


Assessment of Psychological Distress in Health Care Workers During the First two Waves of COVID-19: A Follow-up of a Canadian Longitudinal Study

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Abstract

Background: Health care workers (HCW) exposed to COVID-19 risk experiencing psychological distress. Little is known regarding longitudinal perspectives and evolutions of psychological distress within this population. The objective of this study is to extend the results of our previous study to the pandemic's second wave.

Method: This prospective cohort study was conducted from May 8, 2020, to January 24, 2021, and includes 787 HCW. Symptoms of anxiety and depression were assessed using the Generalised Anxiety Disorder-7 (GAD-7) and the Patient Health Questionnaire-9 (PHQ-9). Descriptive statistics illustrated the evolution of psychological distress indicators, whereas latent class analysis helped identify trajectories.

Results: The results showed that a lower proportion of HCW exceeded the clinical threshold during the second wave (36,5% vs. 31,1%). As in the first wave, most of our sample fell onto the resilient trajectory (67.22%). We adapted the name of the remaining trajectories to better suit their evolution: rapid recovery (15.76%), slow recovery (9.66%), and delayed (7.37%).

Conclusion: Approximately two-thirds of the HCW did not manifest significant distress. For those who did, the distress was transient. We observed a trend of positive adaptability among HCW, considering that the proportion of HCW experiencing psychological distress exceeding clinical threshold remained lower than during the first wave. Our data highlight the dynamic nature of psychological distress. To be able to detect psychological distress as it arises, HCW should use self-monitoring as an essential tool. This vigilance would allow institutions to offer timely support and resources for those experiencing psychological distress.

Keywords

COVID-19, health-care workers, psychological distress, anxiety, depression

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Introduction

A previous study looked at the evolution of psychological distress in health care workers (HCW) during and after the first wave of COVID-19¹. Four different trajectories were identified: recovered (15.88%), resilient (64.93%), subchronic (7.24%), and delayed (8.04%). These results showed that, for most participants, the psychological distress exceeding clinical threshold was transient (2 to 4 weeks). For the delayed group, post-traumatic stress, anxiety, and depression were above clinical threshold at the end of data collection, which prevented us from evaluating the transient nature of the distress. The objective of this study was to extend these results to the second wave of the pandemic by combining the first and second wave of COVID-19 using latent class analysis.

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Methods

Data of this prospective cohort study was collected through a mobile application during the first and the second wave of COVID-19 in the province of Quebec, Canada, between May 8, 2020, and January 24, 2021. The research team adapted the Ethica app, by integrating our three main questionnaires and others relevant questions. Ethica is being used in a variety of research projects worldwide (North America, Europe, and Australia), using both subjective (survey) and objective data (via smartphone sensors²).

Participants were asked to fill several questionnaires through the mobile application on a weekly basis. Data collection was anonymous, confidential, and on a voluntary basis. The research ethics board of the CRCHUM approved the research project. Written consent of every participant was obtained before their participation. This study follows the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) reporting guidelines³. The ecological momentary assessment research design and latent class analysis are replications of the first paper by Dufour et al¹, which serve as a reference for more details.

A total of 787 HCW from eight health care centers in Quebec, Canada, participated in this prospective cohort study. The number of respondents varied each week; not all participants answered the questionnaire each week. Figure 1 shows the number of participants who completed our questionnaires weekly. Clinical settings' recruitment took place gradually and for this reason, a large influx of new participants (72.4%) occurred after September 4 (end of the data collection period for the first article). We ran extra analysis to ensure that it was statistically appropriate to use all participants to generate the new trajectories, even if more than a half of the sample started the study at midpoint. We applied the same

principles as in accelerated longitudinal cohort studies⁴, and we treated these two groups of HCW as two cohorts to demonstrate their similarities on sociodemographic and main variables. We therefore created 2 cohorts (1: HCW who participated before September 4, 2020 and 2: those who started their participation after September 4, 2020). We then conducted t-tests to assess whether these two cohorts were similar in terms of age, years of experience, and scores on our two main scales: anxiety and depression. All t-tests reported non-significant results ($P > .05$), except the years of experience. Although the difference is, in our opinion, not clinically significant (11.95 years of experience in cohort 1 vs. 13.88 in cohort 2), we went further to see if this variable was significant in our latent class model, and it was not. This result means that the number of years of experience did not influence the membership in a trajectory. We still added this variable as a control variable in our model, to be perfectly sure that we were controlling for any significant differences between our cohorts. Missing data was treated the same way as the previous paper¹.

Psychological distress was measured with the General Anxiety Disorder-7 (GAD-7; cut-off score of 10⁵) and the Patient Health Questionnaire (PHQ-9; cut-off score of 11⁶). A programming issue with the mobile application made it impossible to use the data collected on post-traumatic stress for this follow-up.

