



RESEARCH IN A SNAP

OVERVIEW

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Academy of
Architecture for Health
an AIA Knowledge Community



Design for Aging
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RESEARCH DESIGN
CONNECTIONS

Knowledge Repository News

The past two months brings you 50 more entries into the Knowledge Repository spanning a range of topics. In these new entries, several papers are related to burnout – a combination of emotional exhaustion, depersonalization, and a perception of reduced personal accomplishments. This has been an increasingly important topic of discussion in healthcare. To date, limited research has suggested influences from light and noise.

In these newer studies, Cordoza and colleagues found even brief exposure to a garden during breaks reduced burnout, while Zwakhalen and colleagues found that working in small-scale dementia care settings did not have an effect on symptoms of burnout. Dieser and colleagues discuss a range of programs and features in the physical environment to support Mayo's "serious leisure perspective." The authors suggest elements such as art, music, and gardens are restorative for physicians, as well as patients. As the industry continues to struggle with this pervasive problem, the area is ripe for continued exploration that includes built environment solutions.

1. Zwakhalen, S. M. G., Hamers, J. P. H., van Rossum, E., Ambergen, T., Kempen, G. I. J. M., & Verbeek, H. (2018). Working in small-scale, homelike dementia care: effects on staff burnout symptoms and job characteristics. A quasi-experimental, longitudinal study. *Journal of Research in Nursing*, in press. <https://doi.org/10.1177/1744987118757838>
2. Cordoza, M., Ulrich, R. S., Manulik, B. J., Gardiner, S. K., Fitzpatrick, P. S., Hazen, T. M., ... Perkins, R. S. (2018). Impact of Nurses Taking Daily Work Breaks in a Hospital Garden on Burnout. *American Journal of Critical Care*, 27(6), 508–512. <https://doi.org/10.4037/ajcc2018131>
3. Dieser, R. B., Edginton, C. R., & Ziemer, R. (2017). Decreasing Patient Stress and Physician/Medical Workforce Burnout Through Health Care Environments: Uncovering the Serious Leisure Perspective at Mayo Clinic's Campus in Rochester, Minnesota. *Mayo Clinic Proceedings*, 92(7), 1080–1087. <https://doi.org/10.1016/j.mayocp.2017.03.017>

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



November-December 2018

Experience

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

4. Basile, J., Youssef, E., Cambria, B., Chacko, J., Treval, K., Hahn, B., & Ardolic, B. (2018). A Novel Approach to Addressing an Unintended Consequence of Direct to Room: The Delay of Initial Vital Signs. *Western Journal of Emergency Medicine*, 19(2), 254–258. <https://doi.org/10.5811/westjem.2017.12.35068>
5. Cai, H., Spreckelmeyer, K., Mendenhall, A., Li, D., Holmes, C., & Levy, M. (2018). A Regional Survey on Residents' Preferences on Patient-Centered Medical Home Design in Rural Areas. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586718806866>
6. Falconer, S. S., Karuppan, C. M., Kiehne, E., & Rama, S. (2018). ED Triage Process Improvement: Timely Vital Signs for Less Acute Patients. *Journal of Emergency Nursing*, 44(6), 589–597. <https://doi.org/10.1016/j.jen.2018.05.006>
7. Garrett, J. S., Berry, C., Wong, H., Qin, H., & Kline, J. A. (2018). The effect of vertical split-flow patient management on emergency department throughput and efficiency. *The American Journal of Emergency Medicine*, 36(9), 1581–1584. <https://doi.org/10.1016/j.ajem.2018.01.035>
8. Kelly, R., Brown, D., McCance, T., & Boomer, C. (n.d.). The experience of Person-centred Practice in a 100% single-room environment in acute care settings – a narrative literature review. *Journal of Clinical Nursing*, in press. <https://doi.org/10.1111/jocn.14729>
9. Lacanna, G., Wagenaar, C., Avermaete, T., & Swami, V. (2018). Evaluating the Psychosocial Impact of Indoor Public Spaces in Complex Healthcare Settings. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586718812439>
10. Rathlev, N. K., Anderson, J., Schmidt, J., Hettler, J., Garreffi, L., Gray, M., ... Visintainer, P. (2018). Key Players in Key Roles: The Baystate Patient Progress Initiative to Improve Emergency Department Efficiency and Productivity. *Journal of Emergency Nursing*, 44(2), 123–131. <https://doi.org/10.1016/j.jen.2017.10.015>
11. Wallingford, G., Joshi, N., Callagy, P., Stone, J., Brown, I., & Shen, S. (2018). Introduction of a Horizontal and Vertical Split Flow Model of Emergency Department Patients as a Response to Overcrowding. *Journal of Emergency Nursing*, 44(4), 345–352. <https://doi.org/10.1016/j.jen.2017.10.017>

