



CREaTE

Canterbury Research and Theses Environment

Canterbury Christ Church University's repository of research outputs

<http://create.canterbury.ac.uk>

Please cite this publication as follows:

Horvath, M. and Massey, K. (2018) The impact of witnessing other people's trauma: the resilience and coping strategies of members of the faculty of forensic and legal medicine. *Journal of Forensic and Legal Medicine*. ISSN 1752-928X.

Link to official URL (if available):

<https://doi.org/10.1016/j.jflm.2018.02.012>

This version is made available in accordance with publishers' policies. All material made available by CReaTE is protected by intellectual property law, including copyright law. Any use made of the contents should comply with the relevant law.

Contact: create.library@canterbury.ac.uk



The Impact of Witnessing Other People's Trauma: The Resilience and Coping Strategies of Members of the Faculty of Forensic and Legal Medicine

Abstract

Introduction: The coping strategies, resilience and psychological distress of members of the Faculty of Forensic and Legal Medicine (FFLM) were measured in an attempt to establish how they are affected by, and accommodate potentially traumatic encounters with patients. Belief in a just world was also measured as it was deemed to be a mediating factor in the psychological distress exhibited in the medical practitioners who participated in this study.

Methods: 120 members of the FFLM (65 females, 54 males and 1 undisclosed) volunteered to complete an online survey. Data was collected using Survey Monkey. Participants filled out the Personal Belief in a Just World Scale and General Belief in a Just World Scale, as well as the Connor-Davidson Resilience Scale 25, the COPE and the Brief Symptom Inventory.

Results: A multiple regression with stepwise entry was carried out. Personal belief in a just world, coping strategies and resilience were all identified as having a significant relationship with psychological distress.

Conclusions: Although this is only a preliminary study into this phenomenon, findings suggest the personal belief in a just world, coping strategies and resilience are useful predictors of psychological distress amongst forensic medical practitioners. However they did not predict the majority of the variance and as such, more detailed investigations are needed to identify which other factors are important in order to design interventions and support for members of the Faculty of Forensic and Legal Medicine and other forensic medical practitioners.

Keywords: trauma; medical professionals; resilience; coping; belief in a just world; forensic.

List of abbreviations: FFLM, Faculty of Forensic and Legal Medicine; BJW, Belief in a Just World; PBJW, Personal Belief in a Just World;

1. Introduction

The idea of vicarious trauma is not a new one; studies that look at the emotional impacts on professionals who work in stressful roles date back decades (for example¹). There has been extensive work on Combat PTSD^{2,3} and vicarious trauma in the police,^{4,5} in addition to fire and rescue personnel.⁶ The effect of stress on workers is also well documented, however, there are no previous studies into the psychological distress caused by working in the forensic medical field.

The Faculty of Forensic and Legal Medicine (FFLM) comprises of doctors working in three related disciplines; forensic medical practitioners (forensic physicians, forensic pathologists, sexual assault examiners, child physical and sexual assault examiners), medico-legal advisers and medically qualified coroners. The FFLM's member's roles can be considered particularly challenging as they are required to juggle the demands of two professions - medical and legal - while also managing the psychological and physical consequences of violence experienced by their patients (and the subsequent impact on themselves and their colleagues). Further almost all FFLM members combine their work that comes under the remit of the Faculty with other roles (for example they may work as a GP for the majority of their week and do a few shifts as a sexual assault examiner). This research explored the coping mechanisms, resilience and psychological distress of members of the FFLM as limited research has investigated the impacts on medical and legal professionals of working with victims of violent and sexual crime.⁷ What research there is has primarily focused on reducing or delaying burnout of professionals working in emotionally stressful professions, such as social work and nursing.^{8,9} Drawing on this limited evidence base and broader psychological theories we predict that three measurable characteristics will determine FFLM members coping mechanism(s): coping mechanisms, resilience and Belief in a Just World (BJW).

