

Financial Resilience Among Doctors in Training and the COVID-19 Pandemic

F. Kijowski¹, S. Moore², S. Iqbal¹, J. Cronin², L. Milewski¹, N. Woods², S. O'Reilly¹

1. Department of Medical Oncology Cork University Hospital.
2. Centre for Policy Studies, Cork University Business School, University College Cork, Cork, Ireland.

Abstract

Aim

Deaths of doctors during the COVID-19 pandemic prompted an assessment of financial resilience among doctors in training in Ireland

Methods

In 2020, a 27-item online survey of demographics, work practices and finances was circulated nationally. The results were assessed using multiple correspondence analysis to develop a financial resilience framework.

Results

161 responses were received. Only 26 (16.1%) respondents had income insurance, 10 (6.2%) had composed a will, and 41 (25.5%) had life insurance. 135 (83.9%) had not sought financial guidance and 153 (95%) were not aware of employer supports in event of death/disability. 105 (65.2%) would be considered financially fragile based on their median savings. Using a multiple correspondence analysis, 74 (46%) of the cohort were financially insecure. In the event of death 44/70 (62.9%) of those with dependents, felt that their dependents would not be looked after.

Conclusion

The majority of doctors in training lack both financial resilience and knowledge, nor are they aware of financial support structures. Financial management should be incorporated into medical education.

Introduction

In March 2020, rising cases of Coronavirus 2019 (COVID-19) led to a government mandated lockdown and an escalation of healthcare resources. Reports from countries already affected by the virus had documented a high occupational infection risk and mortality among healthcare workers ^{1,2,3}. The onset of lockdown was associated with much uncertainty regarding the outcomes and impacts of the illness ^{4,5,6} ; and prompted a review of financial resilience among doctors in training in Ireland.

Financial resilience refers to a household's capacity to absorb, respond, and adjust to a financial shock. It is a dynamic concept characterized by adaptability – the capacity to recover from the disturbance while also taking advantage of the benefits offered by the shock ^{7,8}. A household may be described as financially resilient when it exhibits *“the ability to access and draw on internal capabilities and appropriate, acceptable and accessible external resources and supports in times of financial adversity”* ⁸. Research examining the financial resilience of the household typically assesses income, savings, the ability to meet living expenses, the capacity to raise funds to cover unexpected expenses, and debt, against various household characteristics, such as household composition, tenure, employment status ^{9,10}.

The objective of this analysis was to examine the financial resilience of medical doctors at the frontline of the COVID-19 pandemic when occupation related death or disability was a potential reality. Our analysis considered the doctor's household as the unit of analysis, and illness or death due to COVID-19 as the disruption to income.

Methods

A 27-item online survey was devised to assess financial resilience and life planning among doctors in training. Ten questions were binary while the remaining questions were multiple choice (Table 1). Questions were grouped in three sections; the first 7 related to the demographic characteristics of the doctors the following 8 considered the impact of the pandemic on work practices, and the final 12 examined the financial security of the doctors and their immediate families. All responses were treated as categorical variables. The survey was circulated via hospital-based email systems to 1,000 doctors in training in the Republic of Ireland, between May and June 2020. A total of 161 replies were received.

Table 2: Questionnaire Assessments.

#	Variable	Question
1	<i>Age</i>	What is your age?
2	<i>gender</i>	What is your gender?
3	<i>county</i>	What county do you work in?
4	<i>grade</i>	What is your grade?
5	<i>irish</i>	Are you an Irish National?
6	<i>nationality</i>	If not, what is your nationality?
7	<i>income</i>	What is your yearly income?
8	<i>redeployed</i>	Have you been redeployed due to the COVID-19 outbreak?
9	<i>covid_contact</i>	If yes, has the redeployment included care of COVID-19 patients?
10	<i>Ppe</i>	Do you feel that you have all the necessary tools (PPE) to perform your task without the risk of becoming infected with COVID-19?
11	<i>worry</i>	How worried are you about contracting COVID-19?
12	<i>tested</i>	Have you been tested for COVID-19 or placed in isolation?
13	<i>rights</i>	Do you know your employment rights during this COVID-19 emergency?
14	<i>voiced</i>	Have you voiced your health and safety concern to your employer or line manager?
15	<i>response</i>	If yes; do you feel the appropriate response or action has been taken by your employer to accommodate your concerns?
16	<i>dependants</i>	Do you have dependents? A dependent is a person who relies on another, especially a family member, for financial support.
17	<i>dependents_home</i>	If yes, are your dependents living in:
18	<i>sole</i>	Are you your household's sole earner?
19	<i>inc_ins</i>	Do you have income insurance? Income insurance, or income protection, provides you with a replacement income if you cannot work as a result of an illness or injury for a certain period of time.
20	<i>savings</i>	Should you lose income, how long will your savings last?
21	<i>support</i>	Should you run into financial trouble; would you receive financial support from family or friends?
22	<i>Hse</i>	Do you know if there are any workplace policies through the HSE to ensure sufficient support to you and/or your families?
23	<i>debt</i>	Do you have a mortgage or any significant debt to pay?
24	<i>advice</i>	Have you sought advice on mortgage or life assurance during this pandemic?
25	<i>life_ins</i>	Do you have life insurance? Life insurance is a form of insurance in which a person makes regular payments to an insurance company, in return for a sum of money to be paid to them after a period of time, or to their family if they die.
26	<i>Will</i>	Have you composed a legally binding will?
27	<i>dep_ok</i>	Do you think your dependents will be financially looked after if you pass away?
28	<i>Resilience</i>	<i>resilience = sole + savings + support + income</i>