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

12. Elsadek, M., Sun, M., Sugiyama, R., & Fujii, E. (2019). Cross-cultural comparison of physiological and psychological responses to different garden styles. *Urban Forestry & Urban Greening*, 38, 74–83. <https://doi.org/10.1016/j.ufug.2018.11.007>



13. Mustikawati, T., Yatmo, Y. A., & Atmodiwirjo, P. (2017). Understanding Wayfinding Experience of Hospital Visitor through Tours and Maps Analysis. In *Environment-Behaviour Proceedings Journal* (Vol. 2, pp. 149–157). Kuching, Malaysia: e-International Publishing House Ltd. <https://doi.org/10.21834/e-bpj.v2i6.992>
14. Rodrigues, R., Coelho, R., & Tavares, J. M. R. S. (2018). Healthcare Signage Design: A Review on Recommendations for Effective Signing Systems. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586718814822>
15. Sander, E. J., Caza, A., & Jordan, P. J. (2019). Psychological perceptions matter: Developing the reactions to the physical work environment scale. *Building and Environment*, 148, 338–347. <https://doi.org/10.1016/j.buildenv.2018.11.020>
16. van der Riet, P., Jitsacorn, C., Junlapeeya, P., & Thursby, P. (2017). Student nurses experience of a “fairy garden” healing haven garden for sick children. *Nurse Education Today*, 59, 88–93. <https://doi.org/10.1016/j.nedt.2017.09.002>
17. Weerasuriya, R., Henderson-Wilson, C., & Townsend, M. (2018). Accessing Green Spaces Within a Healthcare Setting: A Mixed Studies Review of Barriers and Facilitators. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586718810859>

Design & Evaluation (e.g., Process, Methods)

18. Haq, S. (2018). Where We Walk Is What We See: Foundational Concepts and Analytical Techniques of Space Syntax. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586718812436>
19. Jiang, S., Staloch, K., & Kaljevic, S. (2018). Diagnostic Post-Occupancy Evaluation of the Landscape Environments in a Primary Care Clinic: Environmental and Social Performances. In *Landscape Research Record No. 7* (Vol. 7, pp. 96–111). CELA. Retrieved from <http://thecela.org/wp-content/uploads/33F-DIAGNOSTIC-POST-OCCUPANCY.pdf>
20. Lygum, V. L., Poulsen, D. V., Djernis, D., Djernis, H. G., Sidenius, U., & Stigsdotter, U. K. (2018). Post-Occupancy Evaluation of a Crisis Shelter Garden and Application of Findings Through the Use of a Participatory Design Process. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586718812444>
21. Reddy, A., Lester, C. A., Stone, J. A., Holden, R. J., Phelan, C. H., & Chui, M. A. (2018). Applying participatory design to a pharmacy system intervention. *Research in Social and Administrative Pharmacy*, in press. <https://doi.org/10.1016/j.sapharm.2018.11.012>

Safety

22. Joseph, A., Henriksen, K., & Malone, E. (2018). The Architecture Of Safety: An Emerging Priority For Improving Patient Safety. *Health Affairs*, 37(11), 1884–1891. <https://doi.org/10.1377/hlthaff.2018.0643>
23. Mayampurath, A., Ward, C., Fahrenbach, J., LaFond, C., Howell, M., & Churpek, M. M. (2018). Association Between Room Location and Adverse Outcomes in Hospitalized Patients. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586718806702>



24. West, G. F., & Rose, T. J. (2018). Ensuring Capability to Provide Safe Patient Care Prior to Occupying Renovated Clinical Area. *HERD: Health Environments Research & Design Journal*, 11(4), 111–115. <https://doi.org/10.1177/1937586718779242>

