

Content moderator mental health, secondary trauma and wellbeing: A cross-sectional study

Abstract

Content moderators (CMs) analyze and remove offensive or harmful user generated content that has been uploaded to the internet. Jobs which involve exposure to other people's suffering are associated with raised rates of secondary traumatic stress and mental health problems. However, research establishing psychological baseline symptoms in CMs is lacking. This study used an online survey to explore rates of psychological distress, secondary trauma and wellbeing in a sample of CMs. Regression analysis explored how various features of the work affected mental health. There was a dose response effect between frequency of exposure to distressing content and psychological distress and secondary trauma but not wellbeing. The results suggested supportive colleagues and feedback about the importance of their role ameliorated this relationship. Implications for CM working conditions are discussed.

Keywords: content moderation; mental health; secondary trauma; wellbeing; survey

Introduction

Content moderators (CMs) analyze and remove user-generated content that violates either the law or platform policies and guidelines. Material flagged as potentially harmful or offensive is sorted into queues and sent to CMs for review, where they make decisions about suitability.¹ Without content moderation services, online spaces could become unusable and unprofitable due to the proliferation of illegal or offensive content.^{2,3} Indeed, content can feature hate speech, graphic violence and other disturbing matter.

Indirect exposure to trauma is associated with a number of adverse effects.⁴ The four most commonly recognized conditions are secondary traumatic stress (STS), vicarious trauma (VT), burnout and compassion fatigue.⁵ These terms are used somewhat interchangeably, referring to different clusters of related but distinct symptoms or behaviours.^{6,7} Here we focus on combined secondary and vicarious trauma. STS/VT have similar symptoms to PTSD such as intrusive thoughts, hyperarousal and hypervigilance, although VT is also associated with a transformation of self-image and worldview.^{5,8} Studies with professionals like social workers and first responders show repeated exposure to other peoples' trauma experience and responses can be harmful,⁹⁻¹¹ with raised rates of STS, mental health difficulties and changes in the way they value and think of themselves.¹²⁻¹⁴

Similarly, CMs can be exposed to graphic material for hours every working day,¹⁵ and thus are also likely to experience clinical symptoms.¹⁶ Research with CMs suggests they experience symptoms associated with stress and mental health problems.¹⁷⁻²² However, publicly-available studies establishing psychological baseline symptoms in CMs are lacking.²³ It is unknown if greater exposure is associated with greater distress. Alongside distressing content, CMs can be expected to accurately classify and remove content in over

Content moderator mental health

95% of cases,²⁴ which can involve up to one thousand pieces of content a shift.² These quotas can restrict the ability of workers to take breaks.²⁵ However, CMs have expressed that work breaks help them manage stress.²⁶ Therefore, CMs who feel bad about taking breaks may exhibit more distress.

Workers exposed to graphic content appear to cope better if they discuss their concerns with colleagues doing similar roles.²⁶⁻²⁹ Colleagues are important for support because moderation is still considered an ‘invisible job’,^{3,30} contributing to a lack of understanding amongst people outside the profession.^{4,8,29,31} Additionally, CMs are often separated from the results of their labour.³² However, research with police officers and CMs reveals recognizing and acknowledging the importance of their roles can positively impact employee wellbeing.^{26,33} Therefore, supportive colleagues and feedback about the impact of the role may be linked to better mental health.

Content moderation can be considered a high stress role which may adversely affect staff wellbeing.^{16,19} Yet, little is currently known about the impacts of the role or what aspects are supportive. This study specifically aims to establish rates of psychological distress, secondary trauma and wellbeing in a group of CMs, explore whether exposure to content is directly associated with symptoms and wellbeing, and investigate if frequency of exposure, supportive colleagues, feedback about impact and feeling bad about taking breaks, exacerbate or ameliorates symptoms.

Methods

Participants

The majority of participants were female and based in Europe (see Table 1). Participant mean age was 34.3 years (SD = 9.54) and the average duration in a CM role was 51.76 months (SD

Content moderator mental health

= 54.52). The survey did not ask for organization details for added anonymity. The survey was started by 213 CMs and completed by 167 (78.8%). Overall, 188 (88.3%) completed the Core-10, a measure of psychological distress, 167 (78.8%) completed the short Warwick-Edinburgh Mental Wellbeing Scale, and 174 (81.7%) completed the Secondary and Vicarious Trauma Scale.

