, offering amenities and comforts that enhance the patient experience contributes to overall satisfaction. This may involve providing comfortable seating areas, entertainment options, access to Wi-Fi, and complimentary refreshments, all of which contribute to making patients feel more at ease and supported during their hospital stay. Lastly, involving patients in the design and improvement of hospital environments ensures that their needs and preferences are prioritized. Hospitals can actively seek feedback from patients through surveys, focus groups, and patient advisory councils, enabling them to identify areas for enhancement and implement changes that align with patient preferences.

By optimizing the physical environment of hospitals to emphasize patient comfort, convenience, and well-being, healthcare organizations can significantly enhance patient satisfaction and ultimately contribute to better overall outcomes [19].

Using technology to engage hospitalized patients in their care

technology offers immense potential to enhance patient satisfaction in hospital settings by improving access to care, facilitating communication and engagement, empowering patients, and personalizing care delivery. By strategically implementing technology driven solutions, healthcare organizations can transform the patient experience and achieve higher levels of satisfaction, ultimately improving outcomes and driving excellence in healthcare delivery.

Advances in health information technology (HIT) are creating opportunities for patients to actively engage in care in a variety of ways, which is expected to improve quality and cost effectiveness of health care [20].

From a health perspective, successful interventions using technology to engage patients in hospital care hinge on a patient-centered approach that prioritizes the alignment of technological solutions with patients' needs and capabilities. Ensuring usability and accessibility across diverse patient populations, including those with varying levels of health literacy and digital proficiency, is paramount. Solutions should be tailored to address specific clinical needs, such as remote monitoring of chronic conditions or medication adherence support, and seamlessly integrated into clinical workflows enhance to patient-provider interactions. Engaging healthcare providers in the adoption and utilization of technology interventions is crucial, necessitating adequate training and support to effectively incorporate technology into practice and recognize its value in improving patient care. Moreover, maintaining data security and privacy is fundamental, requiring robust measures to protect patient information and comply with regulatory requirements [21].

From an information technology (IT) perspective, successful interventions rely on interoperability, scalability, and usability of technology solutions. Seamless integration with existing IT infrastructure and systems facilitates data exchange and interoperability across different platforms and healthcare settings. Scalability and flexibility in design allow for customization and adaptation to long-term changing requirements, ensuring sustainability and usability. Usability and user experience (UX) are paramount considerations, with intuitive interfaces, streamlined workflows, and responsive design contributing to a positive

experience and driving utilization. Additionally, ensuring reliability and performance of technology systems is critical for delivering uninterrupted services and maintaining user satisfaction, necessitating redundant systems, disaster recovery plans, and performance monitoring mechanisms. Finally, evaluating the cost-effectiveness of technology interventions is essential to justify investments and optimize resource allocation, requiring thorough cost benefit analyses and assessment of the total cost of ownership [22].

Using technology in healthcare settings, such as hospitals, communities, and during emergencies, has several benefits in attaining quality patient care. Technology can improve patient safety by reducing medical errors. It can also enhance patient satisfaction by allowing for operational monitoring of patient satisfaction indicators and creating a basis for assessing various aspects of hospital activities from the perspective of patients. Additionally, technology can contribute to the improvement of medical education and the delivery of healthcare services to patients. It enables the use of alternative methods of instruction, online degree courses, learning apps, and computer-generated virtual reality models, which make diagnosis and treatment more precise and less time consuming. Furthermore, technology, such as telemedicine, can change the dynamic of patient care and transform healthcare systems globally. Overall, the utilization of technology in healthcare settings has the potential to enhance patient safety, satisfaction, and the quality of care provided.

Conclusion:

Patient satisfaction remains a cornerstone of quality healthcare, reflecting the overall experience patients have as they interact with healthcare providers and facilities. Through a multifaceted approach that includes patient-centered care, effective communication, reduced wait times, staff training, and technology integration, hospitals can significantly enhance patient satisfaction and overall healthcare outcomes. By prioritizing patients' needs and preferences, fostering trust and collaboration, and constantly striving improvement, healthcare organizations can create environments that not only meet patients' expectations, but exceed them. As the healthcare landscape continues to evolve, it is essential that hospitals remain committed to enhancing the patient experience, ensuring that every patient receives the highest quality of care and support. Ultimately, by adopting these strategies and principles, hospitals can achieve excellence in

healthcare delivery, enhance patient satisfaction, and improve the overall well-being of individuals and communities.

