

The 2023 Terror Attack on Southern Israel: Well-Being and Burnout Among Health Care Personnel Treating Traumatized Evacuees

Dikla Agur Cohen, MD, MSc^{1,2}

Merav Sudarsky, MD^{1,2}

¹The Ruth and Baruch Rappaport Faculty of Medicine, Technion, Bat Galim, Haifa, Israel

²The Family Medicine Department, Clalit Health Services, Haifa and Western Galilee district, Israel

ABSTRACT

This study investigates the well-being, resilience, and burnout of health care personnel treating evacuees with severe trauma following a major terrorist attack in southern Israel on October 7, 2023. Longitudinal trends and factors influencing personnel's emotional states are explored. Questionnaires from 129 health care personnel recruited from primary care clinics, including those serving evacuees exclusively, revealed significant correlations of self-efficacy and well-being with gender and religiosity, impacting burnout levels. Professional experience and exposure to traumatized evacuees were also linked to well-being. This research addresses a crucial gap in understanding personnel's emotional resilience and guiding interventions to enhance personnel well-being and improve patient care quality.

Ann Fam Med 2024;22:Online. <https://doi.org/10.1370/afm.3171>

Annals Early Access article

INTRODUCTION

The October 7, 2023 terrorist attack in Israel profoundly affected the nation, triggering reflections on resilience, trauma, and societal response as communities grappled with the aftermath. With countless individuals forced to evacuate, the challenge of rebuilding lives amidst uncertainty emerged starkly.¹ This event underscores broader global challenges, with over 25 million refugees worldwide.² Providing adequate health care for this demographic is imperative, emphasizing the importance of addressing the well-being of health care personnel amidst such crises.

Primary care clinicians often bear significant burdens during wartime, confronting the mental and physical suffering of individuals, families, and communities. Exposure to traumatic experiences can lead to secondary traumatization, impacting clinicians' mental health and job performance.³

Research often overlooks the well-being of health care clinicians, particularly within primary care settings, despite their known exposure to trauma. This study addresses this gap by investigating the levels of well-being, resilience, and burnout among primary care staff treating severely traumatized patients. By providing essential insights into this aspect of health care delivery, the research aims to enhance understanding of the emotional impact on personnel and contribute to the planning of effective interventions for improved well-being and job satisfaction in health care settings.

METHODS

The study, conducted from October 15th to November 20th, 2023, employed a cross-sectional methodology to survey primary care medical staff in Israel. Electronic questionnaires were distributed through professional social networks, reaching approximately 600 members, with respondents coming from diverse urban and rural clinics serving both the Jewish and Arab sectors. The sample comprised various medical professionals, including family physicians, nurses, medical secretaries, and social workers. The questionnaire included demographic questions, the Abbreviated Maslach Burnout Inventory (a-MBI),⁴ and the Mental Health Continuum-Short Form (MHC-SF),⁵ validated tools measuring burnout and positive mental

Conflicts of interest: authors report none.

CORRESPONDING AUTHOR

Dikla Agur Cohen
Rappaport Faculty of Medicine
Technion
HaShachaf 6 Street
Haifa, Israel
dikla.agur@gmail.com

health, respectively. Statistical analyses, including descriptive statistics and various tests such as Cronbach's α , χ^2 , *t*-test, ANOVA, and predictive models, were employed to analyze responses. Ethical considerations were paramount, with strict confidentiality measures, informed consent, and approval from the Institutional Review Board.

RESULTS

The study survey was completed by 129 participants, who constituted approximately 20% of the professional network members. Their demographic data are presented in [Table 1](#). Predominantly female (78%) and aged an average of 49 years, most were family physicians (68%), Israeli-born (82%), secular (78%), and Jewish (90%).

The internal consistency of the questionnaires demonstrated robust reliability across all variables, including emotional exhaustion, self-efficacy, depersonalization, and well-being. *t*-test results showed marginally significant differences for gender and religious affiliation. One-way ANOVA, as seen in [Table 2](#), revealed significant results regarding well-being and the extent of exposure to traumatized patients.

Exposure to traumatized patients for 1 month correlated with higher depersonalization levels compared with those not exposed. Professional experience emerged as a protective factor for well-being and mental exhaustion, while a negative correlation was observed between increasing age and depersonalization.

Predictive models ([Table 3](#)) revealed a negative correlation between increasing age and depersonalization and a protective effect of professional experience on well-being. Age and religious affiliation emerged as significant predictors of mental exhaustion, a finding that was in line with the marginal findings from the *t*-tests.

In addition, males reported higher levels of well-being than did females.