Coping Mechanisms are often used to explain why and how people are able to experience stressful situations and come out of them without demonstrating severe negative psychological consequences.^{10,11,12} Most people are able to find ways to deal with the stress they experience in life.¹⁰ This ability to cope refers to the set of cognitive and behavioural strategies used by an individual to manage themselves and their emotions in stressful situations.¹³ However, not all techniques are positive in outcome, some mechanisms used to cope with stress can carry an element of "trade-off" such as use of alcohol or drugs or over spending.

Resilience refers to the ability to bounce back from distressing situations and deal with long term, ongoing stressful experiences.^{14,15,16} This term is often applied to individuals that appear to function

unexpectedly well in adverse or stressful conditions.¹⁷ There is evidence to suggest there are both behavioural as well as personality factors that explain resilience, including self-esteem,¹⁸ flexible adaptation¹⁶ and use of coping mechanisms.¹⁹ Although resilience undoubtedly has a developmental and personality component to it, it is not static and is believed to be influenced by context.²⁰ It is also believed by some to be an adaptive state and not a personality trait.²¹ The use of coping mechanisms can enhance and increase an individual's resilience. Previous studies of the resilience of medical professionals include medical interns in Brazil, ambulance officers in Australia and nurses in the USA.^{22, 23, 24} Gabriel *et al's*²² study of nurses found that high levels of resilience correlated with positive affect even when they were not happy with their performance on tasks. Sen *et al*²³ found that social skills affect medical interns' resilience; individuals with lower level of social skills were more prone to burn out and mental health problems. Finally, Stevens *et al*²⁴ found that resilience is one of the strongest predictors of readiness to respond to high risk paramedic calls.

Belief in a Just World (BJW). The just world hypothesis²⁵ suggests that people have the unrealistic belief that good things happen to good people and bad things to bad people. As a result BJW serves adaptive functions, and people try to protect this belief when they are confronted with injustice.^{26, 27, 28} Overall, just world research has identified three functions of the BJW²⁹; (a) it is indicative of a personal contract and the obligation to behave fairly, (b) it endows individuals with the confidence that they will be treated fairly by others and will not fall victim to an unforeseeable disaster, and (c) it provides a conceptual framework, which helps individuals to interpret the events of their personal lives in a meaningful way. In some previous studies BJW has been found to sustain mental health³⁰ and to act as a buffer which helps victims of a disaster maintain their mental health.³¹

Recent research that has explored BJW and mental health has indicated that differentiation between general and personal BJW is important.^{30, 32, 33} Personal BJW reflects the belief that events in one's own life are just; the general BJW reflects the belief that basically the world is a just place. It has been shown that individuals tend to endorse the personal BJW more strongly than the general BJW and that the personal BJW is more important in predicting mental health.^{30, 32} However it is unclear from the existing research what the impact of the two types of BJW will be on forensic medical practitioners who are not directly experiencing a traumatic event themselves but repeatedly witnessing the impact of traumatic events on their patients.

Finally, some researchers have argued that General BJW could serve as justifying strategies to promote individuals' resilience that indicates positive adaptation in the face of adversity.²¹ These findings suggest that further investigations are needed and lead us to predict that amongst forensic medical practitioners BJW will predict psychological resilience. As a result practitioners who have strong BJW will have greater resilience and use more supportive coping mechanisms and therefore have experience less psychological distress.

As well as investigating the determinants of the coping mechanisms used and the coping mechanisms themselves, this study will measure the symptoms of psychological distress experienced by forensic medical practitioners using the Brief symptom inventory (BSI).³⁴ The BSI is a self-report measure of symptoms of psychological distress and psychiatric disorders. The present study explores the connections between the characteristics of forensic medical practitioners, their coping mechanisms and symptoms of psychological distress. It was expected that:

1. compared to forensic medical practitioners with a weak BJW, forensic medical practitioners who have strong BJW will have greater resilience, will use more supportive coping mechanisms, and will be less likely to experience symptoms of psychological distress
2. forensic qualifications held, years of experience and the type of forensic work the practitioner is engaged in will mediate the relationships between BJW, resilience and coping mechanisms used.

Figure 1 gives a visual representation of the direction of the hypotheses.

