# Evidence Search Service Results of your search request:

## “1. What factors place health professionals/frontline workers at higher risk of psychological harm (modifiable and non-modifiable)?”

**ID of request:** 25162; **Date of request:** 18th September, 2020; **Date of completion:** 18th September, 2020

If you would like to request any articles or any further help, please contact:  Adam Tocock at [adam.tocock@nhs.net](mailto:adam.tocock@nhs.net)

Please acknowledge this work in any resulting paper or presentation as: Evidence search: 1. What factors place health professionals/frontline workers at higher risk of psychological harm (modifiable and non-modifiable)?. Adam Tocock. (18th September, 2020). LONDON, UK: Barts Health Knowledge and Library Services.

**Date range used** (5 years, 10 years): 2000-   
**Limits used** (gender, article/study type, etc.): Reviews only, English language only.   
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### [B. Search History](#SearchHistory)

## A. Review Articles

1. **Burnout and Self Care for Palliative Care Practitioners.**  
   Horn David J. The Medical clinics of North America 2020;104(3):561-572.

Burnout is common in physicians who care for patients with serious illness, with rates greater than 60% in some studies. Risk factors for burnout include working on small teams and/or in small organizations, working longer hours and weekends, being younger than 50 years, burdensome documentation requirements, and regulatory issues. Personal factors that can protect against burnout include mindfulness, exercise, healthy sleep patterns, avoiding substance abuse, and having adequate leisure time. Institutional and work factors that can buffer against burnout include working on adequately staffed teams, having a manageable workload, and minimally burdensome electronic health record documentation.

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1. **Burnout and Wellness: The Anesthesiologist's Perspective**  
   Romito B.T. American Journal of Lifestyle Medicine 2020;:No page numbers.

Burnout syndrome results from unmanaged chronic workplace stress. It is characterized by emotional exhaustion, lack of a sense of personal accomplishment, and depersonalization. Burnout is associated with the development of poor work-related outcomes, mental health disorders, substance abuse, and cardiovascular disease. Burnout in physicians and other health care providers can negatively affect patient care. The prevalence of burnout in anesthesiology is among the highest of all medical specialties, with rates approaching 40%. Unique risk factors for the development of burnout in anesthesiologists may include environmental social isolation, long work hours, lack of control over one's career, and the presence of certain personality traits that select for a career in anesthesia. System-based interventions targeting workplace contributions to burnout and individual resilience and mindfulness training can be helpful in reducing burnout symptoms. Future research efforts examining both the health care environmental structure and the specific burnout risk factors for anesthesiologists will help produce targeted treatment strategies for members of the anesthesiology community.<br/>Copyright &#xa9; 2020 The Author(s).

1. **Burnout in nursing managers: A systematic review and meta-analysis of related factors, levels and prevalence**  
   Membrive-Jimenez M.J. International Journal of Environmental Research and Public Health 2020;17(11):1-10.

Burnout syndrome is a major problem in occupational health, which also affects nursing managers. The main aim was to analyze the level, prevalence and risk factors of burnout among nursing managers. A systematic review with meta-analysis was conducted. The databases used were Medline (Pubmed), PsycINFO, CINAHL, LILACS, Scielo and Scopus. The search equation was "burnout AND nurs\* AND (health manager OR case managers)". Nursing managers present high levels of emotional exhaustion and a high degree of depersonalization. Some studies show that variables like age, gender, marital status, having children or mobbing and other occupational factors are related with burnout. The prevalence estimation of emotional exhaustion with the meta-analysis was high; 29% (95% CI = 9-56) with a sample of n = 780 nursing managers. The meta-analytical estimation of the correlation between burnout and age was r = -0.07 (95% CI = -0.23-0.08). Work overload, the need to mediate personnel conflicts, lack of time and support from superior staff, contribute to the development of burnout among nursing managers.<br/>Copyright &#xa9; 2020 by the authors. Licensee MDPI, Basel, Switzerland.

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1. **Burnout Syndrome in Paediatric Oncology Nurses: A Systematic Review and Meta-Analysis.**  
   De la Fuente-Solana Emilia Inmaculada Healthcare (Basel, Switzerland) 2020;8(3):No page numbers.

Purpose: To determine levels of burnout among paediatric oncology nurses, and the risk factors that may influence its development. Method: A literature review with meta-analysis was conducted, via a search in the PubMed, CINHAL, Scopus, ProQuest (Health and Medical Complete), Scielo and PsycINFO databases, using the search equation: "Nurs\* AND burnout AND oncology AND pediatric". Results: The final sample of selected studies was of eight articles. All were quantitative studies of paediatric oncology nurses, using the Maslach Burnout Inventory, written in English or Spanish. No search restrictions were established on the year of publication. The eight studies reported moderate-high levels of burnout in each of its three dimensions. These dimensions were all related to the characteristics of the profession, in terms of complexity, shifts and workload, and to sociodemographic variables such as marital status, work experience, age and gender. The prevalence meta-analytical estimation for a sample of n = 361 nurses were 37% for high emotional exhaustion, 16% for high depersonalisation and 27% for low personal fulfilment. Conclusions: Most paediatric oncology nurses present moderate-high levels of burnout. Therefore, strategies and interventions should be identified and implemented to protect these workers from the syndrome.

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1. **Causes and consequences of burnout among mental health professionals: A practice-oriented review of recent empirical literature**  
   Yang Ying Psychotherapy 2020;57(3):426-436.

Burnout is a psychological syndrome characterized by emotional exhaustion, depersonalization, and a reduced sense of personal accomplishment. Due to the demands of treating people with psychological problems, burnout is prevalent among psychotherapists. In this article, we present a comprehensive review of 44 quantitative and qualitative studies from the past decade focusing on both the risk factors for, and effects of, burnout among psychotherapists. Factors influencing burnout include perceived job control, the nature of psychotherapists’ caseload, countertransference reactions, supervisory support, and psychotherapists’ mental health history. Burnout affects psychotherapists’ general well-being, as well as the extent to which clients engage in and benefit from psychotherapy. Implications for psychotherapists and their supervisors for burnout prevention and intervention are discussed, and recommendations for further research in this area are identified. (PsycInfo Database Record (c) 2020 APA, all rights reserved) (Source: journal abstract) Impact statementClinical Impact Statement: Question: What does research from the past decade reveal about the prevalence, predictors, and consequences of burnout among mental health professionals? Findings: A review of 44 studies found that factors related to therapists’ workplaces, clients, and personal characteristics can affect their physical and psychological well-being, as well as client outcomes. Meaning: This information can be used to help prevent and treat burnout among psychotherapists. Next Steps: Research is needed to evaluate programs designed to prevent and minimize burnout among psychotherapists. (PsycInfo Database Record (c) 2020 APA, all rights reserved)

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1. **Factors associated with burnout syndrome in surgeons: a systematic review.**  
   Galaiya R. Annals of the Royal College of Surgeons of England 2020;102(6):401-407.