Infection Prevention/Control

25. Huang, C., Ma, W., & Stack, S. (2012). The Hygienic Efficacy of Different Hand-Drying Methods: A Review of the Evidence. *Mayo Clinic Proceedings*, 87(8), 791–798. <https://doi.org/10.1016/j.mayocp.2012.02.019>
26. Johanes, M., Atmodiwirjo, P., & Yatmo, Y. A. (2018). Developing digital design workflow for architecture based on cleanability as a design parameter. In *IOP Conference Series: Earth and Environmental Science* (Vol. 195, pp. 1–9). IOP Publishing. <https://doi.org/10.1088/1755-1315/195/1/012091>
27. Kanaan, M., & Moughlbay, A. A. (2018). Comparative CFD Investigation of Upper Room UVGI Efficacy with Three Different Ventilation Systems. *International Journal of Applied Engineering Research*, 13(21), 14897–14902.
28. Moore, D. L. (2018). Infection prevention and control in paediatric office settings. *Paediatrics & Child Health*, 23(8), e176–e190. <https://doi.org/10.1093/pch/pxy117>
29. Neo, J. R. J., & Zadeh, R. (2017). The influence of spatial configuration on the frequency of use of hand sanitizing stations in health care environments. *American Journal of Infection Control*, 45, 615–619. <https://doi.org/10.1016/j.ajic.2017.01.033>
30. Sexton, J. D., Wilson, A. M., Sassi, H. P., & Reynolds, K. A. (2018). Tracking and controlling soft surface contamination in health care settings. *American Journal of Infection Control*, 46(1), 39–43. <https://doi.org/10.1016/j.ajic.2017.08.002>
31. Trudel, C., Cobb, S., Momtahan, K., Brintnell, J., & Mitchell, A. (2018). Human factors considerations in designing for infection prevention and control in neonatal care – findings from a pre-design inquiry. *Ergonomics*, 61(1), 169–184. <https://doi.org/10.1080/00140139.2017.1330967>

Falls

32. Gustavsson, J., Bonander, C., & Nilson, F. (2018). A quasi-experimental evaluation of compliant flooring in a residential care setting. *PLOS ONE*, 13(7), e0201290. <https://doi.org/10.1371/journal.pone.0201290>

Patient Handling/Mobility

33. Lachance, C. C., Korall, A. M. B., Russell, C. M., Feldman, F., Robinovitch, S. N., & Mackey, D. C. (2018). Hand forces exerted by long-term care staff when pushing wheelchairs on compliant and non-compliant flooring. *Applied Ergonomics*, 71, 95–101. <https://doi.org/10.1016/j.apergo.2018.04.009>
34. Lachance, C. C., Korall, A. M. B., Russell, C. M., Johnson, S. I., Feldman, F., Robinovitch, S. N., & Mackey, D. C. (2015). Effects of Compliant Flooring Systems and Resident Weight on Hand Forces When Pushing Floor-Based Lifts and Wheelchairs among Long-Term Care Staff. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 59, pp. 1258–1258). Los Angeles, CA: SAGE Journals. <https://doi.org/10.1177/1541931215591201>



Care across the Lifespan

Therapeutic Environments: Behavioral/Mental Health

Psychiatric Facilities

35. Lindgren, B.-M., Molin, J., Lundström, M., Strömbäck, M., Renberg, E. S., & Ringnér, A. (2018). Does a new spatial design in psychiatric inpatient care influence patients' and staff's perception of their care/working environment? A study protocol of a pilot study using a single-system experimental design. *Pilot and Feasibility Studies*, 4(1), 1–7. <https://doi.org/10.1186/s40814-018-0383-4>

Pediatric

36. McLaughlan, R., Sadek, A., & Willis, J. (2018). Attractions to Fuel the Imagination: Reframing Understandings of the Role of Distraction Relative to Well-Being in the Pediatric Hospital. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586718810878>

Elders/Aging

37. Southey, S. R. (2018). Influencing building design in care for older people. *British Journal of Nursing*, 27(20), 1188–1191. <https://doi.org/10.12968/bjon.2018.27.20.1188>