INSERT FIGURE 1 HERE

2. Method

Participants

One hundred and twenty members of the Faculty of Forensic and Legal Medicine (65 females, 54 males and 1 undisclosed) volunteered to complete the online survey. There were just under 1000 members in the FFLM when the data were collected, meaning approximately 12% of all members participated in this study. Of the participants, 118 indicated their age which ranged from 29 years old to 73 ($M = 52.08$, $SD = 9.21$). Most of the participants were married or in a civil partnership (77.5%), with equal numbers being divorced (8.3%) and in a cohabiting relationship (8.3%). The remaining participants being single (3.3%) or in a relationship but not cohabiting (2.5%). Most participants were Forensic Physicians ($n=76$), but as the participants were able to give more than one answer, the most common other professions given were Sexual Offence Examiners ($n=54$) and

Child Physical and Sexual Assault Examiner (n=27). Of the 118 people that specified how much of their work was for the FFLM, 23.5% of spend all of their working week working for the FFLM. Eleven percent stated that only 10% of their work was for the FFLM and only 2% of the participants that answered this questionnaire stated that they did not do any work for the FFLM.

Measures

The online survey comprised 5 sections. *Section 1* included basic demographic questions and questions to establish the capacity in which the participants are affiliated with the FFLM.

Section 2 was the Personal Belief in a Just World Scale³² and General Belief in a Just World Scale.³⁵

This is a 13 question measure that is designed to establish the extent to which an individual believes the world is a fair place; a meritocracy and people get what they deserve. This is a well-established measure that has been shown to be valid and reliable.³² It has also been used in studies of a wide range of stress and trauma (for example [rape],³⁶ [natural disaster],³¹ [working life]³⁷)

Section 3 was the Connor-Davidson Resilience Scale 25³⁸ which measures personal resilience and psychological factors that have been shown to reduce the negative impact of trauma and difficult life events. It was chosen as it a well-established measure which has been shown to have sound psychometric properties, to have good internal consistency and test-retest reliability. It has been tested in both the general population and with clinical samples.³⁸

Section 4 was the COPE,³⁹ a 40 item questionnaire that was adapted for this study to measure a broad range of coping responses to forensic medical work, it includes some responses that are deemed to be dysfunctional/negative and others that are deemed to be functional/positive. Polar opposite items are included as people have been shown to engage in a wide range of coping during a given period, including both positive and negative coping strategies at the same time. The scale's authors encourage users to adapt the scale and instructions for their own needs. As a result we amended the instructions to focus participants' attention on the coping mechanisms they use to deal with the stress in their lives related to the forensic work they do. We also asked them to focus on the last month to match the timeframe in the other scales. The brief COPE comprises 28 items; we have added 12 to capture other coping mechanisms reported in the literature that are particularly pertinent to forensic medical practitioners and were not included already or included in the full version of the COPE (which is 60 items). There are 40 items in the scale and participants are asked to respond to each on a 4 point scale from 'I don't do this at all' to 'I do this a lot'.

Section 5 was the Brief Symptom Inventory (BSI).³⁴ This is a validated 53 item self-report measure of nine categories of psychological symptoms; Somatization, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation and Psychoticism. The

BSI is widely used by mental health professionals in England and Wales. It has previously been in a wide range of contexts and populations.

Procedure

All members of the FFLM were approached by e-mail and invited to complete the online survey. Those individuals who volunteered to participate were able to do this electronically in their own time, in private. When participants followed the link to the online survey they were taken to a landing page which contained background information about the study and if they wished to continue. They were asked to provide informed consent by checking a box. When the participants had completed the questionnaire, they were presented with debriefing information thanking them for their participation, providing information about the researchers and support services should they wish to contact them. As this was a preliminary exploratory study no control group was included, this study is the first part in a larger body of work looking at vicarious trauma in professionals who work with clients that have experienced trauma.

3. Results

Table 1 shows the means and standard deviations for the five scales used in the survey. Personal Belief in a Just World was high with a mean score of 28.73. This was skewed towards strong believers of PBJW. The mean resilience scores for the participants in this study is lower than that expected in the general population with the US general population scoring on average 80.7.³⁸ However these scores are in line with the limited number of previous studies of medical and other professionals.^{22-24,40} Also the distribution of scores was skewed toward the participants being resilient with most participants scoring over 70 which is what would be expected from a population that have chosen to enter in to a stressful and emotionally demanding profession.

