



# RESEARCH IN A SNAP

## OVERVIEW

We're keeping you updated on citations added to The Center's Knowledge Repository.

The Knowledge Repository is a collaborative effort between The Center for Health Design and our partners

Academy of  
Architecture for Health  
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RESEARCH DESIGN  
CONNECTIONS

## Knowledge Repository News

Among the 62 new entries in the Knowledge Repository, several papers focus on designing therapeutic environments in behavioral and mental health settings. A study by Hutton explored the benefits of engaging adolescent patients in the design process of an inpatient unit redesign. They discovered the importance of the patient perspective in ensuring that the facility support personal control and comfort. Norouzi and colleagues looked at therapy rooms for children with autism and examined how the design affected how comfortable the children felt and their level of participation. They found that versatility is key in these space, to support a variety of activities and the ability to transition the space to a dedicated work area for therapists. Check the citations listed in the “Therapeutic Environments: Behavioral/Mental Health” category below.

(Papers published ahead of print “in press” will be updated as volume and page information becomes available.)

May - June 2021

### COVID-1

1. Ahmadvpour, S., Bayramzadeh, S., & Aghaei, P. (2021). Efficiency and teamwork in emergency departments: Perception of staff on design interventions. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/19375867211023156>
2. Alqahtani, F., Alanazi, M., Alassaf, W., Aleanizy, F. S., Aljahany, M., Joseph, M., & AlRaye, M. (2021). Preventing SARS-CoV-2 transmission in the emergency department by implementing a separate pathway for patients with respiratory conditions. *Journal of Complementary and Integrative Medicine*, in press. <https://doi.org/10.1515/jcim-2020-0422>
3. Baboli, Z., Neisi, N., Babaei, A. A., Ahmadi, M., Sorooshian, A., Birgani, Y. T., & Goudarzi, G. (2021). On the airborne transmission of SARS-CoV-2 and relationship with indoor conditions at a hospital. *Atmospheric Environment*. <https://doi.org/10.1016/j.atmosenv.2021.118563>
4. Bhattacharya, A., Ghahramani, A., & Mousavi, E. (2021). The effect of door opening on air-mixing in a positively pressurized room: Implications for operating room air management during the COVID outbreak. *Journal of Building Engineering*, in press. <https://doi.org/10.1016/j.job.2021.102900>
5. Fadaei, A. (2021). Ventilation systems and COVID-19 spread: Evidence from a systematic review study. *European Journal of Sustainable Development Research*, 5(2). <https://doi.org/10.21601/ejosdr/10845>



6. Lualdi, M., Cavalleri, A., Bianco, A., Biasin, M., Cavatorta, C., Clerici, M., Galli, P., Pareschi, G., & Pignoli, E. (2021). Ultraviolet C lamps for disinfection of surfaces potentially contaminated with SARS-CoV-2 in critical hospital settings: Examples of their use and some practical advice. *BMC Infectious Diseases*, 21, 594. <https://doi.org/10.1186/s12879-021-06310-5>
7. Smolova, M., & Smolova, D. (2021). Emergency architecture. Modular construction of healthcare facilities as a response to pandemic outbreak. *E3S Web of Conferences*, 274. <https://doi.org/10.1051/e3sconf/202127401013>
8. Sodiq, A., Khan, M. A., Naas, M., & Amhamed, A. (2021). Addressing COVID-19 contagion through the HVAC systems by reviewing indoor airborne nature of infectious microbes: Will an innovative air recirculation concept provide a practical solution? *Environmental Research*, 199. <https://doi.org/10.1016/j.envres.2021.111329>

## Experience

Perceived Quality of Care (Noise, Communication, Waiting, etc.)

9. Apps, K., & Sunderland, N. (2021). Live music in hospital oncology settings: Environmental, interpersonal, and personal outcomes for staff, patients, and carers. *Arts & Health*, in press. <https://doi.org/10.1080/17533015.2021.1946110>
10. Wårdig, R., Hadziabdic, E., & Hjelm, K. (2021). Evaluation of a healthcare walk-in centre in an immigrant-dense area from the perspective of Swedish-born patients. *Primary Health Care Research & Development*, 22, e16. <https://doi.org/10.1017/S1463423621000189>

Supportive Design (Social Support, Distractions, Nature, etc.)