DISCUSSION

Although numerous studies have addressed the mental health challenges faced by evacuees⁶, knowledge on the impact of exposure to traumatized patients on health care personnel is

Table 1. Demographic Data

Parameter	No. (%) (n = 129)	Parameter	No. (%) (n = 129)
Sex		Exposed to additional stressors	
Female	100 (78)	Enlisted spouse or child	5 (4)
Male	29 (22)	You were enlisted	32 (25)
Place of birth		No additional personal stressors	73 (57)
Israel	107 (83)	Loss of a family member or friend	7 (5)
Other	22 (17)	Exposed to risk	6 (5)
Age, y		Other	5 (4)
Mean	49	Profession	
Median (Min, Max)	47 (28, 82)	Senior family physician	72 (56)
Marital status		Resident	16 (12)
Married	107 (83)	Nurse	27 (21)
Divorced	7 (5)	Physiotherapist	6 (5)
Separated	1 (1)	Social worker	5 (4)
In a relationship	8 (6)	Other	2 (2)
Widowed	2 (2)	Clinic type	
Single	4 (3)	Urban	69 (53)
Have children		Rural	33 (26)
Yes	117 (91)	Mixed urban and rural	24 (19)
No	11 (9)	Other	3 (2)
Sector		Experience, y	
Arab	8 (6)	1-5	22 (17)
Druze	1 (1)	6-10	20 (16)
Jewish	116 (90)	11-15	27 (13)
Other	4 (3)	15 and more	69 (53)
Residence		Religiosity	
Conflict zone	21 (16)	Secular	100 (78)
Non-conflict zone	101 (78)	Traditional	14 (11)
Other	7 (5)	Religious	14 (11)
Forced to evacuate home due to the war		How often do you work with evacuees with severe trauma?	
No	123 (95)	Every day	39 (30)
Yes	5 (4)	2-3 times a week	26 (20)
		2-3 times a month	18 (14)
		Never	46 (36)

still lacking, especially concerning the positive impact and the well-being of the health care clinician population.

Health care clinicians often experience secondary traumatization while treating patients with high levels of trauma.⁷ The study adds to existing knowledge by shedding light on the impact of exposure to traumatized patients, demonstrating a sense of significance and self-efficacy experienced in treating evacuees that enhance their well-being. The study also highlights the crucial role of self-efficacy in mitigating burnout among health care professionals, supporting previous findings and emphasizing the need for sustained mental health support in communities grappling with prolonged crises.⁸

Gender-based differences in well-being measures, with men reporting higher scores, prompt consideration of

Table 2. Analysis of Variance (ANOVA): One-Way ANOVA

Independent Variable	Dependent Variable	df	Sum of Squares	Mean Square	F Distribution	Pr(>F)
Professional experience Values, y: 1-5; 6-10; 11-15; 15	Mental exhaustion	3	12.04	4.01	2.45	0.07
	Self-efficacy	3	3.47	1.16	1.34	0.27
	Depersonalization	3	5.64	1.88	1.72	0.17
	Well-being	3	7.12	2.37	3.39	0.02
Exposure to evacuees Values: entire mo; 2-3 wks/mo; 1-7 d/mo; none	Mental exhaustion	3	4.81	1.60	0.95	0.42
	Self-efficacy	3	5.26	1.75	2.06	0.11
	Depersonalization	3	13.19	4.4	4.28	0.01
	Well-being	3	1.22	0.41	0.55	0.65
Clinic type Values: urban; rural; mixed	Mental exhaustion	2	2.82	1.41	0.86	0.42
	Self-efficacy	2	0.54	0.27	0.32	0.72
	Depersonalization	2	2.18	1.09	0.99	0.37
	Well-being	2	0.81	0.4	0.56	0.57

F = ratio of the distribution of 2 normally distributed independent variables; Pr(>F) = P value of F

gender-tailored interventions, while professional experience and age emerge as protective factors against depersonalization, challenging previous research.⁹ Surprisingly, residence in conflict zones does not significantly influence well-being, suggesting the universality of mental health challenges among primary care medical personnel, irrespective of geopolitical proximity.¹¹ Furthermore, the study reveals religiosity-related differences, indicating a nuanced relationship between faith, coping mechanisms, and mental exhaustion.¹⁰ The findings also highlight the correlation between exposure duration to traumatized patients and depersonalization, underscoring the need for interventions to mitigate psychological impact and address the risk of secondary traumatization among health care providers.