Data exploration was conducted using multiple correspondence analysis (MCA)¹¹. Variables that were both spatially related, in the analysis output, and theoretically related, based on suppositions about the characteristics of financial resilience, were aggregated to form a composite variable.

Multiple correspondence analysis was then used to explore the data to describe latent unobservable variable(s) through the analysis of observable categorical ^{12,13}. Guided by the literature ^{14,15}, 11 variables were analysed (**Table 2**).

Table 2: Variables included in the Multiple Correspondence Analysis.

Variable	Description
<i>income</i>	Level of income (4-point scale)
<i>savings</i>	Level of savings (4-point scale)
<i>support</i>	Presence of family support (2-point scale)
<i>sole</i>	Status as household sole earner (2-point scale)
<i>rights</i>	Awareness of employment rights (2-point scale)
<i>hse</i>	Awareness of HSE employment support schemes (2-point scale)
<i>will</i>	Presence of legally binding will (2-point scale)
<i>advice</i>	Has the respondent recently taken financial advice (2-point scale)
<i>debt</i>	Presence of mortgage or personal debt (2-point scale)
<i>inc_ins</i>	Presence of income insurance cover (2-point scale)
<i>life_ins</i>	Presence of life insurance cover (2-point scale)

The dimensions suggested by the analysis reveal a demarcation along the lines of what might be termed financial wherewithal (level of *income* and *savings*, status as household *sole* earner and the presence of *support* from home) and financial safety (the presence of *debt*, income insurance (*inc_ins*) and life insurance (*life_ins*)). Informed by the results of the MCA, these four variables were chosen to form a composite measure of resilience. Debt, life insurance and income insurance were not included in the composite as they capture homeownership. Statistical analysis was performed in R Studio.

Results

Of the 161 doctors that participated in the survey, responses were evenly distributed by gender (47.2% female). The majority of respondents were over 30 years old (69.6%) and based in Cork (77%). Over 60% were Registrars, 34% were Senior House Officers (SHO) and 4% were Interns; 65% were Irish. Of the non-Irish doctors, 81.5% were non-European Union (EU) citizens.

The median salary for this cohort was inferred to be €55,000, the center of the median class. Over half the respondents were the household's sole earner. Less than half had dependents (43.5%), of which 14.9% had dependents who did not reside in the EU. Just under 30% of respondents estimated that their savings would last for less than 3 months if they had no income, while 34% had between 3- and 6-months income accumulated, 24% had between 6 and 12 months, and 12.6% had more than one year of savings put aside.

40% of doctors in this sample had loans or mortgages, with Irish doctors representing nearly 75% of those with debt. However, the statistical relationship between nationality and the incidence of debt is weak ($\chi^2_1 = 3.02, p\ val = 0.082$).

16.1% of the recipients of the survey had income insurance. Life insurance cover rates were 25.5%, and only 6.2% had composed a legally binding will. The majority (83.9%) of the doctors surveyed had not sought any financial guidance at the time of the survey and 95% of respondents were not aware of any employer programs to support their families.

Most of the respondents (83.1%) were unaware of their employment rights during the pandemic. 59% of respondents were either not worried or somewhat worried about contracting COVID-19, while just 12% were very worried. There is a moderate relationship between worry and nationality, with foreign doctors being more worried about the disease than Irish ($\chi^2_3 = 7.63, p\ val = 0.054$).

Based on the results of the MCA, a composite score (*resilience*) was calculated from the variables which encapsulate financial wherewithal – sole, savings, support and income. Variables were coded so that increasing values represented an increase in financial resilience. The composite was a simple unweighted summation of the value of each variable category resulting in a measure with a score range of 3 to 10 (**Table 3**). This assumes each component of the composite is equally important, which is unlikely, but in the absence of evidence as to the impact of each component on resilience it seems a reasonable approach.

