

Article

Not peer-reviewed version

Physician Burnout as Reflected by Patients – the Effect of COVID-19 on Patients' Perspective

Orna Tal *, Arnon Ravid, Shlomit Bargil, Zaklin Epel, Mira Avdayev, Michal Bitan

Posted Date: 20 November 2023

doi: 10.20944/preprints202311.1223.v1

Keywords: Physician burnout; patient's perspective; COVID-19 effect; trends



Preprints.org is a free multidiscipline platform providing preprint service that is dedicated to making early versions of research outputs permanently available and citable. Preprints posted at Preprints.org appear in Web of Science, Crossref, Google Scholar, Scilit, Europe PMC.

Copyright: This is an open access article distributed under the Creative Commons Attribution License which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Disclaimer/Publisher's Note: The statements, opinions, and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions, or products referred to in the content.

Article

Physician Burnout as Reflected by Patients—The Effect of COVID-19 on Patients' Perspective

Orna Tal 1,2,3,*, Arnon Ravid 1, Shlomit Bargil 1, Jaklin Epel 1, Mira Avdayev 1 and Michal Bitan 1,4

- ¹ Department of Management, Academic College of Israel, Ramat Gan Israel
- ² Shamir Medical Center Zrifin, Israel
- ³ Israeli Center for Emerging Technologies, ICET Director
- ⁴ School of Computer Science, The College of Management, Rishon LeZion, Israel
- * Correspondence: author at ornatal10@gmail.com

Abstract: Physicians exposed to a risky environment experience burnout, which negatively impacts patient care, stress decreases compassion, harms patient-doctor communication and may jeopardize patient safety. Patients are directly exposed to their physicians' overload and can sense their exhaustion, making them a sensitive seismograph of burnout. This study aimed to compare patients' standpoints towards physicians' burnout before and during the COVID-19 pandemic, characterizing patients' perceptions according to the 4 components of burnout. Two cross-sectional surveys (February-March 2018 and 2021) were conducted. 314 responders, 133 in 2018 and 181 in 2021. Physician burnout, accountability, empathy towards doctors ("mirror reflection") and the expected patient-doctor partnership were measured. Patients' perception of physicians' burnout was significantly associated with urban community, education and religiosity. Perceived accountability was associated with female gender and education. Empathy was associated with employment and gender. Patients described physicians' burnout as significantly higher prior to the COVID-19 pandemic. Physicians' accountability, empathy for doctors, and perceived partnership were more intense in 2021, implying that the emergency emphasized the physician's role and the patient-doctor relationship. Global disasters may have an unexpected positive effect on how patients understand the role and duty of physicians and the health system.

Keywords: physician burnout; patient's perspective; COVID-19 effect; trends

1. Introduction

Physicians experience high rates of burnout, which may negatively impact patient care [1]. Many factors influence the level of burnout apart from a stressful environment and overload per se, such as age, medical department, profession and personal resilience. The clinical implications of burnout include psychological stress that may accelerate suicidal risk [2], as well as other physical symptoms [3], alongside social impairment, evoking violent and anti-social behavior, resulting in a negative response to other people, such as colleagues and patients, in a cynical and isolated way [4,5]. Burnout is explained by both 'compassion fatigue' and 'emotional dissonance' (that is a gap between felt and expressed emotion, with reduced emotional regulation), which have even been demonstrated in brain activity imaging [6]. Burnout was found to be associated with reduced professional fulfillment and lower confidence in taking action to address unprofessionalism [7]. Moreover, burnout may be reduced in a trustful environment. Thus, medical managers, policy makers and opinion leaders are encouraged to build and maintain trust between patients and care providers [8].

As mentioned, individual characteristics may affect burnout: age over 60 years compared to age ≤ 40 years, was independently associated with lower burnout [1]. Gender plays a role in sustaining resilience and patient-related burnout was found to be higher in males compared to females [9]. Professional features are also influential: staff from overloaded and stressful medical departments (such as the Emergency Room (ER) and Intensive Care Unit (ICU)) often demonstrate a

higher level of burnout [4]. During residency, residents often show low resilience [10] due to fatigue or work pressure [10] due to fatigue or work pressure [11].

Physician burnout may jeopardize patient care. Elimination of this risk must be viewed as a fundamental health care policy goal across the globe. Healthcare organizations are encouraged to invest efforts in order to improve physician wellness, particularly for early-career physicians [12]. Lafreniere observed that patients perceived residents who reported higher levels of depersonalization, meaning reduced ability to show empathy during their patient care encounters [13].

