Title

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Publication Date

2022-11-01

DOI

10.1016/j.genhosppsych.2022.11.003

Peer reviewed

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General Hospital Psychiatry 79 (2022) 158–161

Contents lists available at ScienceDirect

General Hospital Psychiatry

journal homepage: www.elsevier.com/locate/genhospsych

Short communication

Downstream consequences of moral distress in COVID-19 frontline healthcare workers: Longitudinal associations with moral injury-related guilt

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ARTICLE INFO

Keywords:
COVID-19
Healthcare workers
Moral distress
Guilt

ABSTRACT

Objective: To examine the longitudinal associations between dimensions of COVID-19 pandemic-related moral distress (MD) and moral injury (MI)-related guilt in a large sample of frontline COVID-19 healthcare workers (FHCWs).*Methods:* Data from a diverse occupational cohort of 786 COVID-19 FHCWs were collected during the initial peak of the COVID-19 pandemic in New York City and again 7 months later. Baseline MD and MI-related guilt at follow-up were assessed in three domains: family-, work-, and infection-related. Social support was evaluated as a potential moderator of associations between MD and MI-related guilt.
Results: A total of 66.8% of FHCWs reported moderate-or-greater levels of MI-related guilt, the most prevalent of which were family (59.9%) or work-related (29.4%). MD was robustly predictive of guilt in a domain-specific manner. Further, among FHCWs with high levels of work-related MD, those with greater perceptions of supervisor support were less likely to develop work-related guilt 7 months later.
Discussion: MD was found to be highly prevalent in FHCWs during the initial wave of the COVID-19 pandemic and was linked to the development of MI-related guilt over time. Prevention and early intervention efforts to mitigate MD and bolster supervisor support may help reduce risk for MI-related guilt in this population.

1. Introduction

Moral distress (MD) refers to negative psychiatric sequelae (e.g., helplessness) that can arise when individuals involved in stressful/traumatic situations are constrained from doing what they believe is right [1,2]. MD has been shown to be elevated in COVID-19 frontline healthcare workers (FHCWs) [3–5] who have, at times, needed to isolate from their families; risk infecting themselves, their loved ones, or patients to provide care; and consider withholding life-saving resources [6]. The long-term consequences of COVID-19-related MD remain unknown. While it may be a transitory experience that diminishes concomitantly with the acuity of the pandemic, MD may also increase risk for moral injury (MI) [2,7]. MI can arise as a consequence of committing, witnessing, or failing to prevent acts that go against deeply-held moral beliefs, and is characterized by persistent feelings of guilt, shame, and/or remorse [8–10]. Determining whether MD predicts key indicators of MI, such as guilt, may inform prevention and intervention efforts. Guilt is a core feature of MI [10,11] and associated with various psychiatric problems, such as depression, burnout, and suicidal ideation [12–14]. Here, we built upon our previous work [5] to evaluate whether

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https://doi.org/10.1016/j.genhosppsych.2022.11.003
Received 9 November 2022; Accepted 11 November 2022
Available online 15 November 2022
0163-8343/Published by Elsevier Inc.