It would be tempting to classify the scores as “Poor”, “Moderate”, “Excellent”, and so on, but without comparisons in the literature, such classification would be arbitrary. As there are 8 discrete scores, they are divided for convenience into 4 classes denoting increasing resilience, A through D, with A being the lowest class and D the highest (**Table 3**). Registrars aged 30 – 35 are the most common grade in each class. Class A and C are evenly split between the genders, while Class B is split 40/60 female to male; this ratio is reversed for those in Class D. Class A and B are evenly split between foreign and Irish doctors, however 77.4% of those in Class C are Irish, increasing to 90.5% in Class D.

Table 3: Frequency of Resilience Estimates among Doctors in Training.

Class	Score	Count	Proportion	Cumulative	Class Proportion
A	3	9	6%	6%	14%
	4	13	8%	14%	
B	5	31	19%	33%	40%
	6	34	21%	54%	
C	7	33	20%	75%	33%
	8	20	12%	87%	
D	9	14	9%	96%	13%
	10	7	4%	100%	

* all figures rounded to nearest percent

Only 19% of doctors in the highest class have binding wills, with a negligible number in the other classes (<6%). Equal numbers of Class A and B doctors have dependents but in the higher classes, the proportion with dependents first falls to 35.8% and then to 14.3%. Class A and B doctors tend to be sole earners (86.4% and 66.2%), while the reverse is true for Class C and D (35.8% and 23.8%). In terms of debt, about 40% of doctors have debt with the number slightly higher for Class C.

Discussion

This study examines the financial resilience of doctors in training at a time when occupation related death and illness was a potential reality. While previous studies of this group have focused on mental resilience^{16,17}, our findings indicate significant anxiety regarding financial resilience in the weeks following the COVID related lockdown.

McKnight & Rucci¹⁰ identify an accumulation of savings to the value of 3 times monthly income as the minimum threshold required, irrespective of welfare provision, so as not to be considered financially insecure. They define households with net financial assets to the value of at least six months of household income as financially secure. Based on this criterion, over 64% of doctors within this study would be considered financially fragile.

We can make some rough comparisons for this survey using the HSE salary scales and assumptions around household allowances and reliefs. Based on class midpoints, we calculated the median value of savings for interns as €3,731, representing 1.5 months of savings. According to McKnight & Rucci¹⁰, this cohort of doctors are financially insecure.

In 2018 national median savings and gross salaries in the Household Finance and Consumption Survey (HFCS) were €5,000 and €47,900 respectively¹⁸, which are higher than that of an intern. SHOs and registrars had median savings of €14,009 and €16,657 respectively, both falling below the 6 months of savings required to be considered financially secure. These figures are reflected in the wider community in a survey conducted by Kempson and Poppe⁹ who noted that the “resilience for the future” component was the worst performing measure of that paper’s financial well-being composite.

By comparison with national figures reported in the HFCS, 38.3% of households where the highest education of the reference person was a third level or post-graduate degree had a mortgage with a median outstanding balance of €155,400 and 32% had a non-mortgage loan (€8,200)¹⁹. These figures are broadly in line with our sample for which 60% reported the presence of mortgage or personal debt. Life insurance is a requirement for a mortgage in Ireland, and 25.5% of respondents registered this insurance, which we assume indicates the presence of a mortgage. Of concern is the low levels of doctors who have income insurance (16.1%). While most of this cohort were HSE employees, benefits are based on total average earnings, providing little in the way of early retirement support on medical grounds, or death for the household.

At the beginning of March 2020, a week after the first case of Covid-19 was confirmed in Ireland, the government advised of the COVID-19 'special leave with pay' arrangements²⁰. However, most of the doctors surveyed were not aware of any occupational support programs. Almost two-thirds (62.9%) did not think that their dependents would be looked after if they died; over twice as many foreign doctors felt this way as Irish doctors. Most respondents had not sought any financial guidance. These findings imply low levels of financial knowledge and social capital, and consequently resilience⁸.

Low sample size was a persistent issue during statistical analysis, while a large number of surveys were sent out the overall response rate was modest (16.1%), and predominantly from this area. The low response rate may be due to the increased workload belabouring medical staff, and also a certain amount of 'survey fatigue'. The majority of respondents were at the latter stages of training reflecting the importance of this issue as responsibilities such as debt and dependants increase with age. It is an avenue for future research to refine and repeat the analysis presented in this paper on a larger sample size with greater statistical power.