Cognitive Impairment & Dementia

38. Catt, M., & Giridharan, R. (2018). The Reality of Well-Being-Focused Design in Dementia Care: A Case Study of Acute Dementia Wards in the United Kingdom. *HERD: Health Environments Research & Design Journal*, 11(4), 130–149. <https://doi.org/10.1177/1937586718779172>
39. Davis, S., Byers, S., Nay, R., & Koch, S. (2009). Guiding design of dementia friendly environments in residential care settings: Considering the living experiences. *Dementia*, 8(2), 185–203. <https://doi.org/10.1177/1471301209103250>
40. Fleming, R., Kelly, F., & Stillfried, G. (2015). 'I want to feel at home': establishing what aspects of environmental design are important to people with dementia nearing the end of life. *BMC Palliative Care*, 14(1), 26. <https://doi.org/10.1186/s12904-015-0026-y>

Aging in Place/Healthcare at Home

41. Karol, E., & Smith, D. (2018). Impact of Design on Emotional, Psychological, or Social Well-Being for People With Cognitive Impairment. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586718813194>

Technology

42. Evans, K. D., Sommerich, C. M., Sanders, E. B.-N., Patterson, E. S., Li, J., & Lavender, S. A. (2018). Opportunities for Inpatient Room Designs That Facilitate Imaging Professionals in Providing Diagnostic Patient Care: A Mixed Methods Study. *Journal of Diagnostic Medical Sonography*, 34(5), 329–340. <https://doi.org/10.1177/8756479318776219>



43. Williams, J., Mantel, E., & Colloton, J. (2017). The impact of facility design on scanner utilization and efficiency while ensuring patient centered care in a PET/CT facility. In *Journal of Nuclear Medicine SNMMI Annual Meeting Abstracts* (Vol. 58, Supplement 1, pp. 790–790). Colorado. Retrieved from http://jnm.snmmjournals.org/content/58/supplement_1/790

Other (Staff- and Organizational-Related)

44. Fay, L., Cai, H., & Real, K. (2018). A Systematic Literature Review of Empirical Studies on Decentralized Nursing Stations. *HERD: Health Environments Research & Design Journal*, in press. <https://doi.org/10.1177/1937586718805222>
45. Hamilton, D. K. (2019). Horseshoe, Cockpit, and Dragonfly: Nurse Movement in Headwall Patient Rooms. *Critical Care Nursing Quarterly*, 42(1), 47–52. <https://doi.org/10.1097/CNQ.0000000000000237>
46. Nazarian, M., Price, A., Demian, P., & Malekzadeh, M. (2018). Design Lessons From the Analysis of Nurse Journeys in a Hospital Ward. *HERD: Health Environments Research & Design Journal*, 11(4), 116–129. <https://doi.org/10.1177/1937586718779244>
47. Peavey, E., & Cai, H. (2018). A Systems Framework for Understanding the Environment's Relation to Clinical Teamwork: A Systematic Literature Review of Empirical Studies. *Environment and Behavior*, in press. <https://doi.org/10.1177/0013916518815535>
48. Real, K., Santiago, J., Fay, L., Isaacs, K., & Carll-White, A. (2018). The Social Logic of Nursing Communication and Team Processes in Centralized and Decentralized Work Spaces. *Health Communication*, in press. <https://doi.org/10.1080/10410236.2018.1536940>
49. Sandberg, W. S., Daily, B., Egan, M., Stahl, J. E., Goldman, J. M., Wiklund, R. A., & Rattner, D. (2005). Deliberate Perioperative Systems Design Improves Operating Room Throughput. *Anesthesiology: The Journal of the American Society of Anesthesiologists*, 103(2), 406–418. [10.1097/00000542-200508000-00025](https://doi.org/10.1097/00000542-200508000-00025)
50. Sommerich, C. M., Pires, A. S., Lavender, S. A., Sanders, E. B.-N., Evans, K. D., Li, J., & Patterson, E. (2016). Architects' and interior designers' perspectives on hospital patient rooms designed by the people who work in these rooms. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 60, pp. 588–592). Washington, DC: SAGE Journals. <https://doi.org/10.1177/1541931213601135>