INSERT TABLE 1 HERE

There were 14 coping mechanisms identified as being used by the participants, of these 10 were identified as positive (Humour, Active Coping, Use of Emotional support, Positive reframing, Self-distraction, Religion, Use of Instrumental Support, Venting, Acceptance, Planning), 4 as negative (Self-blame, Behavioural disengagement, Substance Use, Denial). The negative coping mechanisms were those least used. The rank order of coping mechanisms (from most to least used) were: Humour, Active Coping, Use of Emotional support, Self-blame, Positive reframing, Self-distraction,

Religion, Use of Instrumental Support, Venting, Behavioural disengagement, Substance Use, Denial, Acceptance and Planning. The BSI scores in this study were high which is consistent with previous studies of medical professionals.⁴¹⁻⁴⁴

Kendall's tau-b correlations were run between all of the scales used in the study. All of the significant associations are now reported and were in the directions expected. Positive correlations were found between PBJW and GBJW ($\tau_b = .317, p = .01$), resilience and PBJW ($\tau_b = .152, p = .01$), general coping and positive coping ($\tau_b = .888, p = .01$), general and negative coping ($\tau_b = .581, p = .01$), positive and negative coping ($\tau_b = .462, p = .01$), positive coping and BSI score ($\tau_b = .283, p = .01$), negative coping and BSI score ($\tau_b = .374, p = .01$). Negative correlations were found between PBJW and BSI score ($\tau_b = -.199, p = .01$) and resilience and BSI score ($\tau_b = -.194, p = .01$).

In order to test the proposed model of links between Forensic Medical practitioners' characteristics, coping mechanisms and psychological distress a multiple regression with stepwise entry was carried out. This excluded years of experience and identified PBJW, coping strategies and resilience as having a significant relationship with psychological distress, as shown in Table 2.

INSERT TABLE 2 HERE

PBJW explained 17% of the variation in psychological distress, coping mechanisms a further 6% and resilience a further 4%. As PBJW decreases, psychological distress increases (suggesting that people who have less PBJW are more psychologically distressed). As use of coping mechanisms increases, psychological distress increases (suggesting that people who use more coping mechanisms are more psychologically distressed, or as people become more psychologically distressed they utilize more coping mechanisms). As resilience decreases, psychological distress increases (suggesting that people who are less resilient are more psychologically distressed). However, 73% of variance is left unexplained suggesting that other factors would explain the causes of forensic medical practitioners psychological distress more than those measured in this study.

4. Discussion

The results from this study leave many questions unanswered as there was a high level of unexplained variance. It is clear that the measures used in this study to explain the methods of coping were only part of the story. However, as there is very limited research into the phenomenon of vicarious traumatisation amongst professionals in high stress and emotional professions, it is

perhaps not surprising that more research is needed to identify what best explains their ability to cope with the work they do.

Although the resilience scores returned in this study were lower than the general (US) population, it is clear that they were in line with other studies of medical professionals.^{22-24,40} These lower scores are likely to reflect perceived resilience in the individuals rather than actual resilience. Medical professionals are trained to hold themselves to very high standards and this may be reflected in their responses on this self-report questionnaire.

The coping mechanism results were as expected with FFLM members using positive coping mechanisms more often than negative ones with 8 of the top 10 most used mechanisms being positive. Supervision and continuing professional development which employees in the medical profession are encouraged to attend could explain this helpful and healthy approach to self-care. The only high ranking negative coping strategy is self-blame which was ranked fourth. In many health professions including medical doctors self-blame, or at least self-challenge is encouraged, with individuals being expected to consider how things could be done better or more effectively next time. All doctors in the United Kingdom are now expected to make reflection part of their lifelong learning⁴⁵ and this drive for criticality could, in part, explain the reported frequent use of self-blame factor as a coping mechanism.