Financial resilience is a dynamic concept, this study was limited to measuring the financial resilience of this cohort at a single point in time. Nonetheless, the study indicates a low level of financial preparedness among doctors in training with the majority of doctors falling under the threshold to be considered financially secure, failing to be aware of available supports, and concerned about their dependents. Courses on financial resilience should be integrated into training programs similar to existing courses on emotional resilience and well being, by our training bodies.

Declaration of Conflicts of Interest:

The authors have no conflicts of interest to declare.

Corresponding Author:

Seamus O'Reilly MD PhD
Dept of Medical Oncology,
Cork University Hospital,
Wilton,
Cork.
E-mail: seamus.oreilly@hse.ie

References:

1. Bansal P, Bingemann TA, Greenhawt MM, Nanda A, Oppenheimer J, Sharma H et al. Clinician wellness during the COVID-19 pandemic: extraordinary times and unusual challenges for the allergist/immunologist. *J Allergy Clin Immunol Pract* 8:1781-1790. 2020.
2. Ing EB, XuQ, Salimi A, Torun N. Physician deaths from corona virus (COVID-19) disease. *Occup Med.* 70:370-4. 2020.

3. Modenese A, Gobba F. Increased risk of COVID-19 related deaths among general practitioners in Italy. *Healthcare* 8(2), 155 <https://doi.org/10.3390/healthcare8020155>.
4. Lambertini M, Toss A, Passaro A, Cristiello C, Cremolini C, Cardone C et al. Cancer care during the spread of coronavirus disease 2019 (COVI-19) in Italy: young oncologist's perspective. *ESMO Open* 5,e000759.doi10.1136/esmoopen-2020-000759
5. Semple S, Cherrie JW. COVID-19: protecting worker health. *Ann Work Expo Health* 64: 461-4. 2020.
6. Trappey B. Running on fumes. *JAMA* 324:1157-8. 2020.
7. Financial Resilience Taskforce. (2019). Measuring Household Financial Resilience (Financial Capability Strategy for the UK). Money & Pensions Service. <https://www.fincap.org.uk/en/articles/resilience-task-force>
8. Salignac F, Marjolin A, Reeve R, Muir K. Conceptualizing and Measuring Financial Resilience: A Multidimensional Framework. *Social Indicators Res* 145:17-38. 2019.
9. Kempson E, Poppe C. Assessing the levels of financial capability and financial wellbeing in Ireland. A report of the Competition and Consumer Protection Commission (CCPC) Ireland. Dublin: Competition and Consumer Protection Commission. <https://www.ccpc.ie/business/wp-content/uploads/sites/3/2018/12/Financial-Well-being-in-Ireland-Final-December-2018.pdf>
10. McKnight A, Rucci M. The financial resilience of households: 22 country study with new estimates, breakdowns by household characteristics and a review of policy options. Center for Analysis of Social Exclusion, LSE, Case paper 219. 2020. <https://financialcapability.gov.au/files/the-financial-resilience-of-households-22-country-study.pdf>.
11. Greenacre MJ. *Theory and Applications of Correspondence Analysis*. London. Academic Press. 1984.
12. Cronbach LJ. Coefficient alpha and the internal structure of tests. *Psychometrika* 16: 297-334. 1951.
13. Pulkstenis E, Robinson TJ. Goodness-of-fit tests for ordinal response regression models. *Stats in Med* 23:999-1014. 2004
14. Horan D, Lydon R, McIndoe-Calder T. Household wealth: what it is, who has it, and why it matters. Dublin. Central Bank of Ireland 2020.
15. Office for National Statistics. Financial resilience of households: the extent to which financial assets can cover an income shock. London Office of National Statistics. <https://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/articles/financialresilienceofhouseholdstheextenttowhichfinancialassetscancoveranincomeshock/2020-04-02#:~:text=On%20average%2C%>
16. Walsh G, Hayes B, Freeny Y, McArdle S. Doctor, how can we help you ? Qualitative interview study to identify key interventions to target burnout in hospital doctors. *BMJ Open* 9, e030209.doi: 10.1136/bmjopen-2019-030209
17. McKinley N, McCain RS, Conview L, Clarke M, Dempster M et al. Resilience, burnout and coping mechanisms in UK doctors: a cross sectional study. *BMJ Open* 27(10),e031765. Doi: 10.1136/bmjopen-2019-031765.

18. Central Statistics Office. Household finance and consumption survey 2018. <https://www.cso.ie/en/releasesandpublications/ep/p-hfcs/householdfinanceandconsumptionsurvey2018/>
19. Health Service Executive 2020. COVID-19 FAQs: for HR in the public health service in relation to leave associated with COVID 19. <https://www.hse.ie/eng/staff/resources/hr-circulars/covid-19-faqs-public-health-service-pdf>