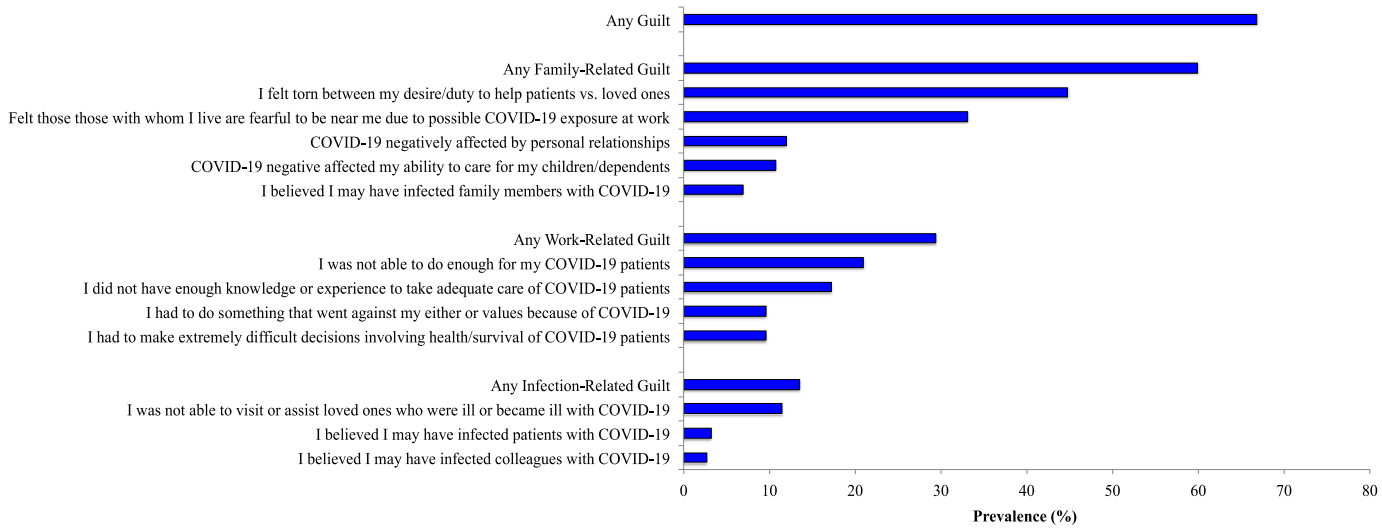

Fig. 1. Prevalence of family-, work-, and infection-related guilt at Time 2 in COVID-19 frontline health care workers.

family-, work-, and infection-related MD predicted MI-related guilt in these domains seven months after initial exposure in an occupationally-diverse cohort of COVID-19 FHCWs. To our knowledge, this is the first prospective study to examine these associations. Because acute stress is linked to chronic psychological difficulties [15], we hypothesized MD would predict MI-related guilt. Further, because greater social support is protective against the development of MI [8–10], we hypothesized it would moderate (i.e., weaken) this association.

2. Methods

2.1. Participants

FHCWs at an urban tertiary care hospital in NYC participated in two surveys: (1) between 4/14/20–5/11/20, which corresponded with the first peak of the pandemic; and (2) at a 7-month follow-up between 11/19/20–1/11/21, which corresponded with a secondary rise-and-plateau of the pandemic. In total, 2579 FHCWs completed the T1 survey and 786 (30.5%) completed T1 and T2. Age, gender, profession, marital and parental status, supervisory role and redeployment status, and pre-pandemic psychiatric history between T2 completers and non-completers did not differ (all $\chi^2 < 1.32$, all p's > 0.20).

2.1.1. Measures

Time 1 moral distress. An 11-item measure of COVID-19-related MD was administered at T1. Our previous work [5] revealed a three-factor solution: *family-related MD* (e.g., "I feel torn between my desire/duty to help patients versus loved ones"; "None of the time" to "All of the time"); *work-related MD* (e.g., "I worry about not being able to do enough for COVID-19 patients"; "Not worried at all" to "Worried nearly all the time"); and *infection-related MD* (e.g., I worry about infecting family with COVID-19″.)

Time 1 Occupational Support. Respondents were asked: "to what extent do you feel valued by your immediate supervisors (team leader, service chief, etc.)?" and "to what extent do you feel valued by hospital leadership?" (4-point scale: Not at all valued to Very much valued).

Time 1 Social Support. Score on abbreviated 3-item version of the MOS Social Support Scale [16]: e.g., "How often is each of the following

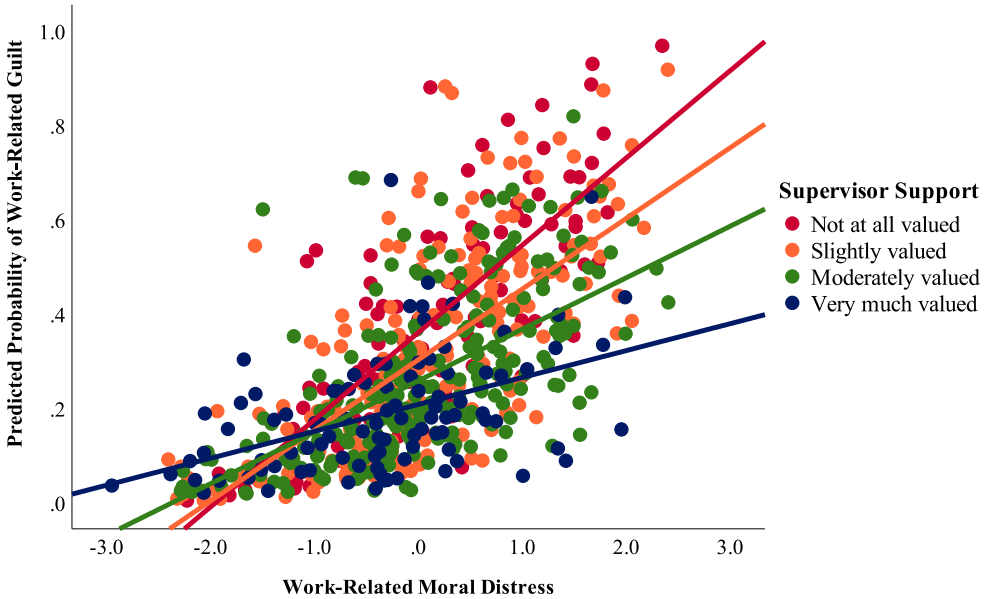

Fig. 2. Interaction of Time 1 work-related moral distress and supervisor support in predicting Time 2 work-related moral guilt.

kinds of support available to you if you need it?: 'Someone to give you good advice in a crisis'" (5-point scale: None of the time to All of the time).