Physician burnout is rarely measured in a prospective or longitudinal manner. Monrouxe et al. described a longitudinal 1-year cohort designed to assess the transition of final-year medical students to residents [9].

Our assumption were that continuous stress among medical teams would gradually increase burnout and reduce compassion, especially when additional threats accumulate during the pandemic. In addition, patients can sense this fatigue. Thus, even if the caregiver is not aware of the increasing manifestations of exposure to a stressful lifestyle, patient inquiries can be a sensitive seismograph of impending burnout [5]. We aimed to analyze the impact of burnout components beyond the influence of the pandemic as a major event. Thus we can identify the most important elements for effective education intervention to benefit patient- doctor relationship.

2. Materials & Methods

To assess the existence and level of burnout, a questionnaire based on the original burnout survey [5] was composed. We also used tools based on former Israeli experience [14] in this field. Our questionnaire was comprised of 4 main sections in order to capture the patients' point of view: (1) dimensions and level of physician's burnout (perceived physician's burnout); (2) the patient's own feeling towards the exhausted physicians (mirror reflection of empathy), embedding the perceived physician's compassion and sensitivity to patients' wishes; (3) the perceived partnership expected between the participant and his/her doctor in decision-making (patient-doctor dialogue), and (4) demographic details.

To compare burnout over time we conducted two-point surveys during February-March 2018 and February-March 2021.

Our population was a convenience sample of patients from the ambulatory care clinics in five ambulatory care clinics nationwide. We preferred an anonymous respond to enable open and unbiased responses, instead of a cohort of a closed group of participants. Therefore, we had two different groups of responders who participated in the early and late phases of the survey. We applied weighting techniques to age groups in the later sample in order to correct for the fact that the population in the later sample was older on average [15].

After weighting, we present means, standard deviations, or numbers (N's), along with percentages of possible explanatory variables for the two samples. We compare the samples using the Chi-square test.

We used a two-sample weighted t-test (Welch) to compare the characteristics of physicians' role model over time.

A univariable and multivariable linear regression was used to examine the influence of gender, age, religiosity, educational level, type of social community, number of children, employment status and the period of the survey, on the 4 components of physician's 'professional role' [16] model as described by patients. This included: burnout, accountability, 'mirror reflection' of empathy (sensitivity or awareness of patient fears/concerns) and partnership (a sense of meaningful dialogue). We present β with 95% confidence intervals (CIs) and p-values. As part of our analysis of burnout components, we specifically examined all the other components of the professional role: empathy, a sense of partnership, and accountability.

The analyses were conducted using the statistical program R 4.1.0.

3. Results

A total of 314 respondents responded and their details were analyzed. 133 responders during 2018 (prior to COVID-19 pandemic) and 181 in 2021 (following a whole year of COVID-19 pandemic).

Most of the responders were females (65%), employed (67%), living in an urban area (85%); 59% were secular, 14% declared that they were orthodox (22% were light orthodox and 4.6% very orthodox). The responders' mean age was 48 years and they had on average 2.26 children (Table 1).

When comparing the characteristics of the perceived physician's role model over time, perceived burnout was significantly higher in the 2018 survey prior to the COVID-19 pandemic, compared to the survey during the pandemic (4.23, 3.79 respectively, p = 0.0285), while accountability (5.33, 6.93, p<0.001), the mirror reflection of empathy (5.33, 6.93, p<0.001) and perceived partnership (6.55, 8.64, p<0.001) were significantly higher during the COVID-19 pandemic compared to the early 2018 survey (Table 2).

Following these findings each component was separately analyzed to better understand its relative contribution to the patient's understanding of the physician's resilience:

Burnout: Table 3 presents the univariable and multivariable analyses.

