



digital copy

The Influence of Organizational Factors on Firefighters' Well-being

Wing Tse, Dr. Leanne Son Hing, Ella Gomes & Mais Haj-Ayoub
Department of Psychology, University of Guelph

UNIVERSITY of GUELPH

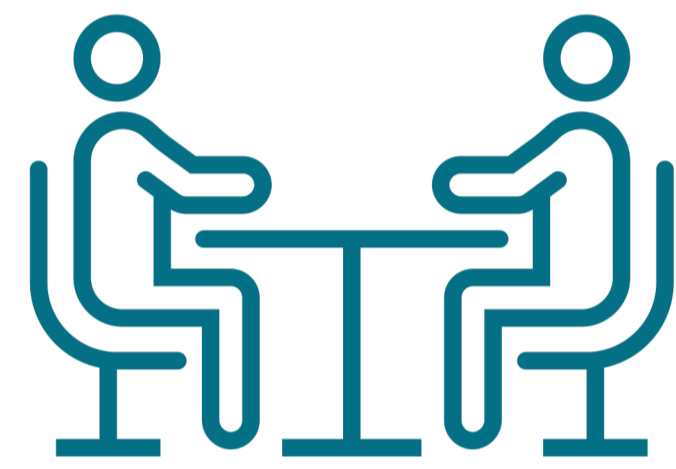
WIDE GEN LAB

INTRODUCTION

- Workplace Factors** > **Task Factors**
- Greater effects on firefighter (FF) well-being and burnout (Armstrong et al., 2016).
 - Cannot be changed / the least malleable factors (Edgelow et al., 2021).

Community Engaged Research

- Advisory committee
- Diverse perspectives
- Contextualize issues
- Review survey
- Review report
- Co-authorship



EMPOWERMENT (well-being): meaning, competence, impact, autonomy

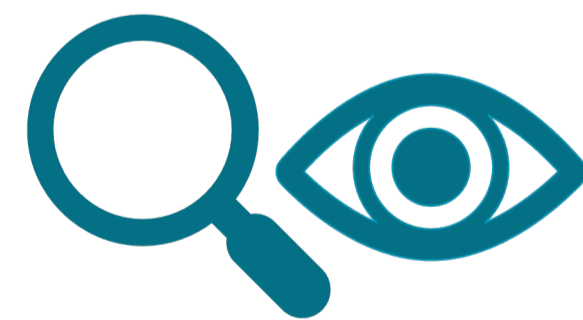


BURNOUT (ill-being): exhaustion, cynicism, inefficacy

TASK REPUTATION: how other's see their competence



MONITORING BEHAVIOURS assesses trust



PSYCHOLOGICAL SAFETY fearless interpersonal risk-taking



HYPOTHESES

- Stronger reputation will predict greater empowerment (H1) and less burnout (H4)
- Greater monitoring behaviours will predict greater burnout (H3)
- Stronger psychological safety will predict greater empowerment (H2) and less burnout (H5)

METHODOLOGY

PARTICIPANTS

N = 268
FD population size ~ 300

Inclusion Criteria

- Active Firefighters
- Captains
- Battalion Chiefs

RECRUITMENT



Organizational Buy-in



Union Emails



Chiefs Endorsement



Station Visits

MEASURES

- Maslach Burnout Inventory* (12 items, 1-7) "I feel drained when I finish work."
- Psychological Empowerment Scale* (12 items, 1-7) "The work I do is meaningful."
- Monitoring Behaviours Scale* (4 items, 1-7) "In this Department, people watch each other very closely."
- Personal Reputation Scale* (4 items, 1-7) "My reputation can survive a mistake."
- Climate for Psychological Safety Scale* (6 items, 1-5) "It is difficult to ask others for help in our Department."