References

- 1. Fottler, M. D., Ford, R. C., & Heaton, C. P. (2002). Achieving service excellence: Strategies for healthcare. Chicago, IL: Health Administration Press.
- 2. Jenkinson C, Coulter A, Bruster S, et al. Patients' experiences and satisfaction with health care: results of a questionnaire study of specific aspects of care. Qual Saf Health Care. 2002;11(4):335-339.
- 3. Dwamena F, Holmes-Rovner M, Gaulden CM, Jorgenson S, Sadigh G, Sikorskii A, et al. Interventions for providers to promote a patient-centred approach in clinical consultations. Cochrane Database Syst Rev. 2012; doi:10.1002/14651858.CD003267.pub2
- 4. Biresaw H, Mulugeta H, Endalamaw A, Yesuf NN, Alemu Y. Patient satisfaction towards health care services provided in Ethiopian health institutions: a systematic review and metaanalysis. Health Serv Insights. 2021 Sep 6; 14:11786329211040689.doi: 10.1177/11786329211040689. PMID: 34511929; PMCID: PMC8424599.
- 5. Reynolds A. Patient-centered Care. Radiol Technol. 2009 NovDec;81(2):133-47. PMID: 19901351.
- Lavoie-Tremblay, M., O'Connor, P., Biron, A., MacGibbon, B., Cyr, G., & Frechette, J. (2016). The experience of patients engaged in co-designing care processes. Health Care Manager, 35(4), 284–293.
- 7. Punke, H. (2016, October 19). Through the eyes of the patient: Looking beyond HCAHPS to improve patient experience. Becker's Hospital Review. Retrieved from http://www.beckers hospital review.com/patient-engagement/through-the-eyes-of-the-patientlooking-beyond-hcahps-toimprove-patient-experience.html. 8. Radick, L. E. (2016, November/December). Improving the patient experience: Every interaction matters. Healthcare Executive, 31 (6), 33–38
- 9. Bleich, S. N., Ozaltin, E., & Murray, C. J. (2009). How does satisfaction with the health-care system relate to patient experience? Bulletin of the World Health Organization, 87(4), 271–278.
- 10. Greene SM, Tuzzio L, Cherkin D. A framework for making patient-centered care front and center. Perm J. 2012

- Summer;16(3):49-53. doi: 10.7812/TPP/12-025. PMID: 23012599; PMCID: PMC3442762.
- 11. evin C, Moore G, Shepherd J, Jacobs T, Hupke C. Transforming care teams to provide the best possible patient-centered, collaborative care. *J Ambul Care Manage*. 2009 Jan–Mar;32(1):24–31. Bourgeois FC, Fossa A, Gerard M, et al. J Am Med Inform Assoc. 2019;26:1566-1573. doi: 10.1093/jamia/ocz142
- 12. Greysen SR, Khanna RR, Jacolbia R, Lee HM, Auerbach AD. Tablet computers for hospitalized patients: a pilot study to improve inpatient engagement. Journal of Hospital Medicine. 2014;9(6):396–399. doi: 10.1002/jhm.2169
- 13. Antony, A. (2013). Impact of Effective Communication on Labour Productivity in Civil Engineering Projects: A Case Study of Kampala Central Division.
- 14. Al-Abri R, Al-Balushi A. Patient satisfaction survey as a tool towards quality improvement. Oman Med J. 2014;29(1):3-7.
- Kennedy CM, Powell J, Payne TH, Ainsworth J, Boyd A, Buchan I. Active assistance technology for health-related behavior change: an interdisciplinary review. Journal of Medical Internet Research.
 2012;14(3):e80. doi: 10.2196/jmir.1893.
- 16. Nordin S, Swall A, Anåker A, von Koch L, Elf M. Does the physical environment matter? A qualitative study of healthcare professionals' experiences of newly built stroke units.
- 17. Int J Qual Stud Health Well-being. 2021
 Dec;16(1):1917880. doi:
 10.1080/17482631.2021.191788coordination.
 Yearbook of 0. PMID: 34240677; PMCID:
 Medical PMC8274537. Informatics.
 2015;10(1):15.
- 18. Anaker, A., Von Koch, L., doi: 10.15265/IY-2015-003 Heylighen .,& Elf, M. (2019). "It's lonely": Patients' experiences of the physical environment at a newly built stroke unit. HERD: Health Environments Research & Design Journal, 12(3), 141–14. 10.1177/1937586718806696
- 19. Donetto, S., Penfold, C., Anderson, J., Robert, G., & Maben, J. (2017). Nursing work and sensory experiences of hospital design: A before and after qualitative study following a move to all-single room inpatient accommodation. Health and Place, 46, 121–129. 0.1016/j.healthplace.2017.05.001

- 20. Roberts S, Chaboyer W, Gonzalez R, Marshall A. Using technology to engage hospitalised patients in their care: a realist review. BMC Health Serv Res. 2017 Jun 6;17(1):388. doi: 10.1186/s12913-017-2314-0. Erratum in: BMC Health Serv Res. 2017 Sep 13;17 (1):650. PMID: 28587640; PMCID: PMC5461760.
- 21. Sawesi S, Rashrash M,
 Phalakornkule K, Carpenter JS, Jones JF. The
 impact of information technology on
 patient engagement and health behavior
 change: a systematic review of the literature.
 JMIR MedicalInformatics. 2016;4(1):1.
 doi: 10.2196/medinform.4514.
- 22. Demiris G, Kneale L. Informatics systems and tools to facilitate patient-centered care