Univariable analyses of patients' responses to burnout showed that the participant's age, number of children, education, employment, religiosity, social community type, time (early/late) of survey, as well as the perceived doctor's accountability, mirror reflection of doctor's empathy and perceived partnership are all parameters that were associated with the perceived physician's burnout. We identified that younger, academic, employed, urban, secular participants, who declared lower responsibility for healthy behavior, lower desire for patient-doctor partnership in health decisions and reported a lower "mirror reflection" of doctor's empathy during the early (2018) survey (prior to COVID-19 pandemic), believed that their physicians had higher levels of burnout (Table 3). The multivariable model (Table 3) confirms our findings for most of the univariable analyses variables (adjusted R-squared = 0.3119). Burnout reflection remained significantly associated with the responder's (the patient) social community type (p = 0.003), as well as the responder's education (p = 0.003) 0.002), religiosity (p < 0.001), responsibility for healthy behavior (p = 0.049), the perceived physician's empathy (p < 0.001) and sense of partnership (p < 0.001). Further analysis of the perceived physician's burnout revealed differences among patient sub-populations: secular patients felt that their physicians showed more burnout compared to ultra-orthodox orthodox and light-orthodox (β = -1.21, -0.44, -1.25 respectively). Participants from urban areas reported more physician burnout compared to rural patients (β = -0.81). Patients with higher levels of education (academic participants) reported higher perceived physician burnout compared to non-academic participants (β = -0.7). Age, number of children, time and employment status were no longer significant. This is most likely due to a high degree of collinearity between these variables and the fact that all these variables were significantly associated with religiosity. We assume, that the analysis was also influenced by the participants' sample: there were more light orthodox people in the early (2018) sample and more orthodox in the late (2021) sample (p = 0.003). The explanation is cultural and compatible with our patient population; in orthodox participants the number of children increases with the level of religiosity (p < 0.001) and with age (p<0.001), and the rate of unemployment increases with age (p < 0.001).

Accountability: The univariable model revealed responders who were older males and less educated, live in rural areas, have more children and are unemployed, participating in the late (2021) survey during the COVID-19 pandemic, think that the health system and the physicians are highly accountable (Table 4). The multivariable model supported some of the findings in the univariable analysis (adjusted R-squared = 0.353), gender (p < 0.001), education (p = 0.002), and time of the survey (p < 0.001) remain statistically significant. Male patients reported higher perceived doctor accountability compared to females (β = 1.15). Non-academic participants reported higher perceived doctor's accountability as opposed to academic participants (β = 0.96). As of late 2021, survey participants believed their doctors were more accountable than in early 2018 (β = -2.83) (Table 4).

Mirror reflection of empathy was significantly correlated with patients' age, number of children, religiosity, employment status and the timepoint of the survey, according to the univariable model. The multivariable model confirmed some of the univariable analyses findings (adjusted R-squared = 0.203): patients' employment status (p = 0.017) and survey timepoint (p < 0.001) still remained

statistically significant, however gender became statistically significant too (p = 0.02). Those who lost their jobs during the pandemic, employed, as well as retired participants reported feeling more empathic than those who were employed or retired during the pandemic (β = -0.18, -0.9 respectively). In the late (2021) survey, during the COVID-19 pandemic participants indicated that their physicians expressed higher levels of empathy than during the early (2018) survey (β = -1.54). Male participants reported that their physicians expressed higher empathy than female participants (β = -0.57) (Table 4).

Perceived patient-doctor partnership: According to the univariable model, perceived patient-doctor partnership was significantly associated with patients' age, number of children, religiosity, and survey time. However, in the multivariable model (adjusted R-squared = 0.186) only the survey timepoint remained statistically significant (p < 0.001). In the early (2018) survey, prior to the COVID-19 pandemic, people reported lower perceptions of partnership compared to participants in the late survey (during the pandemic) (β = -1.72) (Table 4).

Table 1. Distribution of demographic characteristics N (%) or Mean (SD) and p-value for chi-squared test.

Characteristic	Overall, N = 314 *	after, N = 181 *	before, N = 133 *	p-value †
Gender	309	181	128	0.6
Female	200 (65%)	120 (66%)	80 (62%)	
Male	109 (35%)	61 (34%)	48 (38%)	
Religiosity	310	181	129	0.065
Non-orthodox (secular)	183 (59%)	110 (61%)	73 (57%)	
Ultra-orthodox	14 (4.6%)	7 (3.9%)	7 (5.4%)	
Orthodox	44 (14%)	34 (19%)	10 (7.8%)	
Light orthodox	69 (22%)	30 (16%)	39 (30%)	
Social Community Type	299	181	118	>0.9
Urban	253 (85%)	153 (84%)	100 (85%)	
Rural	46 (15%)	28 (16%)	18 (15%)	
Education	314	181	133	0.4
Academic	187 (59%)	113 (62%)	74 (56%)	
Non-academic	127 (41%)	68 (38%)	59 (44%)	
Number of children	2.26 (1.71)	2.45 (1.72)	2.00 (1.68)	0.10
	0-8 [313]	0-8 [181]	0-7 [132]	0.10
Age	48 (17)	48 (17)	47 (17)	0.7
	19-90 [312]	19-90 [181]	19-85 [131]	0.7
Employment status	310	181	129	0.2
Unemployed	53 (17%)	34 (19%)	19 (15%)	
Retired	48 (16%)	22 (12%)	26 (20%)	
Employed	209 (67%)	125 (69%)	84 (65%)	

^{*} n (%); Mean (SD) range [n]. † chi-squared test.