INTRODUCTIONTo date, studies have shown a high prevalence of burnout in surgeons. Various factors have been found to be associated with burnout, and it has significant consequences personally and systemically. Junior doctors are increasingly placing their own health and wellbeing as the most important factor in their decisions about training. Finding ways to reduce and prevent burnout is imperative to promote surgical specialties as attractive training pathways.METHODSThe MEDLINE, PsychInfo and EMBASE databases were searched using the subject headings related to surgery and burnout. All full text articles that reported data related to burnout were eligible for inclusion. Articles which did not use the Maslach Burnout Inventory or included non-surgical groups were excluded; 62 articles fulfilled the criteria for inclusion.FINDINGSYounger age and female sex tended to be associated with higher levels of burnout. Those further in training had lower levels of burnout, while residents suffered more than their seniors. Burnout is associated with a lower personal quality of life, depression and alcohol misuse. Academic work and emotional intelligence may be protective of burnout. Certain personality types are less likely to be burnt out. Mentorship may reduce levels of burnout.CONCLUSIONSWorkload and work environment are areas that could be looked at to reduce job demands that lead to burnout. Intervening in certain psychological factors such as emotional intelligence, resilience and mindfulness may help to reduce burnout. Promoting physical and mental health is important in alleviating burnout, and these factors likely have a complex interplay.

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1. **Impact of social support in preventing burnout syndrome in nurses: A systematic review.**  
   Velando-Soriano Almudena Japan journal of nursing science : JJNS 2020;17(1):e12269.

AIMBurnout is a reality in the nursing profession. It is composed of three dimensions: emotional exhaustion, depersonalization and reduced personal accomplishment, and results from being subjected to chronic stress in the healthcare context. Social support (SS), that is, the assistance and protection given by others, is a predictive and protective factor against burnout syndrome. The aim of this study is to analyze the relationship between SS, in its different forms, and burnout syndrome in nurses, and to identify the risk factors for burnout.METHODSA systematic literature review was carried out, following the PRISMA recommendations. The databases CINAHL, PsycINFO, Proquest Platform (Proquest Health & Medical Complete), Pubmed and Scopus were consulted, using the descriptors: "burnout, professional AND social support AND nursing". To minimize potential publication bias, the search had no time or sample size limitation.RESULTSBurnout was reported, to a greater or lesser extent, in all the articles analyzed, and the SS received by nurses in the workplace from supervisors and coworkers was found to play a fundamental role in preventing the syndrome. However, to date the bibliography on this issue is scant, and there is little consensus as to the degree of SS received.CONCLUSIONSBurnout prevention plans, with particular attention to SS, should be developed to improve nurses' quality of life and to enhance the care they provide.

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1. **Occurrence, prevention, and management of the psychological effects of emerging virus outbreaks on healthcare workers: rapid review and meta-analysis.**  
   Kisely Steve BMJ (Clinical research ed.) 2020;369:m1642.

OBJECTIVETo examine the psychological effects on clinicians of working to manage novel viral outbreaks, and successful measures to manage stress and psychological distress.DESIGNRapid review and meta-analysis.DATA SOURCESCochrane Central Register of Controlled Trials, PubMed/Medline, PsycInfo, Scopus, Web of Science, Embase, and Google Scholar, searched up to late March 2020.ELIGIBILITY CRITERIA FOR STUDY SELECTIONAny study that described the psychological reactions of healthcare staff working with patients in an outbreak of any emerging virus in any clinical setting, irrespective of any comparison with other clinicians or the general population.RESULTS59 papers met the inclusion criteria: 37 were of severe acute respiratory syndrome (SARS), eight of coronavirus disease 2019 (covid-19), seven of Middle East respiratory syndrome (MERS), three each of Ebola virus disease and influenza A virus subtype H1N1, and one of influenza A virus subtype H7N9. Of the 38 studies that compared psychological outcomes of healthcare workers in direct contact with affected patients, 25 contained data that could be combined in a pairwise meta-analysis comparing healthcare workers at high and low risk of exposure. Compared with lower risk controls, staff in contact with affected patients had greater levels of both acute or post-traumatic stress (odds ratio 1.71, 95% confidence interval 1.28 to 2.29) and psychological distress (1.74, 1.50 to 2.03), with similar results for continuous outcomes. These findings were the same as in the other studies not included in the meta-analysis. Risk factors for psychological distress included being younger, being more junior, being the parents of dependent children, or having an infected family member. Longer quarantine, lack of practical support, and stigma also contributed. Clear communication, access to adequate personal protection, adequate rest, and both practical and psychological support were associated with reduced morbidity.CONCLUSIONSEffective interventions are available to help mitigate the psychological distress experienced by staff caring for patients in an emerging disease outbreak. These interventions were similar despite the wide range of settings and types of outbreaks covered in this review, and thus could be applicable to the current covid-19 outbreak.

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1. **Physician Burnout: Achieving Wellness for Providers and Patients.**  
   Niconchuk Jonathan A. Current anesthesiology reports 2020;:1-6.

Purpose of ReviewThis review summarizes the history and scope of physician burnout, and explores recent advances in its understanding. With a particular focus on physicians who have completed their training, it also explores the present and future of interventions designed to alleviate the symptoms and sequelae of burnout.Recent FindingsNearly 50 years since first described, burnout continues to remain a pervasive issue within anesthesia and medicine as a whole. Recent work has continued to outline risk factors and specialty-specific prevalence, and explore individual and institutional interventions to prevent and treat symptoms.SummaryBurnout continues to impact all who work in healthcare, at all levels of training. This review highlights recent advances in our understanding of the scope, causes, and management of burnout. In light of the current COVID-19 pandemic, we hope that the national and international focus on preventing and remediating burnout will continue to expand and strengthen.

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1. **Prevalence and Factors Associated with Burnout among Healthcare Professionals in India: A Systematic Review and Meta-Analysis.**  
   Kesarwani Vartika Indian journal of psychological medicine 2020;42(2):108-115.

BackgroundWith increasing workload and dismal working conditions, healthcare professionals (HCPs) in India often suffer from burnout. Understanding the extent of these problems and the contributing factors is necessary to build a healthy workforce capable of serving the society. The purpose of this study was to systematically review and analyze: 1) the prevalence of burnout among HCPs in India and 2) the factors associated with burnout in this population.MethodsA systematic search of MEDLINE and EMBASE, from the inception of these databases to October 2019, was conducted using keywords. The search results were screened to identify studies evaluating burnout among HCPs in India using a standard burnout tool. Using a random effect model, the pooled prevalence of burnout was estimated using Maslach Burnout Inventory (MBI) in three domains: emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA). Risk factors for burnout were assessed qualitatively.ResultsA total of 15 studies assessing burnout in 3845 Indian HCPs were identified. The pooled prevalence of burnout was 24% in the EE domain, 27% in the DP domain, and 23% in the PA domain. Younger age, female gender, unmarried status, and difficult working conditions were associated with increased risk of burnout.ConclusionBurnout is highly prevalent among Indian HCPs, with close to one-fourth of them suffering from burnout. A number of personal and professional factors are associated with burnout, and these should be considered while developing solutions to tackle burnout.