11. Eijkelenboom, A. M., Ortiz, M., & Bluysen, P. M. (2021). Building characteristics associated with self-reported dry eyes and headaches of outpatient workers in hospital buildings. *Indoor and Built Environment*, in press. <https://doi.org/10.1177/1420326X211023125>
12. Jimenez, F. E., Rich, R. K., Puumala, S. E., Kentfield, M., Schoenholtz, L., & Brittin, J. (2021). Effects of a decentralized nursing model on patient outcomes in two rural community hospitals. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/19375867211006491>
13. Luck, Z., Kraal, J., & Ozcan, E. (2020). Listener sonic needs in operating theatres. *Proceedings of the FA2020 Conference*, 1–4. <https://doi.org/10.48465/FA.2020.1053>
14. Perumal, S. R., Baharum, F., & Mohd Nawi, M. N. (2021). Addressing visual comfort issues in healthcare facilities using LED lighting technology—A review on daylighting importance, impact of correlated colour temperature, human responses and other visual comfort parameters. *Journal of Advanced Research in Fluid Mechanics and Thermal Sciences*, 82(2), 47–60. <https://doi.org/10.37934/arfmts.82.2.4760>



15. Phaholthep, C., Bunyasakseri, T., & Phaholthep, P. (2021). The investigation of physical design, executives' attitude and policy towards service efficiency based on universal design principles; A case study of Naresuan University Hospital. *Universal Design 2021: From Special to Mainstream Solutions*, 273–287. <https://doi.org/10.3233/SHTI210404>
16. Rollins, J. (2021). Transforming the hospital experience through art. In *'Purpose-built' Art in Hospitals: Art with Intent* (pp. 181–198). Emerald Publishing Limited. <https://doi.org/10.1108/978-1-83909-680-820211018>
17. Shariatzadeh, H., Abazari, M., Feiz-Arefi, M., Amani, S., Moazez, N., & Babaei-Pouya, A. (2021). Identification of the main sources of noise in the NICU of hospital in Iran and offering noise control methods. *Pakistan Journal of Medical and Health Sciences*, 15(4), 1117–1119.
18. Verderber, S., Gray, S., Suresh-Kumar, S., Kercz, D., & Parshuram, C. (2021). Intensive care unit built environments: A comprehensive literature review (2005–2020). *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/19375867211009273>
19. Yuan, M., Guo, Y.-S., Han, Y., Gao, Z.-K., Shen, X.-Y., & Bi, X. (2021). Effectiveness and mechanisms of enriched environment in post-stroke cognitive impairment. *Behavioural Brain Research*, 410, 113357. <https://doi.org/10.1016/j.bbr.2021.113357>

### Safety

20. Fauer, A., Wright, N., Lafferty, M., Harrod, M., Manojlovich, M., & Friese, C. R. (2021). Influences of physical layout and space on patient safety and communication in ambulatory oncology practices: A multisite, mixed method investigation. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/19375867211027498>

### Infection Prevention/Control

21. Belizario, J. A., Lopes, L. G., & Pires, R. H. (2021). Fungi in the indoor air of critical hospital areas: A review. *Aerobiologia*, in press. <https://doi.org/10.1007/s10453-021-09706-7>
22. Chandra Shekar, N. V., Abhinay, B., Raj Pavan, C., & Harish, R. (2021). Controlling virus droplets diffusion in an isolated room using CFD. *IOP Conference Series: Materials Science and Engineering*, 1128(1). <https://doi.org/10.1088/1757-899X/1128/1/012003>
23. Inkster, T., Peters, C., Wafer, T., Holloway, D., & Makin, T. (2021). Investigation and control of an outbreak due to a contaminated hospital water system, identified following a rare case of *Cupriavidus pauculus* bacteraemia. *Journal of Hospital Infection*, 111, 53–64. <https://doi.org/10.1016/j.jhin.2021.02.001>
24. Keilman, R., Harding, S., Rowin, M., Reade, E., Klingborg, P., Levine, D., & Spratt, H. (2021). Investigations of Staphylococcal contamination on environmental surfaces of a neonatal intensive care unit of a children's hospital. *American Journal of Infection Control*, in press. <https://doi.org/10.1016/j.ajic.2021.05.007>