Table 1 Here

Procedure

Participants were identified through professional networks and social media posts targeting CMs. Snowball sampling was deployed, where CMs were encouraged to share the survey with their colleagues. Participants completed an online survey which included a range of questions outlined below. Participation was voluntary and anonymous. This research was approved by the university psychology department's ethics board.

Measures

Short Warwick Edinburgh Mental Wellbeing Scale (SWEMWBS)³⁴

The SWEMWS is a self-report measure of wellbeing consisting of seven items regarding thoughts and feelings over the previous two weeks. Items are scored from 1 '*none of the time*' to 5 '*all of the time*', the scores are summed and then transformed into metric scores using the SWEMWBS conversion table. Scores range from 7 to 35; high wellbeing is scored 27.5 and above, whilst low wellbeing is scored 19.5 and below.

Clinical Outcomes in Routine Evaluation (Core-10)³⁵

The Core-10 is a 10 item self-report measure assessing common presentations of psychological distress over the last week. Items are scored from 0 '*not at all*' to 4 '*most or all of the time*', and cover anxiety, depression, trauma, physical problems, functioning and risk to

Content moderator mental health

self. Scores are summed with severe psychological distress scored 25 and above, whilst the non-clinical range is scored 10 and below.

Secondary and Vicarious Trauma Scale (SVTS)

The SVTS is a 17 item self-report measure assessing aspects of secondary and vicarious trauma developed for the current study because other questionnaires do not measure both concurrently. Items are scored from 1 '*strongly disagree*' to 5 '*strongly agree*', and covers thoughts (*most people are not trustworthy*), emotions (*I often feel sad*), and intrusion (*I find it difficult to separate my work and personal life*). Scores are summed with higher scores indicating higher levels of secondary and vicarious trauma. The internal reliability of the SVTS was good ($\alpha = .83$).

Survey Questions

The survey included the questions '*what sex are you?*', '*what is your age? (in years)*', '*How long have you been a content moderator for? (in months)*' and '*where are you based?*'. To explore the variables of interest, CMs were asked '*on average, how often are you exposed to something distressing as part of your job? By distressing we mean something the average person might find upsetting*', '*if you find something difficult/distressing at work do you talk to your colleagues about it?*', '*do you get any feedback about how your work might help users?*' and were asked to rate the statement '*I feel bad when I take breaks*'.

Analysis

Hierarchical linear regressions were conducted with either psychological distress, wellbeing or secondary trauma entered as the dependent variable. Age and duration in role were centered before being entered into each model. Sex, location, frequency of exposure,

supportive colleagues, feeling bad about taking breaks and feedback about impact were entered as independent variables. To control for age, sex, duration in the job and location these were entered as predictors in the first step with 'male' and 'Europe' as reference groups, frequency of exposure was entered in the second step with 'less often' as the reference group and supportive colleagues, feeling bad about taking breaks and feedback about impact were entered in the last step. Due to small numbers, those located in Africa or anyone who did not identify as male or female were excluded.

Results

Few participants (6.9%) scored in the healthy range of the Core-10 and over a third scored (34.6%) in the moderate-to-severe range. Over a quarter (27.4%) of moderators scored low on wellbeing and only 7.7% reported high wellbeing. The Core-10 was related negatively to the SWEMWBS ($r = -.42, p < .001$) and positively to the SVTS ($r = .65, p < .001$). The SWEMWBS was negatively correlated with SVTS ($r = -.58, p < .001$). There was a dose response effect between frequency of exposure and the Core-10 ($F = 6.04, p < .01$) and the SVTS ($F = 4.43, p < .05$), but not wellbeing ($F = 0.97, n.s.$) (see Figure 1). Bonferroni post-hoc tests demonstrated daily exposure was associated with significantly greater scores on the Core-10 and SVTS than exposure occurring less than monthly.