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1. **Work strain and burnout risk in postgraduate trainees in general practice: an overview.**  
   Bugaj T. J Postgraduate medicine 2020;132(1):7-16.

Primary care physicians (general practitioners (GPs)) are burdened for various reasons and are particularly affected by stress-related complaints and an increasing prevalence of burnout. Thus, the prevention of physician burnout has become a major interest for health care services. Although many studies have addressed this issue in recent years, little seems to be known about the work strain and burnout rates in GP trainees. Therefore the objective of this article is to review the psychosocial burden and relevant prevention strategies for GPs with a special emphasis on GP trainees. Regardless of the specialty, burnout is more prevalent among medical trainees and so-called 'early career' physicians than among the age-matched population. Accordingly, burnout seems to be frequent among GP trainees, although there is some evidence that there are fewer doctors working in general medicine who were already heavily burdened at the time of choosing their career. The sudden assumption of responsibility in patient care as well as the fear of showing imperfection in front of their supervisors, or lack of recognition from senior doctors, the medical team, or patients might be stressors typical to this career stage. GP trainees might also feel burdened by the new level of personal involvement and thus have to develop or increase their individual level of professionality to deal with the patients' medical and personal problems. In conclusion, interventions to promote physical and mental health of GP trainees are a necessity to ensure passionate GPs in the future and should therefore be integrated into any postgraduate training curriculum in general practice.

1. **A Growing Epidemic: Plastic Surgeons and Burnout-A Literature Review.**  
   Khansa Ibrahim Plastic and reconstructive surgery 2019;144(2):298e.

BACKGROUNDThe prevalence of burnout is increasing among all physicians, including plastic surgeons. Burnout is not simply synonymous with being overworked. It is a complex physical, intellectual, and psychological entity that arises when the expectation and reality of the job do not match. In this article, the authors' goal is to define burnout, summarize its causes and consequences, and offer the plastic surgeons methods to prevent and address it.METHODSA literature search of articles on burnout in medicine was performed. Articles that were relevant were selected, and were qualitatively analyzed to answer our questions on the definition, prevalence, causes, consequences, and treatments of burnout.RESULTSSixty-five relevant articles were included. The prevalence of burnout among physicians ranges between 29 and 55 percent. Risk factors for physician burnout include increased workload and call, junior academic rank, and fair physician health. There is significant overlap among burnout, depression, and substance abuse, and suicide is much more common among physicians than among the general population. Preventing burnout involves a multiprong approach that addresses the physical, intellectual, and psychological dimensions of the physician.CONCLUSIONSIn this article, concrete steps to prevent and address burnout are presented to plastic surgeons. For physicians, the most important elements for burnout avoidance are the prevention of emotional exhaustion, and the development of professional autonomy and control.

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1. **A review of the factors related to burnout at the early-career stage of medicine.**  
   Hariharan Thripura Samyuktha Medical teacher 2019;41(12):1380-1391.

Background: Globally, burnout is an increasingly prevalent problem amongst young medical professionals. This review aims to understand the factors related to burnout in the early-career stage of medicine. Drawing on the widely used Job Demands-Resources Model, the antecedents of burnout were distinguished from its outcomes.Methods: The review adopted the PRISMA guidelines. Using specific search terms, peer-reviewed articles were obtained from a range of databases and assessed against selection criteria. To meet inclusion requirements, the study had to be published between 2000 and 2018, include a validated measure of burnout, and undertake empirical assessment of factors related to burnout in medical students and/or junior medical officers/residents. Additional studies were obtained and reviewed from the reference lists of selected articles.Results: Out of the 3796 studies that were initially found, 585 were assessed against the eligibility criteria leaving 113 studies for review. These studies highlighted the negative consequences of burnout in the early medical career. Also identified were work-specific and person-specific demands that likely lead to burnout and, work and person resources that appear to reduce burnout.Conclusion: This review provides a framework to explain the growing problem of burnout amongst early-career medical professionals. However, further research is necessary to overcome the current reliance on cross-sectional designs and small sample sizes.

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1. **A systematic review and meta-analysis of the prevalence and associations of stress and burnout among staff in long-term care facilities for people with dementia.**  
   Costello Harry International psychogeriatrics 2019;31(8):1203-1216.

BACKGROUNDCare home staff stress and burnout may be related to high turnover and associated with poorer quality care. We systematically reviewed and meta-analyzed studies reporting stress and burnout and associated factors in staff for people living with dementia in long-term care.METHODSWe searched MEDLINE, PsycINFO, Web of Science databases, and CINAHL database from January 2009 to August 2017. Two raters independently rated study validity using standardized criteria. We meta-analyzed burnout scores across comparable studies using a random effects model.RESULTS17/2854 identified studies met inclusion criteria. Eight of the nine studies reporting mean Maslach Burnout Inventory (MBI) scores found low or moderate burnout levels. Meta-analysis of four studies using the 22-item MBI (n = 598) found moderate emotional exhaustion levels (mean 18.34, 95% Confidence Intervals 14.59-22.10), low depersonalization (6.29, 2.39-10.19), and moderate personal accomplishment (33.29, 20.13-46.46). All three studies examining mental health-related quality of life reported lower levels in carer age and sex matched populations. Staff factors associated with higher burnout and stress included: lower job satisfaction, lower perceived adequacy of staffing levels, poor care home environment, feeling unsupported, rating home leadership as poor and caring for residents exhibiting agitated behavior. There was preliminary evidence that speaking English as a first language and working shifts were associated with lower burnout levels.CONCLUSIONSMost care staff for long-term care residents with dementia experience low or moderate burnout levels. Prospective studies of care staff burnout and stress are required to clarify its relationship to staff turnover and potentially modifiable risk factors.

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1. **Awareness of secondary traumatic stress in emergency nursing.**  
   Barleycorn Donna Emergency nurse : the journal of the RCN Accident and Emergency Nursing Association 2019;27(5):19-22.

This article explores secondary traumatic stress (STS) and the emotional challenges that emergency nurses face when dealing with traumatised patients. The few studies on STS have shown a higher occurrence of STS symptoms in emergency nurses but provide limited evidence on how personal experiences may contribute to STS. Risk factors identified include repeated exposure to trauma; morbidity and mortality; personal trauma; chronic stressors; workload and emergency department pressures. STS can lead to reduced job satisfaction, sick leave and burnout. Protective factors include awareness and self-care, emotional intelligence, social support and education about STS. Strategies to minimise STS include balancing personal and professional life and the support of employers to help reduce compassion fatigue and aid staff retention.

1. **Burnout among specialists and trainees in physical medicine and rehabilitation: A systematic review.**  
   Bateman Emma A. Journal of rehabilitation medicine 2019;51(11):869-874.