An interesting finding in this study was the reported low level of drug and alcohol use as a coping strategy. The nature of the work carried out by these professionals may be perceived to be likely to reduce the use of negative mechanisms such as substance use because they could impact negatively on the individual's ability to carry out their job. However dependency has been consistently found to be commonplace amongst doctors for many years now. In 1987 when Firth-Cozens⁴² published her study of junior doctors, she cited alcohol and drug dependency as a major problem, and other studies pre date this.^{46-48,40} The problem of doctors drinking and taking drugs at higher levels than the general population persists with the British Medical Association calling for action over the use of drugs and alcohol in 2005 after finding a widespread problem in the profession. However, in this study the reported use of alcohol and drugs were low. This may be, as a result of the self-report nature of this study or that the doctors that took part happen to be a low dependency sub-group.

As expected the participants in this study were found to have high levels of PBJW, this is belief is both a protective factor and is linked to positive mental health and ability to cope resiliently.^{29,33,49}

The participants in this study scored extremely high on the BSI, at times scoring similar to inpatient averages. Although this may at first seem concerning, it is in line with previous research with medical professionals. It is worth noting that it is not possible to discern whether these high BSI scores are as a result of the work at the FFLM or generally being a doctor. None of the participants worked solely for the FFLM and they all had other medical roles so it is not possible to know exactly what is causing the emotional distress. Medical doctors show high levels of depression and anxiety, and have for decades.^{41-43,50} Previous studies that have used the BSI on medical doctors have also found BSI scores above the clinical cut off for outpatients.⁵¹ Possible reasons given by Meerten *et al*⁵¹ for these high scores are that doctors are reluctant to seek help and work through illness rather than taking time off work, this “presenteeism”⁵² in turn takes a toll on the doctor’s own mental health. Since 1987, research has shown levels of mental and emotional distress is higher amongst doctors and other medical professionals than the general population.⁴¹⁻⁴³ Since her original study, Frith-Cozens argues that levels of stress amongst doctors and medical professionals have stayed constant with above threshold levels of stress being reported by 28% of doctors studied compared to 18% in the rest of the working population.⁴⁴ The reasons given for this are many including; individual causes such as personality or being particularly self-critical, having unsupportive early family relationships; lack of sleep, poor communication and poor teamwork.⁴⁴ It has also been found that shift work, which is compulsory for many doctors leads to poor sleep and a poor diet which eventually takes a physical and mental toll on doctors.⁴³ Medicine is a competitive, humiliating and status conscious work culture,⁴³ which encourages self-criticism⁴⁵ which has been found to lead to depression and low mood.⁴⁵ Added to this, the recent blame culture and litigious nature of society today, doctors are likely to feel increased pressure to not make mistakes.⁵³ Doctors may also fear the publicity that can follow a medical mistakes as well as the threat of litigation.⁴⁴

However other studies have found that work related factors do not explain a large part of the variation in depression among doctors⁵⁴ and it has been suggested that personality factors are more important, specifically regulation of self-esteem.⁵⁵ An additional possibility for doctors routinely scoring high on measures of mental and emotional distress is a comfort with diagnostic labels. As these measures are self-reported, they only measure the individual’s perceptions of how they feel and so lay people who are less familiar with the language may choose a lower score, shying away from diagnostic labels. Some support for this explanation comes from Vaglum and Falkum⁵⁰ who found psychiatrists self-reported more depressive symptoms than other doctors.

The career long self-reflection which is now encouraged by the General Medical Council,⁵⁶ may also be contributing to the high BSI scores found in the doctors in this study. Although self-reflection was introduced in an attempt to make more reflective practitioners and to ultimately improve patient care,⁴⁵ an unexpected consequence may be doctors that are more likely to experience self-doubt and depression. For example other studies have found that self-criticism (of which self-reflection is one form) is related to an increase in depressive symptoms^{53,57}.

Participation in this study was not compulsory and the participants who did choose to participate were self-selecting. One unverifiable possibility for the high BSI scores is that participants who felt unhappy with their work or were experiencing a particularly high level of stress, chose to participate as a way of expressing this distress. Self-selecting participants are often not representative of the whole population and can create a biased sample as such, it is possible that the participants in this study were the more emotionally distressed members of the FFLM or simply that this finding provides more support for medical professionals generally scoring in line with clinical populations on this scale.