Time 2 Moral Injury-Related Guilt. We modified the MD measure described above to assess family-, work-, and infection-related guilt. Items were rated from "No guilt" to "Extreme guilt" and included the aforementioned domains: e.g., "COVID-19 negatively affected my ability to care for my children/dependents;" "I did not have enough knowledge or experience to take adequate care of COVID-19 patients;" "I believe I may have infected family members with COVID-19." Presence of guilt was operationalized as endorsement of moderate, quite a bit, or extreme guilt.Logistic regression analyses evaluated associations between domain-specific MD at T1 and guilt at T2. Background characteristics that differed by endorsement of any MI at the $p < 0.05$ level were adjusted for in analyses (Supplemental Table 1). Interaction terms were used to evaluate whether occupational or social support at T1 moderated associations between MD and guilt.

3. Results

Fig. 1 shows the prevalence of T2 MI-related guilt in the full sample. A total of 66.8% endorsed one or more aspects of guilt. Family-related guilt was the most prevalent (59.9%), followed by work-related (29.4%) and infection-related (13.5%).

Supplemental Table 2 shows family- and work-related MD at T1 predicted family-related guilt; work-related MD predicted work-related guilt; and infection- and family-related MD predicted infection-related guilt. Fig. 2 shows the significant interaction between T1 work-related MD and T1 supervisor support on T2 work-related guilt. Among FHCWs with higher T1 MD, those who endorsed greater supervisor support at T1 were less likely to endorse work-related guilt at T2.

Note. Work-related moral distress units are standardized scores with 0 = sample mean.

4. Discussion

To our knowledge, this is the first study to show COVID-19-related MD, characterized by worries/concerns during the initial pandemic peak, predicts MI-related guilt in FHCWs. Two-thirds of FHCWs endorsed moderate-to-severe guilt seven months into the pandemic, which was similar to estimates of MD 7-months prior (52%–87%). These findings suggest MD and MI-related guilt are highly prevalent, and that MD may not be a transitory experience; instead, it may confer increased risk for the development of MI-related guilt. Assessment of MD during crises may help identify individuals most at risk of ongoing guilt and who may benefit from early intervention [17,18]. Because family-related guilt was the most prevalent in our sample, policies that provide practical support, such as childcare and staff lodging [19], may also help mitigate risk for ongoing guilt in FHCWs. Results also showed greater supervisor support during the initial COVID-19 peak moderated the effect of MD on MI-related guilt. While it may not be feasible to eliminate morally distressing situations during times of crisis, strategies that promote a culture of support and operationalize the capacity for supervisors to be supportive and establish psychological safety may attenuate the risk for guilt [20,21]. Research is needed to replicate these findings in other samples and with other indicators of MI, such as shame [11]; and evaluate the effectiveness of interventions targeting MD.

Funding

This study was supported by internal funding devoted to COVID-19–related projects from the Icahn School of Medicine at Mount Sinai. Preparation of this report was supported in part by the US Department of Veterans Affairs National Center for Posttraumatic Stress Disorder (Drs Fischer, Norman, Pietrzak). Dr. Feingold was funded by TL1 grant TR001434.

Role of the sponsor

The funders had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; or decision to submit the manuscript for publication.

Relevant financial relationships

Dr Feder is named co-inventor on an issued patent in the US, and several issued patents outside the US, filed by ISMMS for the use of ketamine as a therapy for PTSD; this intellectual property has not been licensed. **Dr Pietrzak** is a research consultant to the Office of Well-Being and Resilience at the Icahn School of Medicine at Mount Sinai. Drs. Fischer, Norman, Feingold, Peccoralo, and Ripp report no financial relationships.

Acknowledgments

The authors thank all the participants at Mount Sinai Hospital who participated in this study. They also acknowledge the COVID-19 Psychological Impact Study Team for their contributions to this project: Chi C. Chan, PhD; Carly A. Kaplan, BS; Halley Kaye-Kauderer, BA; Jaclyn Verity, MPH; Larissa Burka, RN; Alicia Hurtado, MD; and James W. Murrough, MD, PhD. The acknowledged individuals have no relevant financial relationships to disclose.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.genhosppsych.2022.11.003.

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