Results

Figure 2 (upper panel) presents descriptive data regarding the percentage of participants exceeding the clinical cut-offs of our two measures between May 8, 2020, to January 24, 2021. The graph shows that a somewhat lower proportion of HCW exceeded clinical threshold during the second wave

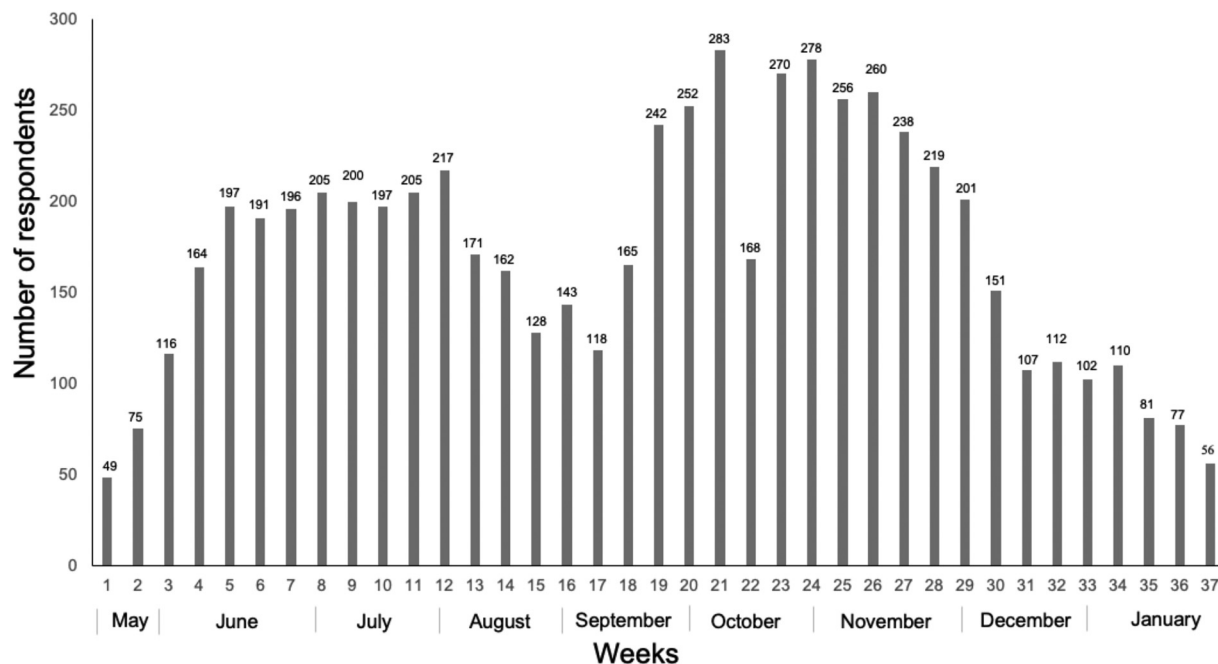


Figure 1. Number of participants who completed questionnaires each week.