PBJW was the best predictor of psychological wellbeing of the medical professionals included in this study followed by coping mechanisms and resilience. However these did not explain three quarters of variance and the other factors we had hypothesised would be important (gender, years of experience and qualifications) were not significant in explaining the psychological distress of the practitioners included in this study.

The present research has several limitations. This was a one off self-reported survey of members of the Faculty of Forensic and Legal Medicine which may be a source of bias in terms of those who choose to respond, they may have different experiences of psychological distress to those who did not. The self-selection of participants may also mean that the sample is not representative of forensic medical practitioners and only about twelve percent of the FFLM took part. Finally although the anonymous nature of the online survey should have reduced social desirability it is possible there was some socially desirable responding given the high status and competitive nature of the medical profession.

Future research should focus on identifying other factors that predict distress amongst forensic medical practitioners. It would also be valuable to obtain larger and more diverse samples of

forensic medical practitioners. Longitudinal and intervention studies that evaluate the continuity of psychological distress and effectiveness of strategies to combat it would also be beneficial. The possible benefits of reducing psychological distress amongst forensic medical practitioners would not only assist with reducing burn-out and mental health issues for the practitioners themselves, but should have knock on improvements in terms of the patient care they are able to provide.

Conclusions

Although this is only a preliminary study, findings suggest the personal belief in a just world, coping strategies and resilience are useful predictors of psychological distress amongst forensic medical practitioners. However they did not predict the majority of the variance so more detailed investigations are needed to identify which other factors are important in order to design interventions and support for members of the Faculty of Forensic and Legal Medicine and other forensic medical practitioners.

Acknowledgements

The authors would like to thank the Faculty of Forensic and Legal Medicine for their funding and ongoing support for this research.

Consent

Informed consent was obtained from each of the participants before they completed the online survey. A copy of the informed consent is available for review by the Editor-in-Chief of this journal.

Conflict of interests

The authors declare that they have no competing interests.

Funding

Funding for this research was provided by the Faculty of Forensic and Legal Medicine. The funders only involvement in the study was to forward the recruitment email to its members on behalf of the researchers.

Ethical Approval

Approval for this study was granted by the Department of Psychology Ethics Committee at Middlesex University.

References

1. Brown J Campbell E. *Stress and Policing: Sources and Strategies*. Chichester, UK: Wiley; 1995.
2. Adler A Litz B Castro C Suvak M Thomas J Burrell L McGurk Wright K Bliese P. A Group Randomized Trial of Critical Incident Stress Debriefing Provided to U.S. Peacekeepers. *J. Trauma. Stress*. 2008; 21: 253–26.
3. Deahl M Srinivasan M Jones N Thomas J Neblett C Jolly A. Preventing psychological trauma in soldiers: the role of operational stress training and psychological debriefing. *Br J Med Psychol*. 2000; 73: 77-85.
4. Becker C Meyer G Price J Graham M Arseno A Armstrong D Ramon E. Law enforcement preferences for PTSD treatment and crisis management alternatives. *Behav Res Ther.* 2009; 47: 245–253.
5. Chae M Boyle D. Police suicide: prevalence, risk, and protective factors. *Policing: An International Journal of Police Strategies & Management*. 2013; 36: 91-118.
6. Tuckey M Hayward R. Global and Occupation-Specific Emotional Resources as Buffers against the Emotional Demands of Fire-Fighting. *Appl. Psychol*. 2011; 60: 1–23.
7. Martin PY. *Rape Work: Victims, Gender and Emotions in Organization and Community Context*. New York, NY: Routledge; 2005.
8. Collins S. Social workers, resilience, positive emotions and optimism. *Practice: Social Work in Action*. 2007; 19: 255-269.
9. Taylor SE. How psychosocial resources enhance health and well-being. In: Donaldson SI, Csikszentmihalyi M Nakamura J eds. *Applied Positive Psychology: Improving Everyday Life, Health, Schools, Work, and Society*. East Sussex, UK: Routledge; 2011: 65-78.
10. Henman LD. Humor as a coping mechanism: Lessons from POW's. *International Journal of Humor Research*. 2008; 14: 83-94.
11. McCrae RR. Age Differences and Changes in the Use of Coping Mechanisms. *Journal of Gerontology: Psychological Sciences*. 1989; 44: 161-169.
12. McCrae RR Costa PT Jr. Psychological resilience among widowed men and women: A 10-year follow up of a national survey. *J Soc Issues*. 1988; 44: 129-142.
13. Folkman S Moskowitz JT. Coping: Pitfalls and Promise. *Annu Rev Psychol*. 2004; 55: 745-774.
14. Block JH Block J. The role of ego-control and ego-resiliency in the origination of behavior. In: Collings WA ed. *The Minnesota Symposia on Child Psychology*. 13. Hillsdale, NJ: Erlbaum; 1980: 39–101.
15. Block J Kremen A. IQ and ego resiliency: Conceptual and empirical connections and separateness. *J Pers Soc Psychol*. 1996; 70: 349–61.