25. Kong, X., Guo, C., Lin, Z., Duan, S., He, J., Ren, Y., & Ren, J. (2021). Experimental study on the control effect of different ventilation systems on fine particles in a simulated hospital ward. *Sustainable Cities and Society*, 73, 103102. <https://doi.org/10.1016/j.scs.2021.103102>
26. Munir, M. T., Pailhoriès, H., Aviat, F., Lepelletier, D., Pape, P. L., Dubreil, L., Irle, M., Buchner, J., Eveillard, M., Federighi, M., & Belloncle, C. (2021). Hygienic perspectives of wood in healthcare buildings. *Hygiene*, 1, 12–23. <https://doi.org/10.3390/hygiene1010002>
27. Nakanishi, Y., Kasahara, K., Koizumi, A., Tokutani, J., Yoshihara, S., Mikasa, K., & Imamura, T. (2021). Evaluation of nosocomial infection control measures to minimize the risk of aspergillus dispersion during major demolition work: A case study of a Japanese university hospital. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/19375867211009979>
28. Xiong, L., Sheng, G., Fan, Z.-M., Yang, H., Hwang, F.-J., & Zhu, B.-W. (2021). Environmental design strategies to decrease the risk of nosocomial infection in medical buildings using a hybrid MCDM Model. *Journal of Healthcare Engineering*, e5534607. <https://doi.org/10.1155/2021/5534607>

## Care across the Lifespan

### Therapeutic Environments: Behavioral/Mental Health

29. Dare, J., Seiver, H., Andrew, L., Coall, D. A., Karthigesu, S., Sim, M., & Boxall, K. (2021). Co-creating visual representations of safe spaces with mental health service users using photovoice and zoom. *Methods in Psychology*, 5, 100059. <https://doi.org/10.1016/j.metip.2021.100059>
30. Hutton, A., Wilson, R., & Foureur, M. (2021). Comfort equals nurturing: Young people talk about mental health ward design. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/19375867211022684>
31. McLachlan, F., & Leng, X. (2021). Colour here, there, and in-between—Placemaking and wayfinding in mental health environments. *Color Research & Application*, 46(1), 125–139. <https://doi.org/10.1002/col.22570>
32. Norouzi, N., & Garza, C. M. (2021). Architecture for children with autism spectrum disorder and their therapists. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/19375867211012489>
33. Shin, J., Dennis, S., & Mohammed, H. (2021). Mental health outcome measures in environmental design research: A critical review. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586721999787>

### Psychiatric Facilities

34. Degl' Innocenti, A., Wijk, H., Kullgren, A., & Alexiou, E. (2020). The influence of evidence-based design on staff perceptions of a supportive environment for person-centered care in forensic psychiatry. *Journal of Forensic Nursing*, 16(3), E23. <https://doi.org/10.1097/JFN.0000000000000261>



35. Olausson, S., Wijk, H., Berglund, I. J., Pihlgren, A., & Danielson, E. (2021). Patients' experiences of place and space after a relocation to evidence-based designed forensic psychiatric hospitals. *International Journal of Mental Health Nursing*, in press. <https://doi.org/10.1111/inm.12871>
36. Simonsen, T. P., & Duff, C. (2020). Healing architecture and psychiatric practice: (Re)ordering work and space in an in-patient ward in Denmark. *Sociology of Health & Illness*, 42(2), 379–392. <https://doi.org/10.1111/1467-9566.13011>
37. Simonsen, T. P., & Duff, C. (2021). Mutual visibility and interaction: Staff reactions to the 'healing architecture' of psychiatric inpatient wards in Denmark. *BioSocieties*, 16(2), 249–269. <https://doi.org/10.1057/s41292-020-00195-4>

#### Elders/Aging

38. Cater, D., Tunalilar, O., White, D. L., Hasworth, S., & Winfree, J. (2021). "Home is home:" Exploring the meaning of home across long-term care settings. *Journal of Aging and Environment*. <https://doi.org/10.1080/26892618.2021.1932012>
39. Kim, H.-S., & Kang, J.-S. (2021). Effect of a group music intervention on cognitive function and mental health outcomes among nursing home residents: A randomized controlled pilot study. *Geriatric Nursing*, 42(3), 650–656. <https://doi.org/10.1016/j.gerinurse.2021.03.012>
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41. Yang, H., Guo, B., Shi, Y., Jia, C., Li, X., & Liu, F. (2021). Interior daylight environment of an elderly nursing home in Beijing. *Building and Environment*, 200, 107915. <https://doi.org/10.1016/j.buildenv.2021.107915>
42. Zhan, H., Yu, J., & Yu, R. (2021). Assessment of older adults' acceptance of IEQ in nursing homes using both subjective and objective methods. *Building and Environment*, 203, 108063. <https://doi.org/10.1016/j.buildenv.2021.108063>