Figure 1 Here

Linear Regression

CORE10: Female content moderators scored higher on psychological distress than males. UK, North American and Asian moderators scored higher than European moderators. Age and duration were not significantly related to psychological distress. CMs exposed to distressing content on a daily basis scored higher than those exposed less than monthly. Moderators who had supportive colleagues and who got feedback about the importance of

Content moderator mental health

their work scored significantly lower on psychological distress, whilst those who felt bad taking breaks scored significantly higher. When these factors were added to the model the association between exposure and psychological distress stopped being significant, as did the association between North American moderators and psychological distress.

SVTS: Similarly, UK content moderators scored higher on secondary trauma than European content moderators, and those exposed to distressing content on a daily basis scored significantly higher than those exposed less than monthly. Supportive colleagues and feedback about impact were associated with lower SVTS scores, whilst feeling bad about taking breaks was associated with higher scores. When these factors were added to the model the relationship between exposure and secondary trauma ceased being significant.

SWEMWBS: Wellbeing was only significantly positively related to supportive colleagues and negatively associated with feeling bad when taking breaks (see Table 2).

Table 2 Here

Discussion

This study is one of the first large scale surveys conducted with CMs investigating their mental health and wellbeing. Over half (53.0%) scored over 11 on the Core-10, which differentiates between clinical and non-clinical samples and 47.6% scored 13 or over, which is associated with clinical depression.³⁵ These rates appear to be higher than those found in police who deal with child sexual abuse and exploitation material, where a quarter scored in the clinical range for depression and anxiety.³⁶ Possibly because CMs are exposed to far more potentially traumatic content than other professions.^{2,6} Similarly, in community samples, wellbeing is normally distributed with 15% of people scoring at either end of the scale (i.e., ‘high’ or ‘low’).³⁷ However, this sample was skewed towards lower scores. A dose-response

Content moderator mental health

effect between exposure to content and psychological distress and secondary trauma was observed, indicating a clear association.

Female moderators exhibited higher rates of psychological distress, consistent evidence suggesting females are more likely to suffer from mental health problems.³⁸⁻³⁹ Duration of role was not associated with psychological distress, secondary trauma, or wellbeing. Some, though not all, studies suggest shorter rather than longer durations in trauma-focused work is associated with secondary trauma,⁴⁰⁻⁴³ CMs report experiencing desensitization to the content,¹⁹ however it may be people who do not leave the job.

Increased exposure was related to higher levels of psychological distress and secondary trauma, but not wellbeing, whilst feeling bad when taking breaks was associated with increased psychological distress and secondary trauma, and reduced wellbeing. It is possible the content is associated with increased mental health issues, whilst the 'endless' nature of digital labor erodes wellbeing as well.^{25,33,44} Roberts⁴⁵ noted some moderators had issues disengaging from the work, suggesting this association may even represent a symptom of distress rather than a cause.

Crucially, when supportive colleagues and feedback about the importance of the work were entered into the model, the relationships between exposure, psychological distress and trauma ceased to be significant. This indicates the work environment of CMs is of upmost importance in protecting them against the potential harmful effects of the role. Qualitative work has also highlighted the value workers in stressful roles place on colleagues and having their work recognized as important.^{26-27,29}

Limitations

The current study did not ask for employment details. The working conditions of CMs varies considerably. Some moderators, such as those working for outsourced companies, tend to be lower paid, less protected, and in some cases perceive themselves to be ‘second-class citizens’.^{2,45} It is possible these sorts of different contractual working arrangements may affect or account for some of the relationships.

Conclusions

This study demonstrates CMs have high rates of psychological distress and secondary trauma, and lowered wellbeing. Critically, the results suggest allowing moderators to create strong collegiate networks and providing them feedback about the importance of their work helps ameliorate the relationship between exposure to distressing content and potential adverse effects. Additionally, there is some evidence encouraging healthy working practices through taking breaks would also be beneficial.

References

1. Ahmad S, Krzywdzinski M. Moderating in Obscurity: How Indian Content Moderators Work in Global Content Moderation Value Chains. In: Digital Work in the Planetary Market. (Graham M, Ferrari F. eds.) The MIT Press: Cambridge, MA; 2022; pp. 77-95.
2. Barrett, PM. Who Moderates the Social Media Giants? A Call to End Outsourcing. New York University Stern Center for Business and Human Rights: New York; 2020.
3. Gillespie T. Custodians of the Internet: Platforms, content moderation, and the hidden decisions that shape social media. Yale University Press: New Haven; 2018.