Table 2. Characteristics of Physician's Role Model over time*: burnout, accountability, mirror reflection of empathy and perceived partnership.

Characteristic	Overall	1 4			
Characteristic	N = 305 +	N = 172 †	N = 133 †	p-value ‡	
Burnout	3.97 (1.82)	3.78 (1.81)	4.23 (1.81)	0.029	
Accountability	6.31 (2.71)	7.41 (2.49)	4.67 (2.13)	< 0.001	
Mirror Reflection of Empathy	6.28 (2.05)	6.93 (2.07)	5.33 (1.63)	< 0.001	
Perceived Partnership	7.80 (2.42)	8.64 (1.66)	6.55 (2.78)	< 0.001	

^{* 2018} Early survey (prior to), 2021 Late survey (during) Covid 19 pandemic †Mean (SD) ‡ Two Sample Weighted T-Test (Welch).

		Mean (SD) Univariable				
Dependent: burnout			95% CI	P	95% CI	P
Gender	Female	3.7 (1.7)		0.660		0.869
	Male	3.5 (1.8)	0.10 (-0.33,0.53)		-0.03 (-0.44,0.37)	
Religiosity	Non-orthodox	3.8 (1.8)		0.002		< 0.001
	Ultra-orthodox	3.4 (1.5)	-1.03 (-2.00,-0.06)		-1.25 (-2.26,-0.23)	_
	Orthodox	3.1 (1.5)	-0.73 (-1.32,-0.14)		-0.44 (-1.01,0.13)	
	Light orthodox	3.3 (1.6)	-0.77 (-1.26,-0.27)		-1.21 (-1.68,-0.74)	
Type of social community	Urban	2.9 (1.4)		0.005		0.003
	Rural	3.7 (1.8)	-0.81 (-1.39,-0.24)		-0.83 (-1.38,-0.28)	_
Education	Academic	4.0 (1.8)		< 0.001		0.002
	Non-academic	3.2 (1.6)	-0.70 (-1.11,-0.30)		-0.66 (-1.08,-0.24)	
Number of children		3.6 (1.8)	-0.16 (-0.28,-0.05)	0.006	0.14 (-0.01,0.29)	0.062
Age		3.6 (1.8)	-0.02 (-0.03,-0.01)	0.004	-0.01 (-0.03,0.00)	0.147
Employment status	Unemployed	3.2 (1.8)		0.002		0.225
	Retired	2.9 (1.3)	-0.38 (-1.08,0.31)		-0.65 (-1.41,0.10)	
	Employed	4.2 (1.8)	0.55 (0.01,1.10)		-0.16 (-0.71,0.40)	
Survey time schedule	Late 2021	3.1 (1.6)		0.029		0.165
	Early 2018	4.2 (1.8)	0.45 (0.05,0.86)		0.34 (-0.14,0.81)	
Perceived doctor's accountability	·	3.6 (1.8)	-0.12 (-0.19,-0.04)	0.002	0.10 (0.00,0.19)	0.049
Mirror effect of empathy	·	3.6 (1.8)	-0.31 (-0.41,-0.22)	< 0.001	-0.31 (-0.42,-0.21)	< 0.001
Sense of partnership		3.6 (1.8)	-0.25 (-0.33,-0.17)	< 0.001	-0.20 (-0.30,-0.10)	< 0.001

Table 4. linear regression for perceived doctor's accountability, mirror effect of empathy and sense of partnership.