#### Cognitive Impairment & Dementia

43. Bourdon, E., & Belmin, J. (2021). Enriched gardens improve cognition and independence of nursing home residents with dementia: A pilot controlled trial. *Alzheimer's Research & Therapy*, 13(1), 116. <https://doi.org/10.1186/s13195-021-00849-w>
44. Kirch, J., & Marquardt, G. (2021). Towards human-centred general hospitals: The potential of dementia-friendly design. *Architectural Science Review*. <https://doi.org/10.1080/00038628.2021.1933889>
45. Peters, T., & Verderber, S. (2021). Biophilic design strategies in long-term residential care environments for persons with Dementia. *Journal of Aging and Environment*. <https://doi.org/10.1080/26892618.2021.1918815>

#### Aging in Place/Healthcare at Home



46. Andersson, M., Granath, K., & Nylander, O. (2021). Aging-in-place: Residents' attitudes and floor plan potential in apartment buildings from 1990 to 2015. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/19375867211016342>
47. Sonia, & Tushar, S. (2021). Smart health monitoring for elderly care in indoor environments. In A. Solanki, A. Kumar, & A. Nayyar (Eds.), *Digital Cities Roadmap* (pp. 379–399). John Wiley & Sons, Ltd. <https://doi.org/10.1002/9781119792079.ch12>

### Design & Evaluation (e.g., Process, Methods, Simulation Modeling)

48. Bartomeu, E., & Ventura, O. (2021). Participatory practices for co-designing a multipurpose family space in a children's hospital. *Design for Health*. <https://doi.org/10.1080/24735132.2021.1908654>
49. Burgette, J. M., Rankine, J., Culyba, A. J., Chu, K.-H., & Carley, K. M. (2021). Best practices for modeling egocentric social network data and health outcomes. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/19375867211013772>
50. Cappiello, F. L., & Erhart, T. G. (2021). Modular cogeneration for hospitals: A novel control strategy and optimal design. *Energy Conversion and Management*, 237, 114131. <https://doi.org/10.1016/j.enconman.2021.114131>
51. Colman, N., Dalpiaz, A., Walter, S., Chambers, M. S., & Hebbar, K. B. (2020). SAFEE: A debriefing tool to identify latent conditions in simulation-based hospital design testing. *Advances in Simulation*, 5(1), 1–14. <https://doi.org/10.1186/s41077-020-00132-2>
52. Francis, K., & Murtha, S. (2021). The inclusion and efficacy of first-person narrative in the design of long-term care homes. *Architectural Science Review*. <https://doi.org/10.1080/00038628.2021.1917336>
53. Garcia, T. C., & Rasmussen, B. (2020). Reverberation time regulations for stairwells and corridors: A pilot study for hospitals in selected countries in Europe. *Proceedings of Forum Acusticum 2020*, 7.
54. Magazine, M., Murphy, M., Schauer, D. P., & Wiggermann, N. (2021). Determining the number of bariatric beds needed in a U.S. acute care hospital. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/19375867211012488>
55. Mahmood, F. J. (2021). The role of evidence-based design in informing health-care architects. *Journal of Facilities Management*, 19(2), 249–262. <https://doi.org/10.1108/JFM-09-2020-0062>
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57. Pilosof, N. P., & Grobman, Y. J. (2021). Evidence-based design in architectural education: Designing the first Maggie's Centre in Israel. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/19375867211007945>





58. Salaheldin, M. H., Hassanain, M. A., Hamida, M. B., & Ibrahim, A. M. (2021). Performance assessment of the built environment in healthcare facilities. *Journal of Facilities Management*, in press. <https://doi.org/10.1108/JFM-08-2020-0057>
59. Soliman-Junior, J., Tzortzopoulos, P., Baldauf, J. P., Pedo, B., Kagioglou, M., Formoso, C. T., & Humphreys, J. S. (2021). Automated compliance checking in healthcare building design. *Automation in Construction*, in press.
60. Spear, B., Kinart, A. C., Beauvais, B., & Kim, F. S. (2021). Renovating healthcare facility maintenance planning: A case study from Walter Reed National Military Medical Center (WRNMMC). *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/19375867211019749>
61. Wahlroos, N., Stolt, M., Nordin, S., & Suhonen, R. (2021). Evaluating physical environments for older people—Validation of the Swedish version of the Sheffield Care Environment Assessment Matrix for use in Finnish long-term care. *International Journal of Older People Nursing*, e12383. <https://doi.org/10.1111/opn.12383>
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