4. Burns CM, Morley J, Bradshaw R, et al. The emotional impact on and coping strategies employed by police teams investigating internet child exploitation. *Traumatology* 2008;14(2); doi: [10.1177/1534765608319082](https://doi.org/10.1177/1534765608319082)
5. Foley J, Massey KLD. The 'cost' of caring in policing: From burnout to PTSD in police officers in England and Wales. *Police J* 2021;94(3); doi: [10.1177/0032258X20917442](https://doi.org/10.1177/0032258X20917442)
6. Perez LM, Jones J, Englert DR, et al. Secondary traumatic stress and burnout among law enforcement investigators exposed to disturbing media images. *J Police Crim Psychol* 2010;25; doi: [10.1007/s11896-010-9066-7](https://doi.org/10.1007/s11896-010-9066-7)
7. Shoji K, Lesnierowska M, Smoktunowicz E, et al. What comes first, job burnout or secondary traumatic stress? Findings from two longitudinal studies from the U.S. and Poland. *PLoS ONE* 2015;10(8); doi: [10.1371/journal.pone.0136730](https://doi.org/10.1371/journal.pone.0136730)
8. Krause M. Identifying and managing stress in child pornography and child exploitation investigators. *J Police Crim Psychol* 2009;24; doi: [10.1007/s11896-008-9033-8](https://doi.org/10.1007/s11896-008-9033-8)
9. Levin AP, Putney H, Crimmins D, et al. Secondary traumatic stress, burnout, compassion satisfaction and perceived organizational trauma readiness in forensic science professionals. *J Forensic Sci* 2021;66; doi: [10.1111/1556-4029.14747](https://doi.org/10.1111/1556-4029.14747)
10. Greinacher A, Derezza-Greeven C, Herzog W, et al. Secondary traumatization in first responders: A systematic review. *Eur J Psychotraumatol* 2019;10(1); doi: [10.1080/20008198.2018.1562840](https://doi.org/10.1080/20008198.2018.1562840)
11. Sollie H, Kop N, Euwema MC. Mental resilience of crime scene investigators: How police officers perceive and cope with the impact of demanding work situations. *Crim Justice and Behav* 2017;44(12); doi: [10.1177/0093854817716959](https://doi.org/10.1177/0093854817716959)
12. Bourke ML, Craun SW. Coping with secondary traumatic stress: Differences between U.K. and U.S. child exploitation personnel. *Traumatology* 2014;20(1); doi: [10.1037/h0099381](https://doi.org/10.1037/h0099381)

13. Ralph N. Dealing with the personal impact of crimes against children. College of Policing; 2020. Available from: <https://www.college.police.uk/article/dealing-personal-impact-crimes-against-children> [Last accessed: January/14/2023].
14. Stanley IH, Hom MA, Joiner TE. A systematic review of suicidal thoughts and behaviors among police officers, firefighters, EMTs, and paramedics. *Clin Psychol Rev* 2016;44; doi: 10.1016/j.cpr.2015.12.002
15. Dwoskin E. Inside facebook, the second-class workers who do the hardest job are waging a quiet battle *The Washington Post*; 2019. Available from: <https://www.washingtonpost.com/technology/2019/05/08/inside-facebook-second-class-workers-who-do-hardestjob-are-waging-quiet-battle/> [Last accessed: January/15/2023]
16. Steiger M, Bharucha TJ, Venkatagiri S, et al. The psychological well-being of content moderators: The emotional labor of commercial moderation and avenues for improving support. In: CHI Conference on Human Factors in Computing Systems (CHI '21), May 8-13, 2021; Yokohama, Japan; doi: 10.1145/3411764.3445092
17. Dosono B, Semaan B. Moderation practices as emotional labor in sustaining online communities: The case of AAPI identity work on Reddit. In *Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems* 2019;1-13; doi: 10.1145/3290605.3300372
18. Lo C. *When All You Have is a Banhammer: The Social and Communicative Work of Volunteer Moderators*. PhD Thesis, Massachusetts Institute of Technology: Cambridge, MA; 2018.
19. Spence R, Bifulco A, Bradbury P, et al. The psychological impacts of content moderation on content moderators: A qualitative study. *Cyberpsychology* 2023;17(4); doi: 10.5817/CP2023-4-8.