16. Lazarus RS. From psychological stress to the emotions: A history of changing outlooks *Annu Rev Psychol.* 1993; 44: 1–21.
17. Klohen E. Conceptual analysis and measurement of the construct of ego resiliency. *J Pers Soc Psychol.* 1996; 70: 1067–79.
18. Major B Richards C Cooper L Cozzarelli C Zubek J. Personal resilience, cognitive appraisals and coping: An integrative model. *J Pers Soc Psychol.* 1998; 74: 735–52.
19. Salovey P Bedell BT Detweiler JB Mayer JD. Coping intelligently: Emotional intelligence and the coping process. In: Snyder CR ed. *Coping: The psychology of what works.* New York: Oxford University Press; 1999: 141-164.
20. Watson P Ritchie E Demer J Bartone P Pfefferbaum B. Improving resilience trajectories following mass violence and disasters. In: Richie E Watson P Friedman M eds. *Interventions following mass violence and disasters.* New York: Guildford; 2006: 37-53.
21. Luthar S Cicchetti D. The construct of resilience: Implications for interventions and social policies. *Dev Psychopathol.* 2000; 12: 857–85.
22. Gabriel AS Dieffendorf JM Erickson RJ. The relations of daily task accomplishment satisfaction with changes in affect: a multilevel study in nurses. *J Appl Psychol.* 2001; 96: 1095-1104.
23. Sen S Kranzler HR Krystal JH Speller H Chan G Gelernter J Guille C. A prospective cohort study investigating factors associated with depression during medical internship. *Arch Gen Psychiat.* 2010; 67: 557-565.
24. Stevens G Jones A Smith G Nelson J Agho K Taylor M Raphael B. Determinants of paramedic response readiness for CBRNE threats. *Biosecurity and Bioterroriam Biodefense Strategy, Practice and Science.* 2010; 8: 193-202.
25. Lerner MJ. *The belief in a just world: A fundamental delusion.* New York: Plenum Press; 1980.
26. Bulman RJ Wortman CB. Attributions of blame and coping in the "real world": Severe accident victims react to their lot. *J Pers Soc Psychol.* 1977; 35: 351-363.
27. Furnham A. Belief in a just world: Research progress over the past decade. *Pers Individ Differ.* 2003; 34: 795–817.
28. Hafer CL Begue L. Experiential Research on Just-World Theory: Problems, Developments, and Future Challenges. *Psychol Bull.* 2005; 131-1: 128-167.
29. Dalbert C. *The justice motive as a personal resource: Dealing with challenges and critical life events.* New York: Plenum Publishers; 2001.
30. Dzuka J Dalbert C Student violence against teachers: Teachers' well-being and the belief in a just world. *Eur Psychol.* 2007; 12: 253–260.