Parameter		Perceived doctor	's Acco	ountability		Mirror effect of e	mpath	ny		Sense of partners	ship		
		Univariable		Multivariable		Univariable		Multivariable		Univariable		Multivariable	
		95% CI	P	95% CI	P	95% CI	P	95% CI	P	95% CI	P	95% CI	P
Gender	Female		< 0.001		< 0.00	1	0.13		0.02		0.11		0.13
	Male	1.09 (0.45, 1.72)		1.15 (0.59, 1.71)		0.38 (-0.11, 0.88)		0.57 (0.09, 1.05)		-0.45 (-1.02, 0.11)		-0.37 (-0.89, 0.15)	
	Non-orthodox		0.49		0.10		0.03		0.35		< 0.001		< 0.001
D.11.1.10	Ultra-orthodox	-0.82 (-2.30, 0.66)		-1.20 (-2.64, 0.25)		0.65 (-0.46, 1.76)		0.18 (-1.05, 1.42)		0.21 (-1.07, 1.49)		0.48 (-0.86, 1.81)	
Religiosity	Orthodox	-0.43 (-1.35, 0.49)		-0.71 (-1.49, 0.07)		0.99 (0.30, 1.69)		0.63 (-0.05, 1.30)		1.20 (0.40, 2.00)		0.82 (0.09, 1.56)	
	Light orthodox	-0.42 (-1.18, 0.35)		0.20 (-0.48,0.88)		-0.05 (-0.62, 0.52)		0.14 (-0.44, 0.72)		-0.71 (-1.37, -0.05)		-0.22 (-0.84, 0.41)	
Type of social	Urban		0.02		0.06		0.18		0.18		0.26		0.41
community	Rural	1.09 (0.20, 1.99)		0.74 (-0.03, 1.51)		-0.47 (-1.15, 0.21)		-0.45 (-1.11, 0.21)		0.43 (-0.32, 1.17)		0.30 (-0.41, 1.01)	
P.L C	Academic		0.03		0.002		0.90		0.55		0.79		0.37
Education	Non-academic	ic 0.70 (0.08, 1.31) 0.	0.96 (0.37, 1.55)		0.03 (-0.44, 0.50)		-0.15 (-0.66, 0.35)		0.07 (-0.48, 0.63)	(-0.48, 0.63) 0.25 (-0.30, 0.79			
Number of children		0.37 (0.19, 0.54)	< 0.001	0.15 (-0.06, 0.37)	0.16	0.30 (0.17, 0.43)	< 0.00	10.15 (-0.03, 0.33)	0.11	0.28 (0.12, 0.44)	< 0.001	0.06 (-0.14, 0.26)	0.55
Age		0.03 (0.02, 0.05)	< 0.001	0.01 (-0.01, 0.04)	0.37	0.02 (0.01, 0.03)	0.003	0.00 (-0.02, 0.02)	0.73	0.02 (0.00,0.04)	0.02	0.01 (-0.02, 0.03)	0.62
Employment status	Unemployed		0.27		0.68		0.005		0.02		0.11		0.14
	Retired	-0.04 (-1.11, 1.04)		-0.14 (-1.23, 0.95)		-0.05 (-0.87, 0.76)		-0.18 (-1.10, 0.74)		0.25 (-0.71, 1.20)		0.58 (-0.42, 1.57)	
	Employed	-0.56 (-1.38, 0.26)		-0.34 (-1.13, 0.44)		-0.85 (-1.47, -0.23)		-0.90 (-1.57, -0.23)		-0.49 (-1.22, 0.23)		-0.29 (-1.02, 0.43)	
Survey timenoint	Late 2021		< 0.001		< 0.00	1	< 0.00	1	< 0.001		< 0.001		< 0.001
	Early 2018	-2.74 (-3.28, -2.20)		-2.83 (-3.41, -2.26))	-1.60 (-2.04, -1.16)		-1.54 (-2.03, -1.05)		-2.10 (-2.60, -1.59)		-1.72 (-2.25, -1.19))

4. Discussion

Workers' burnout is usually evaluated through self-reporting, as described by Maslach [17]. This is naturally a subjective score, yet comparable across nations and professions, thus considered as a standard measure, and adopted worldwide. Burnout affects more than just the caregiver, it also has a profound effect on the patient; not only by reduced attention, lack of empathy, and unsatisfying communication, but also by wrong decisions and by medical errors. Hence, we believe that looking at physician burnout through the lens of the patient can provide a unique insight into the effectiveness and professionalism of physicians. Moreover, as external forces may influence physicians' resilience, the patient can be the first to feel and reflect even delicate changes in a physician's behavior. This will enable him to detect early signs of professional exhaustion. To be more accurate we used a combination of professional behavioral components that are associated with 'best practice' [18]: accountability, empathy and partnership. Those characters should be preserved, such as in a Canadian simulation training [19]:

The Coronavirus disease 2019 (COVID-19) health crisis had a notable impact on healthcare professionals' attitudes: In Spain, doctors showed higher compassion fatigue and burnout during the pandemic. Those findings were emphasized in professionals working in specific COVID-19 units [20], and highlighted a substantial burnout prevalence among ICU and Emergency Department (ED) healthcare workers [21]. In German outpatient caregivers changes of behavior secondary to the COVID-19 pandemic appeared, with negative effects on maintaining healthy behavior, such as impaired eating, alcohol drinking, increased smoking and decreased physical activity[22]. In Canada, the prevalence of burnout among hospital physicians was 68% and higher in physicians who reported that COVID-19 affected their practice [23]. In Taiwan 40.3% of hospital workers reported burnout, 78.1% reported severe anxiety, although only 37.3% cared for patients with COVID-19 [24]. Other researchers actually refer to the "cost of caring" as the occupational hazard of working in critical care settings [25]. Interestingly, a survey among physicians and nurses in Wuhan, China during the COVID-19 epidemic described a significantly lower frequency of burnout in professionals working on the frontline compared with teams in usual wards [26]. They assume that the lower-level of burnout among frontline workers, may be due to their focus on achieving positive outcomes for patients [26]. This can also be explained by the better preparedness of the group, meeting their expectations of coping with morbidity and mortality.

As for the public, trust and faith may play a role in resilience: in China, the majority of the residents (97%), had confidence that China could win the battle against COVID-19 [27].

We assume that during the first wave of the pandemic, there was a high level of stress among the patients, as well as in the general population. At the same time, however, patients expect medical teams coping with the pandemic to suffer high levels of burnout; therefore, during that phase, participants rated doctors' burnout even lower than prior to the pandemic.

The second component—accountability—was scored higher during the Covid-19 pandemic compared to the early 2018 survey. The perception of emergencies and the immediate threat might be explained by the fact that they focus the attention of doctors and the entire health system on the benefit and survival of the patient. This emphasizes the importance of lifesaving healthcare services provided by medical staff. We believe uncertainty, helplessness and fear of dying play a role in trusting the physicians, in general; correlation between knowledge, attitude, and practice (KAP) and the level of fear towards COVID-19 and socio-demographic factors among the general population uncovered differences when measured in 8 different countries over the 5 continents [28].

Do personal characteristics influence the patient's perspective? We found that a higher level of perceived physicians' burnout was reported by academic participants. This was most probably due to greater knowledge and insight of the disease severity, potential complications and future implications. Higher perceived physician burnout was also reported by urban residents (compared to participants living in rural areas), and we assume the dynamic lifestyle in the city contributes to stress. Burnout is described in developing countries (sub-Saharan Africa) where all healthcare

providers showed high levels of burnout, amongst nurses in particular [29], however since most nurses are female, burnout can be related either to their job or to gender.

Secular people (as opposed to orthodox and ultra-orthodox) also report higher perceived physicians' burnout. The explanation may be that non-orthodox participants express more anxiety concerning the disease, while religiosity correlates with higher levels of faith and more trust, reducing stress. We did not find similar reports in the literature, however Maslach pointed out the importance of social relationships or settings in burnout [30].

In our study, male patients (as opposed to female) expressed higher perceived physicians' burnout and lower physicians' accountability. Others also described that women present lower depersonalization [31]. This reduced perceived accountability may cause reduced satisfaction from male doctors' ability to handle care in times of work overload, impaired patient- doctor communication and even violence against medical staff. In a review from Middle East countries, gender differences in burnout are not always consistent [29], so it is still indecisive whether gender differences are related to individual (rather than gender-related) resilience. It was already reported that uneducated, minorities, immigrants and rural area citizens report higher trust in their physicians. This could also explain a higher perceived accountability feeling in this subgroup.

Physician's empathy scores reflect a delicate measure of communication: Unemployed participants reported higher physician's empathy, possibly from their sense of empathy with the exhausted doctors during the pandemic, whereas employed participants had higher expectations, therefore reported lower doctor's empathy scores. As part of the late 2021 survey, participants reported that their physician showed higher levels of empathy. We believe that during the pandemic, patients expected doctors to be more exhausted and less communicative, thus they rated their empathy higher. Finally, female participants reported that their physician expressed less empathy, perhaps because women have higher expectations of effective personal communication in general.

A sense of partnership is also a marker of effective communication. Participants in the late survey expressed a higher perception of partnership that may stem from the higher involvement in health issues in general during the pandemic.