PROCEDURE

- Concurrent survey
- Randomized order of scales



Incentive

- 1/50 cash draw of \$50

RESULTS

Variable	M	SD	Task Rep.	Psyc. Safety	Mon. Beh.	Burnout	Psyc. Emp.
Task Rep. ^a	5.36	1.04	(.74)	—	—	—	—
Psyc. Safety ^b	3.13	0.70	.41***	(.75)	—	—	—
Mon. Beh. ^a	5.40	0.93	-.14	-.10	(.70)	—	—
Burnout ^a	2.50	0.78	-.26***	-.51***	.12	(.82)	—
Psyc. Emp. ^a	5.66	0.85	.35***	.35***	-.11	-.34***	(.79)

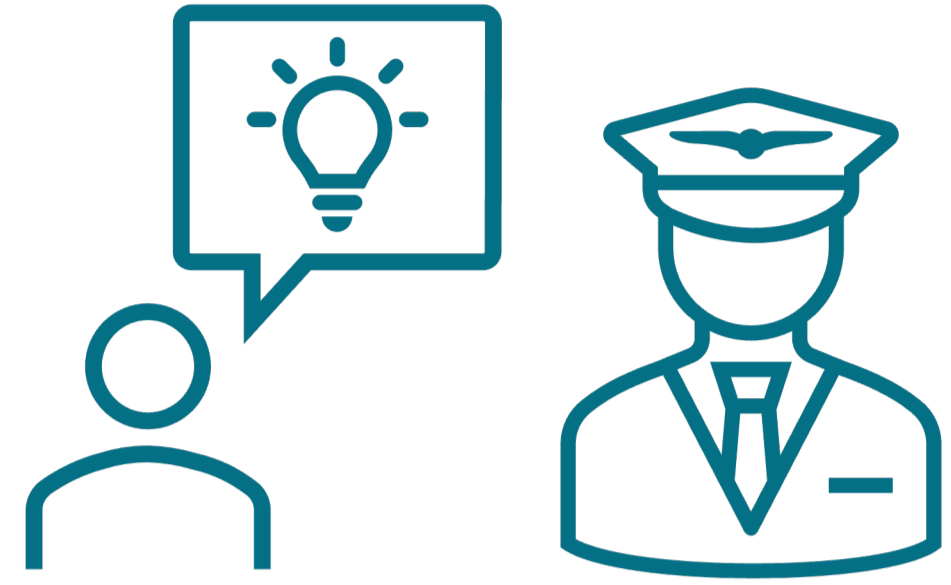
N = 189. * p < 0.05, ** p < 0.01, *** p < 0.001. Means (a 1-7, b 1-5).

Variable	β	SE _β	sr ²	95% CI
Psyc. Emp.				
Task Rep.	.182*	.060	.041	[.048, .321]
Psyc. Safety	.300***	.088	.053	[.124, .481]
Mon. Beh.	-.042	.061	.002	[-.153, .080]
Burnout				
Task Rep.	-.035	.052	.002	[-.146, .070]
Psyc. Safety	-.543***	.076	.200	[-.693, -.384]
Mon. Beh.	.060	.053	.005	[-.030, .149]

N = 189. * p < 0.05, ** p < 0.01, *** p < 0.001.

DISCUSSION

- Decision makers can implement changes to work climates/cultures
- Policy changes
- Mentorship programs
- Performance reviews / feedback
- Positive reinforcement after critical incidents reassures a firefighters' professional task reputation
- Belongingness enables individuals to flourish and promotes well-being
- Identifying needs through grassroots communication to guide upper management goals such as workplace well-being, recruitment, retention, and performance
- Stigma contributes to a psychologically unsafe workplace, burnout and pathology
- Organizational factors can set the foundation for FF behavioural health