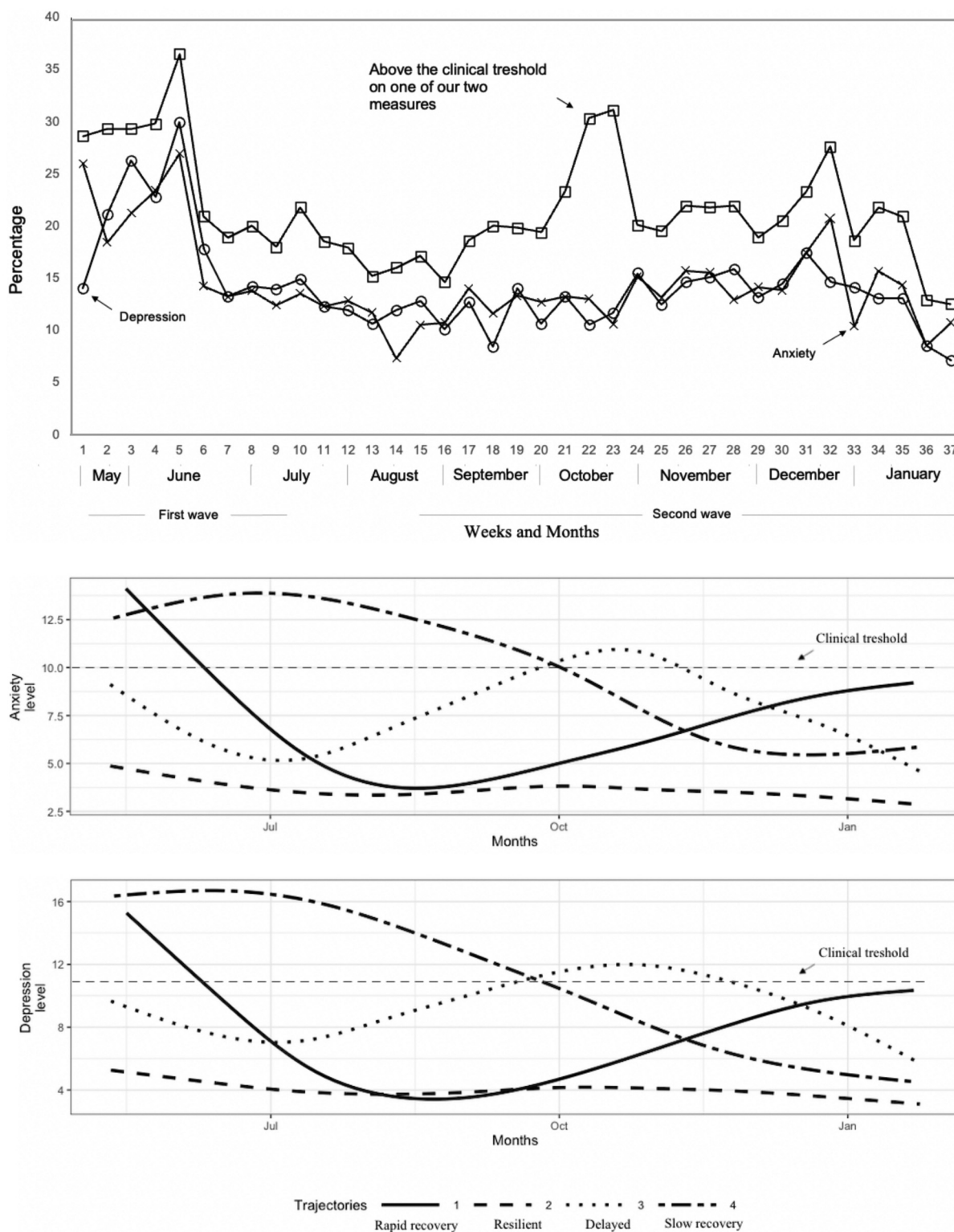


Figure 2. Percentage of participant exceeding clinical threshold (upper panel), mean predicted scores of anxiety and depression symptoms by trajectories (middle and lower panels).

(36.5% vs. 31.1%). Based on our results, we chose to modify the trajectories' names to better represent their evolution. Most participants fell under the resilient trajectory (529 participants,

67.22%). The rapid recovery trajectory comprised 124 participants (15.76%), the slow recovery included 76 participants (9.66%) and the delayed class 58 participants (7.37%). As in

the first wave, the resilient group stayed under clinical threshold for the duration of the data collection. The rapid recovery class, which started the first wave with clinical symptoms of psychological distress and ended «recovered», began to worsen progressively during the second wave but stayed under clinical threshold of our two measures. The slow recovery class stayed above clinical threshold from May to October 2020, and then gradually decreased to subclinical levels during the second wave. Anxiety and depression symptoms reached their lowest levels in December 2020. The delayed class finished the first wave on an upward trend that continued until November 2020, when these participants reached clinical level of psychological distress. Subsequently, scores gradually decreased to stay under clinical threshold for the remainder of the assessment period.

Discussion

Although we are facing a new phenomenon in which the potential for trauma due to COVID-19 is recurrent, our results revealed that the proportion of workers in the different trajectories remained similar and are still consistent with trajectories found in people who experienced traumatic events⁷. Our results demonstrate the dynamic aspect of psychological distress by showing that, for all HCW who presented symptoms of psychological distress at one point during the first two waves of COVID-19, phases of clinical distress were followed by phases of recovery for all trajectories. These results go along with the main conclusions of our first paper, which were: (1) approximately two-thirds of the HCW were resilient and did not manifest significant distress, and (2) for those who expressed clinical psychological distress at one moment or another, the distress was transient. In the light of these results, we add one hypothesis: we observed a trend of positive adaptability among HCW, considering that the proportion of HCW experiencing psychological distress exceeding clinical threshold remained somewhat lower than during the first wave.

Application to Professional Practice

Our data highlight the dynamic and fluctuating nature of psychological distress. To be able to detect psychological distress as it arises, HCW should use self-monitoring as an essential tool. This continuous vigilance would allow institutions to offer timely support, guidance, and resources for those experiencing psychological distress reactions.

in Summary

- Approximately two-thirds of the HCW of our sample were resilient and did not exhibit significant distress during the first and second waves of COVID-19.

- For those who expressed clinical psychological distress at one point or another, the distress was transient.
- We observed a trend of positive adaptability among HCW between the first and second waves of COVID-19.
- Our data highlight the dynamic and fluctuating nature of psychological distress.

Declaration of Conflicting Interests

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