20. Wohn DY. Volunteer moderators in twitch micro communities: How they get involved, the roles they play, and the emotional labor they experience. In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems (Glasgow, Scotland Uk) (CHI '19). Association for Computing Machinery: New York, NY 2019; Article 160; doi: 10.1145/3290605.3300390
21. Cook CL, Cai J, Wohn DY. Awe versus aww: The effectiveness of two kinds of positive emotional stimulation on stress reduction for online content moderators. Proc ACM Hum Comput Interact 2022;6; doi: 10.1145/3555168
22. Riedl MJ, Masullo GM, Whipple KN. The downsides of digital labor: Exploring the toll incivility takes on online comment moderators. Comput Human Behav 2020;107:106262; doi: 10.1016/j.chb.2020.106262
23. Roberts ST. Commercial content moderation and worker wellness: Challenges & opportunities Techdirt; 2018. Available from: <https://www.techdirt.com/2018/02/08/commercial-content-moderation-worker-wellness-challenges-opportunities/> [Last accessed: January/12/2023].
24. Dwoskin E, Whalen J, Cabato R. Content moderators at YouTube, Facebook and Twitter see the worst of the web – and suffer silently The Washington Post; 2019. Available from: <https://www.washingtonpost.com/technology/2019/07/25/social-media-companies-are-outsourcing-their-dirty-work-philippines-generation-workers-is-paying-price/> [Last accessed: January/12/2023].
25. Newton C. The Terror Queue The Verge; 2019. Available from: <https://www.theverge.com/2019/12/16/21021005/google-youtube-moderators-ptsd-accenture-violent-disturbing-content-interviews-video> [Last accessed: January/12/2023].

26. Spence R, Harrison A, Bradbury P, et al. Content moderators' strategies for coping with the stress of moderating content online. *J Online Trust Saf* 2023;1(5); doi: 10.54501/jots.v1i5.91
27. Brady PQ, Fansher AK, Zedaker SB. Are parents at a higher risk for secondary traumatic stress?: How interviewing child victims impacts relationships with forensic interviewer's friends and family. *Child Abuse Negl* 2019;88; doi: 10.1016/j.chiabu.2018.11.017
28. Foley J, Hassett A, Williams E. 'Getting on with the job': A systematised literature review of secondary trauma and post-traumatic stress disorder (PTSD) in policing within the United Kingdom (UK). *Police J* 2022;95(1); doi: 10.1177/0032258X21990412
29. Brady PQ. Crimes against caring: Exploring the risk of secondary traumatic stress, burnout, and compassion satisfaction among child exploitation investigators. *J Police Crim Psychol* 2017;32; doi: 10.1007/s11896-016-9223-8
30. Gray ML, Suri S. *Ghost Work. How to stop Silicon Valley from building a new global underclass.* Houghton Mifflin Harcourt: Boston; 2019.
31. Powell M, Cassematis P, Benson M, et al. Police officers' perceptions of the challenges involved in internet child exploitation investigation. *Policing: An International Journal* 2014;37(3); doi: 10.1108/PIJPSM-08-2013-0080
32. Spence, R., DeMarco, J., & Martellozzo, E. Invisible workers, hidden dangers *The Psychologist*; 2023.
33. Doyle M, Tapson K, Karagiannopoulos V, et al. Impacts of organisational role and environmental factors on moral injury and trauma amongst police investigators in Internet Child Abuse Teams. *Police J* 2023;96(1); doi: 10.1177/0032258X211043331