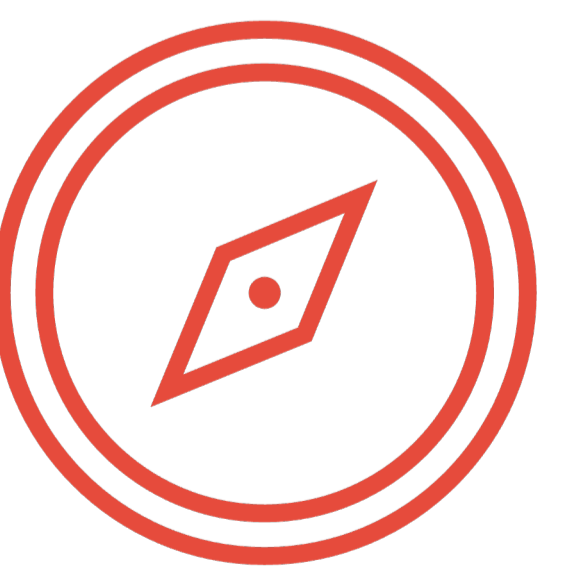


LIMITATIONS

- Fire departments have been known to be hypercompetitive and masculine dominant cultures, which can influence the climates and social norms for FFs
- The FD climate has many subcultures that cannot be ignored that can confound on these outcomes

FUTURE DIRECTIONS

- More research is needed to describe the unique non-emergency setting of firefighting
- Addressing how organizational factors intersect with minorities and other group differences
- Qualitative research to explore firefighters' perceptions in relation to the problems within the fire service



Psychological safety lessens firefighters' feelings of burnout.