OBJECTIVEBurnout, a state of emotional exhaustion related to work or patient-care activities, is prevalent in all stages of medical training and clinical practice. The syndrome has serious consequences, including medical errors, poorer quality of care, substance abuse, and suicide. The aim of this study is to evaluate the prevalence of burnout in Physical Medicine and Rehabilitation (PMandR) specialists and trainees.METHODSSystematic literature searches were conducted in MEDLINE, CINAHL and EMBASE for peer-reviewed articles in English before March 2019 about the prevalence of burnout amongst PMandR specialists and trainees.RESULTSThis systematic review yielded 359 results. Of these, 33 full-text records were reviewed; 5 met the inclusion criteria: 3 surveys of PMandR specialists and 2 of PMandR residents (total n?=?1,886 physicians; year of publication 20122019). Data extracted included prevalence and severity of burnout and, if available, risk or protective factors. Data were analysed using descriptive statistics. Incidence of burnout ranged from 22.2% to 83.3% in trainees and 48% to 62% in specialists. Organizational and system challenges were the primary risk factors for burnout amongst specialists.CONCLUSIONEmerging evidence positions physicians in PMandR among the most likely to experience burnout. Although there is limited literature regarding PMandR specialists and trainees, the available evidence suggests that more than half of physicians in PMandR experience burnout.

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1. **Burnout in French physicians: A systematic review and meta-analysis.**  
   Kansoun Ziad Journal of affective disorders 2019;246:132-147.

BACKGROUNDBurnout syndrome is the consequence of chronic work-related stress exposure and is 2-3 times higher than in physicians than in other professions. Many studies exploring burnout in French physicians have been published with inconsistent data regarding its prevalence and associated factors.OBJECTIVETo assess the prevalence of burnout and associated factors in French physicians in a systematic review and meta-analysis.MATERIAL AND METHODSStudies assessing the prevalence of French physician's burnout and its three dimensions emotional exhaustion (EE), depersonalization (DP) and personal accomplishment (PA) were selected in the following databases from 2000 to April 2017: MEDLINE, BIOSIS WEB OF SCIENCE, PASCAL ET FRANCIS, SCIENCES DIRECT, PSYCHinfo, and BDSP. Burnout was defined by one abnormal score in one or more of the 3 dimensions of the MBI scale (EE, DP or PA). Severe burnout was defined by the association of high scores of EE and DP, and low score of PA. High EE was defined by an EE score ≥27. High DP was defined by a score ≥10. Low PA was defined by a score ≤33.RESULTSA total of 37 studies and 15,183 French physicians were included in the present meta-analysis. The random effects pooled prevalence estimate was 49% (95% CI 45%-53%, P < 0.001, I2 = 93.1%) for burnout, 5% (95% CI 4-7, P < 0.001, I2 = 92.7%) for severe burnout, 21% (95% CI 19-24, P < 0.001, I2 = 94.7%) for high EE, 29% (95% CI 25-33, P < 0.001, I2 = 96.7%) for high DP, and 29% (95% CI 24-34, P < 0.001, I2 = 97.7%) for low PA. Emergency physicians were found to have a trend to higher rates of burnout (P = 0.051), and significantly more severe burnout compared to other physicians (b = 0.05, se[b] = 0.02, P = 0.019). Junior residents were found to have higher rates of DP; junior residents, sample size, and monthly number of night shifts were associated with lower PA; and anesthesiologists were found to have lower rates of high EE and high DP.CONCLUSIONBurnout is highly prevalent in French physicians. Some recommendations may be suggested to reduce this rate, including reducing the number or duration of night shifts to increase personal accomplishment and targeting emergency physicians and junior residents in priority. Other specialties should be explored in future studies.

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1. **Burnout in OB/GYN Students and Residents.**  
   RIGBY Clinical Obstetrics & Gynecology 2019;62(3):413-431.

In this article we address the concept of burnout, first in the medical student setting, and then in the residency setting. We will review the prevalence followed by a discussion of risk factors, consequences, and finally thoughts on prevention and intervention.

1. **Burnout in Oncology.**  
   Copur Mehmet Sitki Oncology (Williston Park, N.Y.) 2019;33(11):No page numbers.

Burnout is defined as an occupational-related syndrome characterized by physical and emotional exhaustion, cynicism/depersonalization, and low sense of professional accomplishment. Multiple oncology-specific risk factors are associated with an increased susceptibility for the development of burnout. On a daily basis, oncologists are faced with life and death decisions and grieving much more frequently than are physicians in other specialties. Continuous exposure to fatal illnesses with limited success in curing them, exceedingly long work hours with more administrative time demands, limited autonomy over daily responsibilities, endless electronic documentation requirements, and a shifting medical landscape seem to be making oncologists more vulnerable to suffering from burnout. Evidence suggests that burnout can impact quality of care in a variety of ways and have potentially profound personal implications. In this review, the definition, prevalence, causes, and management of oncologist burnout are analyzed. Steps oncologists can take to promote personal well-being and professional satisfaction are also explored.

1. **Burnout in orthopaedic surgeons: A systematic review**  
   Hui R.W.H. Journal of Clinical Orthopaedics and Trauma 2019;10:No page numbers.

Occupational burnout is a syndrome composing of emotional exhaustion, depersonalisation and low sense of personal accomplishment. Burnout has been shown to negatively affect both the personal lives and professional performance of doctors. Orthopaedic surgery is a challenging specialty, and while burnout has been studied in orthopaedic surgeons, a comprehensive review article in this area is lacking. Hence we performed a systematic review to summarise the evidence regarding burnout in orthopaedic surgeons. We conducted a systematic literature review using the terms "orthopaedic surgeons" and "burnout" and related terms. Studies were reviewed by two independent reviewers. English articles that were (a) peer-reviewed original research articles; (b) measures burnout directly in study participants; (c) uses validated scales for burnout assessment; and (d) on orthopaedic surgeons, were included. Discrepancies between reviewers were resolved by panel discussion. 216 papers were identified and 14 papers were selected for qualitative synthesis. The prevalence of burnout varied considerably between orthopaedic surgeons from different centres and of different seniority. There is insufficient evidence to suggest that the burnout rate in orthopaedic surgeons is different from doctors in other specialties. A range of risk factors and protective factors associated with burnout were identified. Similar to prior studies in the general medical population, key determinants of burnout included personal, family, working environment and career factors. One paper identified an association between burnout and irritable behaviour during operation, yet no studies have assessed the effect of burnout on orthopaedic patient outcomes. We did not identify papers on the management of burnout in orthopaedic surgeons. To conclude, the evidence on burnout in orthopaedic surgeons is preliminary and key methodological limitations have been noted in the current studies. Large-scale prospective studies are warranted to better understand the determinants and effects of burnout in orthopaedic surgeons, in order to guide appropriate interventions against this occupational mental health hazard.<br/>Copyright &#xa9; 2019 Delhi Orthopedic Association

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1. **Burnout, Wellness, and Resilience in Anesthesiology.**  
   Answine Joseph F. International anesthesiology clinics 2019;57(3):138-145.