5. Conclusions

Although identifying physician burnout is a crucial managerial step for wise intervention planning, it remains an elusive challenge. Patients are exposed to physicians' stress, overload and risky atmosphere, and their influence on professionals' quality components: empathy, accountability, and shared decisions, thus patients may produce a sensitive receptive monitoring of the current setting [13]. This can be used to induce better communication, reduce friction, evoke a framework of partnership, and contribute to the physician's wellbeing in this stressful environment. Unexpectedly, the Covid-19 pandemic did not increase the sense of burnout, due to a change in personal risk perception and the insight of trust. We witnessed how global major disasters may have an unexpected positive effect on how patients capture the role and the duty of the physicians and even the entire health system.

6. Practice Implications

Continuous or repetitive patient surveys may offer medical managers and healthcare providers knowledge on how to plan effective interventions for the benefit of physicians employed in their organization. This will improve not only the physicians' quality of life and professionalism, but also enhance the satisfaction and well-being of their clients.

Funding: This research received no external funding.

Data Availability Statement: Data are available upon reasonable request. Please contact the corresponding author for access to data or R codes used. ornatal10@gmail.com, Shamir Medical Center, Zrifin, 3070100 Israel.

Ethical approval: 0019-19-COM1 from Clalit Health Services Helsinki board.

Conflicts of Interest: The authors declare no conflict of interest.

References

- Wang C, Grassau P, Lawlor PG, Webber C, Bush SH, Gagnon B, Kabir M, Spilg EG: Burnout and resilience among Canadian palliative care physicians. BMC palliative care 2020, 19(1):1-14.
- 2. Pompili M, Innamorati M, Narciso V, Kotzalidis G, Dominici G, Talamo A, Girardi P, Lester D, Tatarelli R: **Burnout, hopelessness and suicide risk in medical doctors**. *La Clinica terapeutica* 2010, **161**(6):511-514.
- 3. Melamed S, Shirom A, Toker S, Berliner S, Shapira I: **Burnout and risk of cardiovascular disease: evidence, possible causal paths, and promising research directions**. *Psychological bulletin* 2006, **132**(3):327.
- 4. Rodrigues H, Cobucci R, Oliveira A, Cabral JV, Medeiros L, Gurgel K, Souza T, Gonçalves AK: **Burnout** syndrome among medical residents: A systematic review and meta-analysis. *PloS one* 2018, 13(11):e0206840.
- 5. Maslach C, Jackson SE, Leiter MP: Maslach burnout inventory: Scarecrow Education; 1997.
- 6. Tei S, Becker C, Kawada R, Fujino J, Jankowski KF, Sugihara G, Murai T, Takahashi H: Can we predict burnout severity from empathy-related brain activity? *Translational psychiatry* 2014, 4(6):e393-e393.
- Burns KE, Pattani R, Lorens E, Straus SE, Hawker GA: The impact of organizational culture on professional fulfillment and burnout in an academic department of medicine. PloS one 2021, 16(6):e0252778.
- 8. Tur-Sinai A, Barnea R, Tal O: Analyzing patient trust through the lens of hospitals managers—The other side of the coin. *PloS one* 2021, **16**(4):e0250626.
- 9. Monrouxe LV, Bullock A, Tseng H-M, Wells SE: Association of professional identity, gender, team understanding, anxiety and workplace learning alignment with burnout in junior doctors: a longitudinal cohort study. *BMJ open* 2017, 7(12):e017942.
- 10. Alahdab F, Halvorsen AJ, Mandrekar JN, Vaa BE, Montori VM, West CP, Murad MH, Beckman TJ: How do we assess resilience and grit among internal medicine residents at the Mayo Clinic? A longitudinal validity study including correlations with medical knowledge, professionalism and clinical performance. *BMJ open* 2020, 10(12):e040699.
- 11. Firth-Cozens J, Greenhalgh J: **Doctors' perceptions of the links between stress and lowered clinical care**. *Social science & medicine* 1997, **44**(7):1017-1022.
- 12. Sheen K, Slade P, Spiby H: An integrative review of the impact of indirect trauma exposure in health professionals and potential issues of salience for midwives. *Journal of advanced nursing* 2014, **70**(4):729-743.
- 13. Lafreniere JP, Rios R, Packer H, Ghazarian S, Wright SM, Levine RB: Burned out at the bedside: patient perceptions of physician burnout in an internal medicine resident continuity clinic. *Journal of general internal medicine* 2016, 31(2):203-208.
- 14. Shirom A, Melamed S, Toker S, Berliner S, Shapira I: **Burnout and health review: Current knowledge and future research directions**. *International review of industrial and organizational psychology* 2005, **20**(1):269-308.
- 15. Solon G, Haider SJ, Wooldridge JM: **What are we weighting for?** *Journal of Human resources* 2015, **50**(2):301-316.
- 16. Health NIo: US National Library of Medicine. 2004.
- 17. MASLACH C, Wilmar B: S., Michael P., L.(2001); "Job Burnout". Annual Review of Psychology, 52:397-422.
- 18. Phan HP, Ngu BH, Wang H-W, Shih J-H, Shi S-Y, Lin R-Y: **Achieving optimal best practice: an inquiry into its nature and characteristics**. *PloS one* 2019, **14**(4):e0215732.
- Pendharkar SR, Minty E, Shukalek CB, Kerr B, MacMullan P, Lail P, Cheema K, Alimohamed N, Allen T, Vlasschaert ME: Description of a Multi-faceted COVID-19 Pandemic Physician Workforce Plan at a Multi-site Academic Health System. Journal of general internal medicine 2021, 36(5):1310-1318.
- Ruiz-Fernández MD, Ramos-Pichardo JD, Ibáñez-Masero O, Cabrera-Troya J, Carmona-Rega MI, Ortega-Galán ÁM: Compassion fatigue, burnout, compassion satisfaction and perceived stress in healthcare professionals during the COVID-19 health crisis in Spain. *Journal of clinical nursing* 2020, 29(21-22):4321-4330.
- 21. Gualano MR, Sinigaglia T, Lo Moro G, Rousset S, Cremona A, Bert F, Siliquini R: **The burden of burnout** among healthcare professionals of intensive care units and emergency departments during the COVID-19 pandemic: a systematic review. *International journal of environmental research and public health* 2021, 18(15):8172.
- 22. Mojtahedzadeh N, Neumann FA, Rohwer E, Nienhaus A, Augustin M, Harth V, Zyriax B-C, Mache S: The Health Behaviour of German Outpatient Caregivers in Relation to the COVID-19 Pandemic: A Mixed-Methods Study. International journal of environmental research and public health 2021, 18(15):8213.
- 23. Khan N, Palepu A, Dodek P, Salmon A, Leitch H, Ruzycki S, Townson A, Lacaille D: Cross-sectional survey on physician burnout during the COVID-19 pandemic in Vancouver, Canada: the role of gender, ethnicity and sexual orientation. *BMJ open* 2021, **11**(5):e050380.
- 24. Sung C-W, Chen C-H, Fan C-Y, Chang J-H, Hung CC, Fu C-M, Wong LP, Huang EP-C, Lee TS-H: **Mental** health crisis in healthcare providers in the COVID-19 pandemic: a cross-sectional facility-based survey. *BMJ open* 2021, **11**(7):e052184.