Contact Information: tsew@uoguelph.ca

REFERENCES

- Armstrong, Deanne, Jane Shakespeare-Finch, and Ian Shochet. "Organizational Belongingness Mediates the Relationship between Sources of Stress and Posttrauma Outcomes in Firefighters." *Psychological Trauma: Theory, Research, Practice, and Policy* 8, no. 3 (2016): 343–47. <https://doi.org/10.1037/tra0000083>.
- Ashforth, Blake E. "The Experience of Powerlessness in Organizations." *Organizational Behavior and Human Decision Processes* 43, no. 2 (April 1989): 207–42. [https://doi.org/10.1016/0749-5978\(89\)90051-4](https://doi.org/10.1016/0749-5978(89)90051-4).
- Baer, Markus, and Michael Frese. "Innovation Is Not Enough: Climates for Initiative and Psychological Safety, Process Innovations, and Firm Performance." *Journal of Organizational Behavior* 24, no. 1 (2003): 45–68. <https://doi.org/10.1002/job.179>.
- Bakker, Arnold B., Evangelia Demerouti, and Willem Verbeke. "Using the Job Demands-Resources Model to Predict Burnout and Performance." *Human Resource Management* 43, no. 1 (2004): 83–104. <https://doi.org/10.1002/hrm.20004>.
- Baumeister, Roy F, and Mark R Leary. "The Need to Belong: Desire for Interpersonal Attachments as a Fundamental Human Motivation," n.d.
- Carleton, R. Nicholas, Tracie O. Afifi, Tamara Taillieu, Sarah Turner, Julia E. Mason, Rosemary Ricciardelli, Donald R. McCreary, et al. "Assessing the Relative Impact of Diverse Stressors among Public Safety Personnel." *International Journal of Environmental Research and Public Health* 17, no. 4 (January 2020): 1234. <https://doi.org/10.3390/ijerph17041234>.
- Carpenter, Thomas P., Michelle L. Pennington, Jyssa Seebeck, Denise R. Gomez, Tessa C. Denman, Nathan A. Kimbrel, Claire M. Cammarata, Frank Leto, William J. Ostiguy, and Suzy B. Gulliver. "Dispositional Self-Forgiveness in Firefighters Predicts Less Help-Seeking Stigma and Fewer Mental Health Challenges." *Stigma and Health* 5, no. 1 (February 2020): 29–37. <https://doi.org/10.1037/sah0000172>.
- Carter, Andrea D. "Belonging Within the Workplace: Mixed Methods Constructivist Grounded Theory Study for Instrument Validation and Behavioural Indicators for Performance & Governance." *ProQuest Dissertations and Theses*. M.A., Adler University, 2022. <https://www.proquest.com/docview/2716586005/abstract/D16A1E0081B64C13PQ/1>.
- Costa, Ana Cristina, and Neil Anderson. "Measuring Trust in Teams: Development and Validation of a Multifaceted Measure of Formative and Reflective Indicators of Team Trust." *European Journal of Work and Organizational Psychology* 20, no. 1 (February 2011): 119–54. <https://doi.org/10.1080/13594320903272083>.
- Currall, Steven C., and Timothy A. Judge. "Measuring Trust between Organizational Boundary Role Persons." *Organizational Behavior and Human Decision Processes* 64, no. 2 (November 1995): 151–70. <https://doi.org/10.1006/obhd.1995.1097>.
- De Villiers, Japie R., and Marius W. Stander. "Psychological Empowerment, Work Engagement and Turnover Intention: The Role of Leader Relations and Role Clarity in a Financial Institution." *Journal of Psychology in Africa* 21, no. 3 (January 2011): 405–12. <https://doi.org/10.1080/14330237.2011.10820474>.
- Demerouti, Evangelia, Arnold B. Bakker, Friedhelm Nachreiner, and Wilmar B. Schaufeli. "The Job Demands-Resources Model of Burnout." *Journal of Applied Psychology* 86, no. 3 (2001): 499–512. <https://doi.org/10.1037/0021-9010.86.3.499>.
- Edgelow, Megan, Agnieszka Fecica, Caroline Kohlen, and Kirandeep Tandal. "Mental Health of Public Safety Personnel: Developing a Model of Operational, Organizational, and Personal Factors in Public Safety Organizations." *Frontiers in Public Health* 11 (March 2, 2023): 1140983. <https://doi.org/10.3389/fpubh.2023.1140983>.
- Edgelow, Megan, Kathleen Legassick, Jessica Novecosky, and Agnieszka Fecica. "Return to Work Experiences of Ontario Public Safety Personnel with Work-Related Psychological Injuries." *Journal of Occupational Rehabilitation* 33, no. 4 (December 2023): 796–807. <https://doi.org/10.1007/s10926-023-10114-6>.