1. **Prevalence of burnout in mental health nurses and related factors: a systematic review and meta-analysis.**  
   López-López Isabel María International journal of mental health nursing 2019;28(5):1032-1041.

The aim of this study was to determine the prevalence of burnout in mental health nurses and to identify its predictors. A systematic review was conducted of studies published in the following databases: CINAHL, Dialnet, LILACS, ProQuest, PsycINFO, PubMed, SciELO, and Scopus. The search equation used was "Nurs \* AND Burnout AND mental health". Subsequently, three fixed-effects meta-analyses were performed, one for each dimension of burnout, to calculate its prevalence and the corresponding confidence intervals. The data were analysed using StatsDirect meta-analysis software. Eleven studies were finally included (n = 11). In most cases, the literature informs about moderate levels of emotional exhaustion, depersonalization, and personal accomplishment. The studies inform that variables such as work overload, work-related stress, professional seniority, male gender, being single, and aggression at work, among other factors, contribute to burnout development. The meta-analytic prevalence estimations of burnout with a sample of n = 868 mental health nurses are 25% for high emotional exhaustion, 15% for depersonalization, and 22% for low personal accomplishment. From a workforce development and safety perspective, it is important for managers to address the emotional exhaustion and low personal accomplishment aspects of burnout reported in the workplace by mental health nurses.

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1. **Prevalence, Related Factors, and Levels of Burnout Syndrome Among Nurses Working in Gynecology and Obstetrics Services: A Systematic Review and Meta-Analysis.**  
   De la Fuente-Solana Emilia I. International journal of environmental research and public health 2019;16(14):No page numbers.

BACKGROUNDAlthough burnout levels and the corresponding risk factors have been studied in many nursing services, to date no meta-analytical studies have been undertaken of obstetrics and gynecology units to examine the heterogeneity of burnout in this environment and the variables associated with it. In the present paper, we aim to determine the prevalence, levels, and related factors of burnout syndrome among nurses working in gynecology and obstetrics services.METHODSA systematic review and meta-analysis of the literature were carried out using the following sources: CINAHL (Cumulative Index of Nursing and Allied Health Literature), LILACS (Latin American and Caribbean Health Sciences Literature), Medline, ProQuest (Proquest Health and Medical Complete), SciELO (Scientific Electronic Library Online), and Scopus.RESULTSFourteen relevant studies were identified, including, for this meta-analysis, n = 464 nurses. The following prevalence values were obtained: emotional exhaustion 29% (95% CI: 11-52%), depersonalization 19% (95% CI: 6-38%), and low personal accomplishment 44% (95% CI: 18-71%). The burnout variables considered were sociodemographic (age, marital status, number of children, gender), work-related (duration of the workday, nurse-patient ratio, experience or number of miscarriages/abortions), and psychological (anxiety, stress, and verbal violence).CONCLUSIONNurses working in obstetrics and gynecology units present high levels of burnout syndrome. In over 33% of the study sample, at least two of the burnout dimensions considered are apparent.

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1. **Psychiatrist burnout: A meta-analysis of Maslach Burnout Inventory means**  
   Rotstein Sarah Australasian Psychiatry 2019;27(3):249-254.

Background: Doctors are known to have poor mental health compared with the general population. Psychiatrists are exposed to a number of unique stressors that may increase the risk of poor mental health. The aim of this study was to undertake a meta-analysis of burnout rates in psychiatrists. Methods: Electronic databases (including MEDLINE, PsycINFO and Embase) were searched. Only studies published since 1999 and using the 22-item Maslach Burnout Inventory were included in the analysis. A meta-analysis was conducted using the Comprehensive Meta-Analysis software. Results: A total of 11 studies, across nine publications, were included in the final analysis. Studies were significantly heterogenous but there was no indication of publication bias. The pooled mean for emotional exhaustion was 22.03 (95% confidence interval (CI): 19.71–24.34, tau = 3.74). For depersonalisation, the pooled mean was 7.41 (95% CI: 5.91–8.90, tau = 2.45). The pooled mean for personal accomplishment was 30.00 (95% CI: 24.75–35.27, tau = 8.87). Conclusions: The high level of psychiatrist emotional exhaustion is a significant concern. Further research is needed to consider the role of modifiable risk factors in the aetiology of psychiatrist burnout. (PsycINFO Database Record (c) 2019 APA, all rights reserved) (Source: journal abstract)

1. **Relationships between working conditions and emotional wellbeing in midwives**  
   Cramer E. Women and Birth 2019;32(6):521-532.

Background: Emotional distress in midwives contributes to high attrition. To safeguard midwives' wellbeing, there is a need to identify the impact of workplace variables. <br/>Aim(s): To review the existing evidence on the relationships between working conditions and emotional wellbeing in midwives, and construct an analytic framework for understanding these relationships. <br/>Method(s): Systematic search and selection procedures using a range of databases. Results of included studies were synthesised into a thematic literature review of qualitative and quantitative research. <br/>Finding(s): Various types of poor emotional wellbeing in midwives correlate with a variety of interrelated working conditions, including low staffing/high workload, low support from colleagues, lack of continuity of carer, challenging clinical situations and low clinical autonomy. Staffing levels seem to be able to modify the effects of many other variables, and the impact of challenging clinical situations is affected by several other variables. <br/>Discussion(s): These workplace variables can be categorised as modifiable and non-modifiable risk indicators. <br/>Conclusion(s): While certain conditions that correlate with midwives' wellbeing are non-modifiable, several crucial variables, such as staffing levels and continuity of carer, are within the control of organisational leadership. Future research and interventions should focus on these modifiable risks. Research design should maximise the chance of establishing causation, while any innovations in this area should anticipate the interrelatedness of these risk factors to avoid unintended negative consequences.<br/>Copyright &#xa9; 2018 Australian College of Midwives

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1. **Scope of Burnout Among Young Gastroenterologists and Practical Solutions from Gastroenterology and Other Disciplines.**  
   Barnes Edward L. Digestive diseases and sciences 2019;64(2):302-306.

Burnout is a critical issue among physicians, including gastroenterologists. Up to 50% of gastroenterologists have reported symptoms of burnout in national assessments, leading to increased recognition of the burden of burnout among subspecialty societies. Particularly alarming in these assessments of burnout is the suggestion of increased rates of burnout among trainees and early career gastroenterologists. In this article, we describe the scope of burnout among young gastroenterologists and the risk factors that contribute. In addition, we will offer practical solutions to reduce burnout based on insights developed from multidisciplinary approaches, including relevant burnout literature, organizational approaches within academic medical centers, and training programs, as well as interviews with successful private practice gastroenterologists, and leaders in the fields of business and education.

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1. **Systematic review of shift work and nurses' health.**  
   Rosa D. Occupational medicine (Oxford, England) 2019;69(4):237-243.