Table 3. Predictive Models of Mental Exhaustion, Depersonalization, and Well-Being Regression Equations

Variable	Estimate	Standard Error	t Value	Pr(> t)
Dependent Variable: Mental Exhaustion				
Intercept	4.53	0.48	9.34	< .001
Age	-0.03	0.01	-2.75	.007
Religious	0.55	0.27	2.05	.042
$R^2 = 0.09$				
Dependent Variable: Depersonalization				
Intercept	3.116	0.42	7.57	< .001
Age	-0.018	0.01	-2.34	.021
$R^2 = 0.13$				
Dependent Variable: Well-Being				
Intercept	4.56	0.23	19.68	< .001
Female	-0.38	0.18	-2.03	.045
$R^2 = 0.1$				

Pr(>|t|) = P value of t value; R^2 = coefficient of determination

Limitations and Implications

The study's limitations, including a low response rate and reliance on self-reported measures, require cautious interpretation. The research does not draw conclusions about the culturally adapted treatment recommended in previous studies.⁹

Findings offer insights into the support needed for health care practice, however, suggesting tailored interventions to support personnel treating evacuees. Other research recommendations, including both trauma-informed care and cultural competence training, can foster a workplace culture prioritizing mental health, enhancing workforce resilience and patient care outcomes.

Future research endeavors should strive for more representative samples and longitudinal designs to fortify intervention strategies effectively.

Future Directions

Our next phase includes redistributing the questionnaires to capture evolving perspectives after the October 7, 2023 events, conducting a qualitative phase with in-depth interviews to explore factors affecting mental health, and collaborating with a colleague in Ukraine to expand the research scope.



[Read or post commentaries in response to this article.](#)

Submitted January 1, 2024; submitted, revised, May 21, 2024; accepted May 29, 2024

Key words: well-being; burnout, professional; resilience; health personnel; trauma and stress-related disorders; patients; evacuees; mental health

References

- Levi-Belz Y, Groweiss Y, Blank C, Neria Y. PTSD, depression, and anxiety after the October 7, 2023 attack in Israel: a nationwide prospective study. *Eclinical Medicine*. 2024;68(0):102418. [10.1016/j.eclinm.2023.102418](https://doi.org/10.1016/j.eclinm.2023.102418)
- Migration and inclusive societies. UNESCO. Accessed Feb 21, 2024. <https://www.unesco.org/en/no-racism-no-discrimination/migration>
- Zimering R. Secondary traumatization in mental health care providers. *Psychiatr Times*. 2003;20(4):43-43. Accessed Feb 18, 2024. <https://go.gale.com/ps/i.do?p=AONE&sw=w&issn=08932905&v=2.1&it=r&id=GALE%7CA99613158&sid=googleScholar&linkaccess=abs>
- Riley MR, Mohr DC, Waddimba AC. The reliability and validity of three-item screening measures for burnout: Evidence from group-employed health care practitioners in upstate New York. *Stress Health*. 2018;34(1):187-193. [10.1002/smi.2762](https://doi.org/10.1002/smi.2762)
- Lamers SMA, Westerhof GJ, Bohlmeijer ET, ten Klooster PM, Keyes CLM. Evaluating the psychometric properties of the Mental Health Continuum-Short Form (MHC-SF). *J Clin Psychol*. 2011;67(1):99-110. [10.1002/jclp.20741](https://doi.org/10.1002/jclp.20741)
- Loera B, Converso D, Viotti S. Evaluating the psychometric properties of the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) among Italian nurses: how many factors must a researcher consider? *PLoS One*. 2014;9(12):e114987. [10.1371/journal.pone.0114987](https://doi.org/10.1371/journal.pone.0114987)

7. A systematic literature review of reported challenges in health care delivery to migrants and refugees in high-income countries - the 3C model. *BMC Public Health*. Accessed Nov 15, 2023. <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-019-7049-x>
8. Orrù G, Marzetti F, Conversano C, et al. Secondary traumatic stress and burnout in healthcare workers during COVID-19 outbreak. *Int J Environ Res Public Health*. 2021;18(1):337. [10.3390/ijerph18010337](https://doi.org/10.3390/ijerph18010337)
9. Wolf C. Fired up or burned out: the relationship between self-efficacy and burnout among physician assistant program directors and principal faculty. *J Allied Health*. 2023;52(4):e163-e170. Accessed Feb 21, 2024. pubmed.ncbi.nlm.nih.gov/38036479/
10. Dyrbye LN, Varkey P, Boone SL, Satele DV, Sloan JA, Shanafelt TD. Physician satisfaction and burnout at different career stages. *Mayo Clin Proc*. 2013; 88(12):1358-1367. [10.1016/j.mayocp.2013.07.016](https://doi.org/10.1016/j.mayocp.2013.07.016)
11. Duong D. Q&A: As a doctor in a war zone “you have to come to grips with your limitations.” *CMAJ Can Med Assoc J*. 2022;194(22):E781-E782. [10.1503/cmaj.1096002](https://doi.org/10.1503/cmaj.1096002)
12. Galen LW, Kloet JD. Mental well-being in the religious and the non-religious: evidence for a curvilinear relationship. *Ment Health Relig Cult*. 2011;14(7):673-689. [10.1080/13674676.2010.510829](https://doi.org/10.1080/13674676.2010.510829)