- Edgelow, Megan, Ana Petrovic, Clare Gaherty, and Agnieszka Fecica. "Occupational Therapy and Public Safety Personnel: Return to Work Practices and Experiences." *Canadian Journal of Occupational Therapy*, December 25, 2023, 00084174231222075. <https://doi.org/10.1177/00084174231222075>.
- Edgelow, Megan, Emma Scholefield, Matthew McPherson, Kathleen Legassick, and Jessica Novecosky. "Organizational Factors and Their Impact on Mental Health in Public Safety Organizations." *International Journal of Environmental Research and Public Health* 19, no. 21 (October 27, 2022): 13993. <https://doi.org/10.3390/ijerph192113993>.
- Edgelow, Megan, Emma Scholefield, Matthew McPherson, Sonam Mehta, and Aquila Ortlieb. "A Review of Workplace Mental Health Interventions and Their Implementation in Public Safety Organizations." *International Archives of Occupational and Environmental Health* 95, no. 3 (April 2022): 645–64. <https://doi.org/10.1007/s00420-021-01772-1>.
- Edmondson, Amy. "Psychological Safety and Learning Behavior in Work Teams." *Administrative Science Quarterly* 44, no. 2 (June 1999): 350–83. <https://doi.org/10.2307/2666999>.
- Frazier, M. Lance, Stav Fainshmidt, Ryan L. Klinger, Amir Pезeshkan, and Veselina Vraceva. "Psychological Safety: A Meta-Analytic Review and Extension." *Personnel Psychology* 70, no. 1 (2017): 113–65. <https://doi.org/10.1111/peps.12183>.
- Gulliver, Suzy B., Michelle L. Pennington, Megan Cardenas, Jordan E. Lewis, Claire M. Cammarata, Frank Leto, William J. Ostiguy, Eric C. Meyer, and Nathan A. Kimbrel. "Stamp Out Stigma: A National Campaign to Decrease Stigma and Increase Behavioral Health in Fire Service." *Cognitive Behaviour Therapy* 52, no. 6 (November 2, 2023): 625–40. <https://doi.org/10.1080/16506073.2023.2233695>.
- Haugen, Peter T., Aileen M. McCrillis, Geert E. Smid, and Mirjam J. Nijdam. "Mental Health Stigma and Barriers to Mental Health Care for First Responders: A Systematic Review and Meta-Analysis." *Journal of Psychiatric Research* 94 (November 2017): 218–29. <https://doi.org/10.1016/j.jpsychires.2017.08.001>.
- Henderson, Sarah N., Vincent B. Van Hasselt, Todd J. LeDuc, and Judy Couwels. "Firefighter Suicide: Understanding Cultural Challenges for Mental Health Professionals." *Professional Psychology: Research and Practice* 47, no. 3 (2016): 224–30. <https://doi.org/10.1037/pro0000072>.
- Jacobson, Ann, Susann Backteman-Erlanson, Christine Brulin, and Åsa Hörnsten. "Experiences of Critical Incidents among Female and Male Firefighters." *International Emergency Nursing* 23, no. 2 (April 2015): 100–104. <https://doi.org/10.1016/j.ienj.2014.06.002>.
- Johnson, Candice C., Luzimar Vega, Alicia L. Kohalmi, Jennifer C. Roth, Brittany R. Howell, and Vincent B. Van Hasselt. "Enhancing Mental Health Treatment for the Firefighter Population: Understanding Fire Culture, Treatment Barriers, Practice Implications, and Research Directions." *Professional Psychology: Research and Practice* 51, no. 3 (June 2020): 304–11. <https://doi.org/10.1037/pro0000266>.
- Karsavuran, Seda, and Sıdıka Kaya. "The Relationship between Burnout and Mobbing among Hospital Managers." *Nursing Ethics* 24, no. 3 (May 2017): 337–48. <https://doi.org/10.1177/0969733015602054>.
- Klinefelter, Zachary, Robert R. Sinclair, Thomas W. Britt, Gargi Sawhney, Kristen Jennings Black, and Alec Munc. "Psychosocial Safety Climate and Stigma: Reporting Stress-related Concerns at Work." *Stress and Health* 37, no. 3 (August 2021): 488–503. <https://doi.org/10.1002/smi.3010>.
- Langfred, Claus W. "Too Much of a Good Thing? Negative Effects of High Trust and Individual Autonomy in Self-Managing Teams." *The Academy of Management Journal* 47, no. 3 (2004): 385–99. <https://doi.org/10.2307/20159588>.
- Llorens, Susana, Marisa Salanova, María José Chambel, Pedro Torrente, and Rui P. Ângelo. "Organizational Drivers of Burnout and Work Engagement: A Multilevel Study in Portuguese Firefighter Brigades." *International Journal of Environmental Research and Public Health* 19, no. 7 (March 29, 2022): 4053. <https://doi.org/10.3390/ijerph19074053>.