10

- 26. Wu Y, Wang J, Luo C, Hu S, Lin X, Anderson AE, Bruera E, Yang X, Wei S, Qian Y: A comparison of burnout frequency among oncology physicians and nurses working on the frontline and usual wards during the COVID-19 epidemic in Wuhan, China. *Journal of pain and symptom management* 2020, **60**(1):e60-e65.
- 27. Zhong B-L, Luo W, Li H-M, Zhang Q-Q, Liu X-G, Li W-T, Li Y: **Knowledge**, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: a quick online cross-sectional survey. *International journal of biological sciences* 2020, 16(10):1745.
- 28. Ali M, Uddin Z, Banik PC, Hegazy FA, Zaman S, Ambia ASM, Siddique M, Bin K, Islam R, Khanam F: Knowledge, Attitude, Practice, and Fear of COVID-19: an Online-Based Cross-cultural Study. International Journal of Mental Health and Addiction 2021:1-16.
- 29. Chemali Z, Ezzeddine F, Gelaye B, Dossett M, Salameh J, Bizri M, Dubale B, Fricchione G: **Burnout among healthcare providers in the complex environment of the Middle East: a systematic review**. *BMC public health* 2019, **19**(1):1-21.
- 30. Maslach C, Leiter MP: Comprendiendo la experiencia de burnout: investigación reciente y sus implicaciones para la psiquiatría. Wo rld Psychiatry (Ed Esp) 2016, 14.
- 31. Rotenstein S: Lisa & Torre, Matthew & A Ramos, Marco & C Rosales, Rachael & Guille, Constance & Sen, Srijan & Mata, Douglas. (2018). Prevalence of Burnout Among Physicians: A Systematic Review. JAMA-Journal of the American Medical Association, 320:1131-1150.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.