34. Tennant R, Hiller L, Fishwick R, et al. The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): development and UK validation. *Health Qual Life Outcomes* 2007;5; doi: 10.1186/1477-7525-5-63
35. Barkham M, Bewick B, Mullin T, et al. The CORE-10: A short measure of psychological distress for routine use in the psychological therapies. *Couns Psychotherapy Res* 2013;13(1); doi: 10.1080/14733145.2012.729069
36. Conway P, Redmond T, Lundrigan S, et al. Protecting the Protectors: Moral Injury, Coping Styles, and Mental Health of UK Police Officers and Staff Dealing with Child Sexual Abuse and Exploitation; Under Review.
37. Ng Fat L, Scholes S, Boniface S, et al. Evaluating and establishing national norms for mental wellbeing using the short Warwick–Edinburgh Mental Well-being Scale (SWEMWBS): Findings from the Health Survey for England. *Qual Life Res* 2017;26(5); doi: 10.1007/s11136-016-1454-8
38. Altemus M, Sarvaiya N, Epperson CN. Sex differences in anxiety and depression clinical perspectives. *Front Neuroendocrinol* 2014;35(3); doi: 10.1016/j.yfrne.2014.05.004
39. Boyd A, Van de Velde S, Vilagut G, et al. Gender differences in mental disorders and suicidality in Europe: results from a large cross-sectional population-based study. *J Affect Disord* 2015;173; doi: 10.1016/j.jad.2014.11.002
40. Adams SA, Riggs SA. An exploratory study of vicarious trauma among therapist trainees. *Train Educ Prof Psychol* 2008;2(1); doi: 10.1037/1931-3918.2.1.26
41. Gray C, Rydon-Grange M. Individual characteristics, secondary trauma and burnout in police sexual and violent offending teams. *Police J* 2020;93(2); doi: 10.1177/0032258X19847499

42. Hurrell AK, Draycott S, Andrews L. Secondary traumatic stress in police officers investigating childhood sexual abuse. *Policing: An International Journal* 2018;41(5); doi: 10.1108/PIJPSM-08-2016-0131
43. Boscarino JA, Figley CR, Adams RE. Compassion fatigue following the September 11 terrorist attacks: A study of secondary trauma among New York City social workers. *Int J Emerg Ment Health* 2004;6(2):57.
44. Coles J, Astbury J, Dartnall E, et al. A qualitative exploration of researcher trauma and researchers' responses to investigating sexual violence. *Violence Against Women* 2014;20(1); doi: 0.1177/1077801213520578
45. Roberts ST. *Behind the screen: Content Moderation in the Shadows of Social Media*. Yale University Press: New Haven; 2019.

Table 1: Demographic frequencies

	Frequency (%) N = 213
Sex	
Male	100 (46.9)
Female	106 (49.8)
Non-binary/ third gender	3 (1.4)
Prefer not to say	4 (1.9)
Location	
UK	38 (17.8)
Europe	96 (45.1)
North America	30 (14.1)
South America	14 (6.6)
Asia	31 (14.6)
Africa	4 (1.9)
Age	
18 – 25	29 (13.6)
26 – 35	109 (51.2)
36 – 45	50 (23.5)
46 and older	25 (11.7)
Time in Role	
Under 6 months	18 (8.5)
6-12 months	21 (9.9)
1-2 years	54 (25.4)
2-5 years	64 (30.0)
Over 5 years	56 (26.3)

Content moderator mental health

Frequency of Exposure

Daily	87 (40.8)
Weekly-to-Monthly	92 (43.2%)
Less Often	34 (16.0%)