- Llorente-Alonso, Marta, Cristina García-Ael, and Gabriela Topa. "A Meta-Analysis of Psychological Empowerment: Antecedents, Organizational Outcomes, and Moderating Variables." *Current Psychology*, February 28, 2023. <https://doi.org/10.1007/s12144-023-04369-8>.
- MacDermid, Joy C., Margaret Lomotan, and Mostin A. Hu. "Canadian Career Firefighters' Mental Health Impacts and Priorities." *International Journal of Environmental Research and Public Health* 18, no. 23 (December 1, 2021): 12666. <https://doi.org/10.3390/ijerph182312666>.
- Park, Hyeon, Johanna Inhyang Kim, Sohee Oh, and Jeong-Hyun Kim. "The Impact of Emotional Labor on the Severity of PTSD Symptoms in Firefighters." *Comprehensive Psychiatry* 83 (May 2018): 53–58. <https://doi.org/10.1016/j.comppsy.2018.03.002>.
- Regehr, Cheryl, Gina Dimitropoulos, Elaine Bright, Sharon George, and Joscelyn Henderson. "Behind the Brotherhood: Rewards and Challenges for Wives of Firefighters." *Family Relations* 54, no. 3 (2005): 423–35. <https://doi.org/10.1111/j.1741-3729.2005.00328.x>.
- Scott, Diane, Billie Ratiliff, and Cara English. "Sounding the Alarm: Firefighter Behavioral Health and Suicide Prevention." *International Journal of Integrated Care* 22, no. S2 (May 16, 2022): 16. <https://doi.org/10.5334/ijic.ICIC21290>.
- Shakespeare-Finch, Jane, and Emma Daley. "Workplace Belongingness, Distress, and Resilience in Emergency Service Workers." *Psychological Trauma: Theory, Research, Practice, and Policy* 9, no. 1 (2017): 32–35. <https://doi.org/10.1037/tra0000108>.
- Singh, Tripti, and Allen Johnston. "How Much Is Too Much: Employee Monitoring, Surveillance, and Strain." *ICIS 2019 Proceedings*, November 6, 2019. https://aisel.aisnet.org/icis2019/cyber_security_privacy_ethics_IS/cyber_security_privacy/31.
- Smith, Todd D., David M. DeJoy, Mari-Amanda (Aimee) Dyal, and Gaojian Huang. "Impact of Work Pressure, Work Stress and Work–Family Conflict on Firefighter Burnout." *Archives of Environmental & Occupational Health* 74, no. 4 (July 4, 2019): 215–22. <https://doi.org/10.1080/19338244.2017.1395789>.
- Sommerfeld, Anne, Shannon L. Wagner, Henry G. Harder, and Glen Schmidt. "Behavioral Health and Firefighters: An Intervention and Interviews with Canadian Firefighters." *Journal of Loss and Trauma* 22, no. 4 (May 19, 2017): 307–24. <https://doi.org/10.1080/15325024.2017.1284515>.
- Spreitzer, Gretchen M. "Psychological, Empowerment in the Workplace: Dimensions, Measurement and Validation." *Academy of Management Journal* 38, no. 5 (October 1995): 1442–65. <https://doi.org/10.2307/256865>.
- Sun, Tao, Jinghui Wang, Shu'e Zhang, Yu Shi, Bei Liu, and Xiaohe Wang. "Status, Causes and Consequences of Physicians' Self-Perceived Professional Reputation Damage in China: A Cross-Sectional Survey." *BMC Health Services Research* 21, no. 1 (April 14, 2021): 344. <https://doi.org/10.1186/s12913-021-06306-6>.
- Van De Voorde, Karina, Monique Veld, and Marc Van Veldhoven. "Connecting Empowerment-Focused HRM and Labour Productivity to Work Engagement: The Mediating Role of Job Demands and Resources." *Human Resource Management Journal* 26, no. 2 (2016): 192–210. <https://doi.org/10.1111/1748-8583.12099>.
- Van Laar, Colette, Loes Meeussen, Jenny Veldman, Sanne Van Grootel, Naomi Sterk, and Catho Jacobs. "Coping With Stigma in the Workplace: Understanding the Role of Threat Regulation, Supportive Factors, and Potential Hidden Costs." *Frontiers in Psychology* 10 (2019). <https://www.frontiersin.org/journals/psychology/articles/10.3389/fpsyg.2019.01879>.
- Vevoda, Jiri, Sarka Vevodova, and Marie Nakladalova. "The Relationship between Psychological Safety and Burnout among Nurses," July 2016. https://www.researchgate.net/publication/305032643_The_relationship_between_psychological_safety_and_burnout_among_nurses.
- Zand, Dale E. "Trust and Managerial Problem Solving." *Administrative Science Quarterly* 17, no. 2 (1972): 229–39. <https://doi.org/10.2307/2393957>.
- Zinko, Robert, William A. Gentry, and Mary Dana Laird. "A Development of the Dimensions of Personal Reputation in Organizations." *International Journal of Organizational Analysis* 24, no. 4 (September 5, 2016): 634–49. <https://doi.org/10.1108/IJOA-04-2015-0854>.