31. Otto K Boos A Dalbert C Schöps D Hoyer J. Posttraumatic symptoms, depression, and anxiety of flood victims: The impact of the belief in a just world. *Pers Individ Differ.* 2006; 40: 1075–1084.
32. Dalbert C. The world is more just for me than generally: About the Personal Belief in a Just World Scale's validity. *Soc Justice Res.* 1999; 12: 79-98.
33. Lipkus I Dalbert C Siegler I. The importance of distinguishing the belief in a just world for self versus for others: Implications for psychological well-being. *Pers Soc Psychol B.* 1996; 22: 666–677.
34. Derogatis LR. *Brief symptom inventory (BSI), administration, scoring, and procedures manual* (Third edition). Minneapolis: National Computer Services; 1993.
35. Dalbert C Montada L Schmitt M. Glaube an eine gerechte Welt als Motiv: Validierungskorrelate zweier Skalen (Belief in a just world as motive: Validity correlates of two scales). *Psychol Beitr.* 1987; 29: 596-615.
36. Stromwall LA. Rape victim and perpetrator blame and the Just World hypothesis: The influence of victim gender and age. *J. Sex. Aggress.* 2013; 19: 207-217.
37. Otto K Glaser D Dalbert C. Mental Health, Occupational Trust, and Quality of Working Life: Does Belief in a Just World Matter? *J. Appl. Soc. Psychol.* 39: 1288-1315.
38. Connor KM Davidson JRT. Development of a new resilience scale: the Connor-Davidson Resilience Scale (CD-RISC). *Depress Anxiety.* 2003; 18: 71-82.
39. Carver CS. You want to measure coping but your protocol's too long: Consider the Brief COPE. *Int J Behav Med.* 1997; 4: 92-100.
40. Laff RE. *Depression and resilience during the first six months of internship.* A thesis submitted to the Yale University School of Medicine; 2008.
41. Caplan RP. Stress, anxiety, and depression in hospital consultants, general practitioners, and senior health service managers. *Bmj Brit Med J.* 1994; 309: 1261–1263.
42. Firth-Cozens J. Emotional distress in junior house officers. *Bmj Brit Med J.* 1987; 295: 533–536.
43. Firth-Cozens, J., 1997. Depression in doctors. In: Robertson M Katona C, eds. *Depression and Physical Illness.* Wiley: London; 1997; 95–109.
44. Firth-Cozens J. Doctors, their wellbeing, and their stress. *Bmj Brit Med J.* 2003; 326: 670-671.
45. Driessen E van Tartwijk J Dornan T. The self critical doctor: helping students become more reflective. *Bmj Brit Med J.* 2008; 336: 827-836.
46. Anonymous. Alcohol-dependent doctors [Editorial]. *Bmj Brit Med J.* 1979; 2: 351.
47. Murray RM. Alcoholism amongst Male Doctors in Scotland. *Lancet.* 1976; 2: 729-731.
48. The Royal College of Practitioners. *Alcohol – A Balanced View.* 1986.
49. Ritter C Benson DE Snyder C. Belief in a just world and depression. *Social Perspect.* 1990; 25: 235–252.

50. Vaglum P Falkum E. Self-criticism, dependency and depressive symptoms in a nationwide sample of Norwegian physicians. *J Affect Disorders*. 1999; 52: 153 –159.
51. Meerten M Bland J Gross SR Garelick AI. Doctors' experience of a bespoke physician consultation service: cross-sectional investigation. *The Psychiatrist*. 2011; 35: 206-212.
52. Tyssen R. Health problems and the use of health services among physicians: a review article with particular emphasis on Norwegian studies. *Ind Health*. 2007; 45: 599-610.
53. Blatt SJ Zuroff DC. Interpersonal relatedness and self-definition: two prototypes for depression. *Clin Psychol Rev*. 1992; 12: 527-62.
54. Heyworth J, Whitley TW, Allison EJ, Revicki, DA. Correlates of work-related stress among consultants and senior registrars in accident and emergency medicine. *Arch Emerg Med*. 1993; 10: 271–8.
55. Brewin CR Firth-Cozens J. Dependency and self-criticism as predictors of depression in young doctors. *Occupational Health Psychology*. 1997; 2: 242–246.
56. General Medical Council. *Revalidating doctors: ensuring standards, securing the future*. London: GMC; 2000.
57. Haaga DAF Dyck MJ Ernst D. Empirical status of cognitive theory of depression. *Psychol. Bull*. 1991; 110: 215–236.