BACKGROUNDNursing is characterized by a working articulation in shifts to ensure continuity of care throughout the 24 h. However, shift work and the resulting desynchronization of circadian rhythms may have adverse effects on nurses' health.AIMSTo describe the effects of shift work and desynchronization of circadian rhythms on nurse's health.METHODSDatabases: PubMed, Cinahl, Scopus, Embase and Ilisi. Search terms (free terms, MeSH): 'nurses', 'shiftwork', 'nightwork', 'sleep disorder, circadian rhythm', 'work schedule tolerance', 'breast neoplasm', 'metabolic syndrome X', 'metabolic cardiovascular syndrome', 'Cardiovascular disease', 'stress', 'diabetes'. We included all randomized controlled trials, observational studies, reviews and papers studying nurses' shift work. Quality assessment of the retrieved papers was verified according to Dixon-Woods checklist.RESULTSTwenty-four articles were analyzed. Literature review has shown that shift work involves an alteration in psychophysical homeostasis, with a decrease in performance. It is an obstacle for social and family relationships, as well as a risk factor for stress, sleep disorders, metabolic disorders, diabetes, cardiovascular disorders and breast cancer.CONCLUSIONSAn organized ergonomic turnaround can be less detrimental to the health of nurses and more beneficial for the healthcare providers. Therefore, we suggest organizing studies to assess whether improving nurses' health would lead to a reduction in miscarriages, absenteeism and work-related stress.

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1. **The Canary in the Coal Mine: Wellness Among Pediatric Orthopedic Surgeons.**  
   Goldstein Rachel Y. The Orthopedic clinics of North America 2019;50(3):327-330.

Physician burnout is a pervasive problem affecting our workforce. More than one-third of surveyed pediatric orthopedists are experiencing symptoms of burnout. Engagement and transparency with the problem are required to support physicians throughout their career. Both personal strategies to foster resilience and systemic responses to make space for supporting physician wellness are required to truly effect change. Mindfulness is a studied tool that can be easily and strategically implemented to help combat physician burnout.

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1. **THE SCIENTIFIC PRODUCTION ON RESILIENCE IN NURSING.**  
   Amaral Sanematsu Journal of Nursing UFPE / Revista de Enfermagem UFPE 2019;13:821-832.

Objective: to analyze the scientific production about resilience in Nursing. Method: this is a bibliographic, descriptive, integrative review type study. The research was carried out in national journals, published between the years 2009 and 2018, with a search on the CAPES Periodicals Portal, the LILACS database, the VHL and the SciELO Virtual Library. It is reported that the inclusion criteria were: scientific articles of empirical research, in Portuguese language. Data was analyzed in a manner described after presentation in figures. Results: a total of 308 articles were found and six were included for the final sample of the study. It is understood that the absence of resilience in Nursing is a risk factor that exerts a negative influence on the psychic and physical health of the nursing professional. It was observed that the search for individual support (religious and psychological), collective (interpersonal relations) and identification of the key factor of the problem, contribute to the increase of resilience. Conclusion: the shortage in the production on the subject in the last ten years was noticed as well as the absence of quantitative studies that presented predictors of resilience in Nursing. Studies are needed that relate the construct resilience as a dependent variable of other dimensions such as vocation.

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1. **Update on Addressing Mental Health and Burnout in Physicians: What Is the Role for Psychiatry?**  
   McFarland Daniel C. Current psychiatry reports 2019;21(11):108.

PURPOSE OF REVIEWTo highlight an emerging understanding of burnout and physician mental health. This review will provide a discussion of conceptual and diagnostic issues of the burnout syndrome with its relevance to psychiatry, and how psychiatry may interface with other medical disciplines to provide support in creating burnout prevention and treatment programs.RECENT FINDINGSDescriptive data of burnout correlations and risk factors are available while an understanding of burnout best practices is lacking but growing. Two recent meta-analyses provide efficacy data along with key subgroup analyses that point to greater efficacy among systemic/organizational over individual level interventions. Among individual interventions, groups work better than individual therapy and the incorporation of Mindfulness-Based Stress Reduction and/or Cognitive Behavioral Therapy modalities provide greater efficacy over other therapies. Ultimately, addressing burnout will be an iterative process specific to institutional cultures and therefore should be thought of as quality improvement initiatives involving leadership to adopt the quadruple aim of physician wellness and to seek institution-specific collaboration and feedback. Psychiatry is uniquely positioned to help change institutional cultures regarding the burnout syndrome, which has been labeled a national crisis. Combinatorial strategies that combine efficacious individual-level interventions with systemic-level interventions that enhance workflow will likely provide the most sustainable model for preventing and treating burnout. Psychiatry should be involved, especially at the level of the liaison psychiatrist to assist with how these types of interventions may be best implemented in specific institutions.

1. **A systematic review of burnout among doctors in China: a cultural perspective.**  
   Lo Dana Asia Pacific family medicine 2018;17:3.

BackgroundNumerous studies around the world has already suggested that burnout among doctors is a global phenomenon. However, studies for burnout in doctors are relatively limited in Chinese communities when compared to the West. As risk factors, barriers to intervention and strategies combatting burnout in different parts of the world can vary a lot due to different social culture and healthcare system, study with a focus at doctors in China from a cultural perspective is a worthful endeavor.MethodsSystematic searches of databases were conducted for papers published in peer-reviewed journals from 2006 to 2016. Selection criteria included practicing doctors in Mainland China and publications written in English or Chinese. Keywords searched including "burnout", "doctors" and "China" in 3 electronic databases has been undergone. Traditional understanding of "work attitude" and "doctors' humanity" from ancient Chinese literature has also been retrieved.ResultsEleven full papers, including 9302 participants, were included in this review. The overall prevalence of burnout symptoms among doctors in China ranged from 66.5 to 87.8%. The review suggested that negative impact of burnout include association with anxiety symptoms and low job satisfaction at the individual doctors' level, and prone to committing medical mistakes affecting patient safety and higher turnover intention at the society/organizational level. Burnout was higher among doctors who worked over 40 h/week, working in tertiary hospitals, on younger age group within the profession (at age 30-40), and with negative individual perception to work and life.Conclusions and implicationsThe overall prevalence and adverse impact of burnout among doctors in China echo with the findings from Western studies. Young doctors and doctors working in tertiary hospitals are more at risk of burnout, probably related to shift of social culture related to the loss of medical humanities and a weak primary healthcare system. Potential strategies of managing burnout in Chinese doctors should therefore take consideration from the Chinese cultural perspective, with renaissance of medical humanities and strengthening the primary healthcare system in China.

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1. **Associations between psychosocial work factors and provider mental well-being in emergency departments: A systematic review**  
   Schneider A. PLoS ONE 2018;13(6):No page numbers.