Table 2: Results of the hierarchical linear regression analyses

	Core-10		STVS		SWEMBS	
	B (95% CI)	t	B (95% CI)	t	B (95% CI)	t
Step 1	$R^2 = .068, \Delta R^2 = .109^*$		$R^2 = .060, \Delta R^2 = .101^*$		$R^2 = .056, \Delta R^2 = .097^*$	
Female	1.79 (.05-3.54)	2.03*	2.80 (-.72-6.32)	1.57	.73 (-.66-2.11)	1.03
Age	-.06 (-.18 - .05)	-1.09	-.18 (-.42-.05)	-1.53	.06 (-.03-.15)	1.31
Duration	-.01 (-.03 - .01)	-1.01	-.02 (-.06-.03)	-.76	.01 (-.01-.03)	1.20
Location						
UK	2.82 (.38-5.25)	2.29*	7.41 (2.49-12.32)	2.98**	-1.28 (-3.21-.66)	-1.30
N. America	3.18 (.44 - 5.91)	2.29*	4.53 (-.98-10.05)	1.62	-.43 (-2.61-1.74)	-.39
S. America	3.03 (-.65-6.71)	1.63	5.36 (-2.06-12.78)	1.43	-2.69 (-5.16-.24)	-1.82
Asia	2.56 (.10-5.01)	2.05*	3.23 (-1.73-8.19)	1.29	1.62 (-.34-3.57)	1.63
Step 2	$R^2 = .085, \Delta R^2 = .027$		$R^2 = .071, \Delta R^2 = .023$		$R^2 = .044, \Delta R^2 = .000$	
Female	1.67 (-.07-3.40)	1.90	2.60 (-.91-6.11)	1.46	.83 (-.57-2.23)	1.17
Age	-.07 (-.18-.05)	-1.14	-.19 (-.42-.05)	-1.60	.06 (-.04-.15)	1.20
Duration	-.01 (-.03-.01)	-.85	-.01 (-.05-.03)	-.60	.01 (-.01-.03)	1.22
Location						
UK	2.66 (.23-5.08)	2.17*	7.06 (2.16-11.97)	2.85**	-1.35 (-3.31-.60)	-1.37
N. America	2.85 (.14-5.57)	2.08*	3.92 (-1.58-9.41)	1.41	-.42 (-2.61-1.77)	-.38
S. America	2.28 (-1.41-5.96)	1.22	3.98 (-3.47-11.44)	1.06	-.248 (-5.45-.49)	-1.65
Asia	2.22 (-.24-4.69)	1.78	2.57 (-2.42-7.56)	1.02	1.57 (-.42-3.55)	1.56
Exposure						
Daily	3.35 (.60-6.10)	2.41*	6.26 (.69-11.82)	2.22*	-.57 (-2.79-1.64)	-.51
Monthly	2.12 (-.61-4.86)	1.54	4.25 (-1.28-9.78)	1.52	.37 (-1.83-2.58)	.34
Step 3	$R^2 = .312, \Delta R^2 = .228^{***}$		$R^2 = .301, \Delta R^2 = .230^{***}$		$R^2 = .262, \Delta R^2 = .220^{***}$	
Female	2.03 (.44-3.63)	2.52*	2.99 (-.24-6.21)	1.83	.89 (-.41-2.20)	1.35

Content moderator mental health

Age	-.02 (-.13-.08)	-.46	-.11 (-.31-.10)	-1.00	.02 (-.06-.10)	.49
Duration	-.01 (-.02-.01)	-.71	-.01 (-.04-.03)	-.45	.01 (-.01-.02)	1.22
Location						
UK	2.44 (.28-4.59)	2.23*	6.29 (1.93-10.65)	2.85**	-.90 (-2.66-.86)	-1.01
N. America	1.51 (-.93-3.96)	1.22	1.63 (-3.32-6.58)	.65	.42 (-1.58-2.42)	.42
S. America	.59 (-2.66-3.84)	.36	.69 (-5.89-7.27)	.21	-1.18 (-3.83-1.48)	-.87
Asia	2.94 (.76-5.11)	2.67**	3.91 (-.49-8.31)	1.76	1.21 (-.57-2.99)	1.34
Exposure						
Daily	1.07 (-1.41-3.55)	.85	1.74 (-3.28-6.76)	.68	1.16 (-.87-3.19)	1.13
Monthly	1.01 (-1.41-3.43)	.82	1.76 (-3.14-6.666)	.71	1.41 (-.57-3.39)	1.40
Colleagues	-3.83 (-6.17—1.49)	-3.24***	-6.01 (-10.74—1.27)	-2.51*	2.18 (.26-4.09)	2.25*
Breaks	3.49 (1.78-5.19)	4.04***	8.09 (4.64-11.54)	4.63***	-3.54 (-4.93—2.14)	-5.01***
Feedback	-3.08 (-5.05—1.10)	-3.08**	-5.97 (-9.97—1.98)	-2.96**	1.38 (-.24-2.99)	1.69

*p < .05, **p < .01, ***p < .001

Content moderator mental health

Figure 1: Mean scores on psychological distress, secondary trauma and wellbeing by frequency of exposure

Content moderator mental health