Background Emergency departments (ED) are complex and dynamic work environments with various psychosocial work stressors that increase risks for providers' well-being. Yet, no systematic review is available which synthesizes the current research base as well as quantitatively aggregates data on associations between ED work factors and provider well-being outcomes. Objective We aimed at synthesizing the current research base on quantitative associations between psychosocial work factors (classified into patient-/ task-related, organizational, and social factors) and mental well-being of ED providers (classified into positive well-being outcomes, affective symptoms and negative psychological functioning, cognitive-behavioural outcomes, and psychosomatic health complaints). Methods A systematic literature search in eight databases was conducted in December 2017. Original studies were extracted following a stepwise procedure and predefined inclusion criteria. A standardized assessment of methodological quality and risk of bias was conducted for each study with the Quality Assessment Tool for Quantitative Studies from the Effective Public Health Practice Project. In addition to a systematic compilation of included studies, frequency and strength of quantitative associations were synthesized by means of harvest plots. Subgroup analyses for ED physicians and nurses were conducted. Results N = 1956 records were retrieved. After removal of duplicates, 1473 records were screened for titles and abstracts. 199 studies were eligible for full-text review. Finally, 39 original studies were included whereof 37 reported cross-sectional surveys. Concerning the methodological quality of included studies, the majority was evaluated as weak to moderate with considerable risk of bias. Most frequently surveyed provider outcomes were affective symptoms (e.g., burnout) and positive well-being outcomes (e.g., job satisfaction). 367 univariate associations and 370 multivariate associations were extracted with the majority being weak to moderate. Strong associations were mostly reported for social and organizational work factors. Conclusions To the best of our knowledge, this review is the first to provide a quantitative summary of the research base on associations of psychosocial ED work factors and provider well-being. Conclusive results reveal that peer support, well-designed organizational structures, and employee reward systems balance the negative impact of adverse work factors on ED providers' well-being. This review identifies avenues for future research in this field including methodological advances by using quasi-experimental and prospective designs, representative samples, and adequate confounder control.<br/>Copyright &#xa9; 2018 Schneider, Weigl. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

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1. **Burnout in oncologists is a serious issue: What can we do about it?**  
   Murali Krithika Cancer treatment reviews 2018;68:55-61.

The cancer burden is rising globally with an increasing need for oncologists. The significant demands associated with caring for cancer patients within a rapidly evolving scientific field, poses manifold challenges, including the risk of work-related burnout. Surveys have already shown that the prevalence of burnout in oncologists worldwide is significant. There is growing concern that burnout has a detrimental impact on the wellbeing of oncologists and their patients. In this review article, we provide an oncologist's perspective on this important and topical issue. We have summarised the literature with regard to the consequences of physician burnout, its associated risk factors and previously evaluated solutions. We conclude by suggesting further strategies for addressing this problem.

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1. **Burnout syndrome among healthcare professionals.**  
   Bridgeman Patrick J. American journal of health-system pharmacy : AJHP : official journal of the American Society of Health-System Pharmacists 2018;75(3):147-152.

1. **Changes of job burnout in Chinese nurses over 2004–2013: Cross-temporal meta-analysis**  
   Huang Jie Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues 2018;37(3):583-590.

How nurse burnout changes over time with macro environmental factors remains unclear. The main purpose of this study is to investigate how burnout changes over 2004–2013 in Chinese nurses and its relationship with national-level patient-to-nurse ratio using cross-temporal meta-analysis. The results show that the mean scores of emotional exhaustion and depersonalization are positively related to the year of data collection, while that of personal accomplishment are negatively related to the year of data collection, indicating that burnout increases steadily over the recent years in Chinese nurses. National-level patient-to-nurse ratio may be a risk factor for the observed increase in nurse burnout over 2004–2013, and nurse staffing provided may be inadequate to meet the increasing demands of patients for high-quality medical care service in China. Thus, increasing the number and quality of nurses may hold promise for reducing nurse burnout on a national level. (PsycINFO Database Record (c) 2019 APA, all rights reserved) (Source: journal abstract)

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1. **Depression and suicide among medical practitioners in Australia.**  
   Bailey Eleanor Internal medicine journal 2018;48(3):254-258.

This review will provide an overview of the prevalence of, and risk factors for, depression and suicide in medical practitioners. It will also discuss the barriers to accessing appropriate care and potential interventions for this population.

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1. **Evidence of burnout in health-system pharmacists**  
   Durham M.E. American Journal of Health-System Pharmacy 2018;75(23):No page numbers.

Purpose: Results of a study to determine levels of and risk factors for professional burnout among health-system pharmacists are reported. <br/>Method(s): The Maslach Burnout Inventory Human Services Survey (MBI-HSS) was distributed to a target population of health-system pharmacists to assess study participants for burnout, which is characterized by feelings of emotional exhaustion, depersonalization, and reduced personal accomplishment. Health-system pharmacists were solicited via email through a professional network listserver to complete an anonymous, electronic questionnaire regarding burnout. Demographic information, employment characteristics, and responses to the MBI-HSS were collected using a cross-sectional cohort survey methodology. Descriptive statistics were used to assess MBI-HSS scores and risk factors associated with burnout. <br/>Result(s): Of the 371 survey responses received, 329 were complete and included in the final analysis. Overall, 175 study participants (53.2%) reported scores indicating a high degree of burnout on at least 1 subscale of the MBI-HSS. Twenty-eight respondents (8.5%) had scores indicating burnout on all 3 subscales. Average scores were 22.9, 6.2, and 36.3 for feelings of emotional exhaustion, depersonalization, and reduced personal accomplishment, respectively. Modifiable and nonmodifiable risk factors for burnout were identified. The findings warrant further research on burnout prevention and action to promote resilience in the profession. <br/>Conclusion(s): Half of health-system pharmacists assessed using the MBI-HSS in this study identified themselves as being at risk for burnout.<br/>Copyright &#xa9; 2018 American Society of Health-System Pharmacists, Inc. All rights reserved.

1. **From Burnout to Resilience: An Update for Oncologists.**  
   Murali Krithika American Society of Clinical Oncology educational book. American Society of Clinical Oncology. Annual Meeting 2018;38:862-872.

Physician burnout remains a highly complex and topical issue. The negative impact of burnout on physicians, patients, and institutions has become increasingly apparent. Globally, a multitude of professional bodies and organizational leaders are giving this important subject much-deserved attention. In this review, we provide a summary of the latest evidence, with a focus on solutions and future strategies, while incorporating our own perspectives as practicing oncologists.

1. **Gender, Marital Status, and Children as Risk Factors for Burnout in Nurses: A Meta-Analytic Study.**  
   Cañadas-De la Fuente Guillermo A. International journal of environmental research and public health 2018;15(10):No page numbers.

The correlation between the burnout syndrome and sociodemographic variables in nursing professionals has been widely studied though research results are contradictory. The aim of this study was to assess the impact of gender, marital status, and children on the dimensions of the burnout syndrome (emotional exhaustion, depersonalization, and personal accomplishment) in nursing professionals, as measured with the Maslach Burnout Inventory. The search was performed in May 2018 in the next databases: CINAHL, CUIDEN, Dialnet, Psicodoc, ProQuest Platform, OVID Platform, and Scopus with the search equation ("Maslach Burnout Inventory" OR "MBI") AND "nurs\*", without using any search restriction. The sample was n = 78 studies: 57 studies for gender; 32 for marital status; 13 for having children. A statistically significant relation between depersonalization and gender (r = 0.078), marital status (r = 0.047), and children (r = 0.053) was found. A significant relation was also found between emotional exhaustion and children (r = 0.048). The results showed that being male, being single or divorced, and not having children were related to the highest levels of burnout in nurses. Moreover, these relations could be accentuated by the influence of moderator variables (age, seniority, job satisfaction, etc.), which, in combination with the previously mentioned significant relations, should be evaluated in the design burnout risk profiles for nursing professionals.

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1. **How to prevent burnout in cardiologists? A review of the current evidence, gaps, and future directions.**  
   Panagioti Maria Trends in cardiovascular medicine 2018;28(1):1-7.

Burnout is rising in all physicians, and cardiologists are not an exemption. Cardiology is a very popular specialty among medical students as it is associated with outstanding training standards and high prestige and income. In this review, we critically summarize the evidence on consequences, causes, and evidence-based interventions for burnout with a view toward recommending the best strategies for promoting wellness in cardiologists. Only a handful of studies have examined burnout specifically in cardiologists. Evidence therefore was mainly extrapolated by larger studies in all physicians and other physician specialties. Burnout in cardiologists has serious negative personal and professional consequences and is associated with suboptimal healthcare outcomes for patients. Burnout in cardiologists is primarily driven by professional and healthcare system demands and inefficiencies such as excessive workload and role complexity, training and certification demands, inefficient compensation models and lack of resources, computerization, and loss of autonomy. Moreover, loss of connectedness with patients, difficulties in balancing work and personal life and overvaluing compulsiveness and perfectionism in medical practice further increase the risk for burnout. Burnout among cardiologists may be best mitigated by organizational strategies complemented by individual stress reduction and reflection techniques under the resilience-based approach. Large-scale strategies are needed to mitigate burnout and promote physician wellness as a shared responsibility of healthcare systems and individuals and be committed in creating a new culture in medicine.

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1. **Levels of Burnout and Risk Factors in Medical Area Nurses: A Meta-Analytic Study.**  
   Molina-Praena Jesús International journal of environmental research and public health 2018;15(12):No page numbers.

Research findings concerning burnout prevalence rate among nurses from the medical area are contradictory. The aim of this study was to analyse associated factors, to determine nurse burnout levels and to meta-analyse the prevalence rate of each burnout dimension. A systematic review, with meta-analysis, was conducted in February 2018, consulting the next scientific databases: PubMed, CUIDEN, CINAHL, Scopus, LILACS, PsycINFO and ProQuest Health & Medical Complete. In total, 38 articles were extracted, using a double-blinded procedure. The studies were classified by the level of evidence and degrees of recommendation. The 63.15% (n = 24) of the studies used the MBI. High emotional exhaustion was found in the 31% of the nurses, 24% of high depersonalisation and low personal accomplishment was found in the 38%. Factors related to burnout included professional experience, psychological factors and marital status. High emotional exhaustion prevalence rates, high depersonalisation and inadequate personal accomplishment are present among medical area nurses. The risk profile could be a single nurse, with multiple employments, who suffers work overload and with relatively little experience in this field. The problem addressed in this study influence the quality of care provided, on patients' well-being and on the occupational health of nurses.

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1. **Personal risk factors associated with burnout among psychotherapists: A systematic review of the literature**  
   Simionato Gabrielle K. Journal of Clinical Psychology 2018;74(9):1431-1456.

Objectives: Emotionally taxing job demands place psychotherapists at risk for burnout, often to the detriment of the therapist, clients, and the profession of psychotherapy (Maslach, 2007). The aim of the present systematic review was to (a) explore the levels of both burnout and job stress in psychotherapists, (b) identify tools used to measure work-related stress and burnout, and (c) identify personal risk factors for developing burnout among psychotherapists. Method: Databases PsycINFO, Medline, EMBASE, ASSIA, and CINHAL were searched. Forty articles met inclusion criteria. Results: Over half of sampled psychotherapists reported moderate-high levels of burnout, with the majority of results based on quantitative cross-sectional self-report surveys. Younger age, having less work experience, and being overinvolved in client problems were the most common personal risk factors for moderate-high levels of stress and burnout among psychotherapists. Conclusion: It appears that psychotherapists commonly experience some burnout, and personal factors influence burnout development. (PsycINFO Database Record (c) 2018 APA, all rights reserved) (Source: journal abstract)

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1. **Physician Well-Being: Physician Burnout.**  
   Martin Matt FP essentials 2018;471:11-15.

Physician burnout affects patients and physicians. Recent studies estimate that more than half of all physicians in the United States currently are experiencing burnout. Burnout can include symptoms of emotional exhaustion, depersonalization, cognitive weariness, physical fatigue, and disengagement. It can lead to physical and psychological conditions in physicians and decrease patient safety, quality of care, and satisfaction. The health care work environment appears to be the main contributing factor in the current high rates of physician burnout. Although individual- and organizational-level interventions appear to be effective in reducing burnout, there is no conclusive evidence regarding which intervention or combination of interventions alleviates symptoms. Physicians can reduce burnout with use of mindfulness and stress management techniques. Beyond the level of the individual physician, employers and payers should recognize the benefits of supporting physician well-being and making medical practice a rewarding and healthy experience.

1. **Prevalence of burnout in paediatric nurses: A systematic review and meta-analysis.**  
   Pradas-Hernández Laura PloS one 2018;13(4):e0195039.

INTRODUCTIONAlthough burnout in paediatric nurses has been addressed in previous research, the heterogeneous nature of the results obtained and of the variables studied highlights the need for a detailed analysis of the literature.OBJECTIVEThe aim of this study was to analyse the literature on burnout characteristics, reported prevalence, severity and risk factors, to achieve a better understanding of the risk of emotional exhaustion, depersonalisation and feelings of low personal accomplishment.METHODFor this purpose, we carried out a systematic review and meta-analysis of the literature. The databases consulted were CINAHL, LILACS, PubMed, the Proquest Platform (Proquest Health & Medical Complete), Scielo and Scopus. This study used the search equation "burnout AND "pediatric nurs\*"", and was conducted in July 2017.RESULTSThe search produced 34 studies targeting burnout in paediatric nurses, with no restrictions on the date of publication. Many of these studies detected moderate-high values for the three dimensions of burnout, and highlighted sociodemographic, psychological and job-related variables associated with this syndrome. The sample population for the meta-analysis was composed of 1600 paediatric nurses. The following prevalence values were obtained: (i) emotional exhaustion, 31% (95% CI: 25-37%); (ii) depersonalisation, 21% (95% CI: 11-33%); (iii) low personal accomplishment, 39% (95% CI: 28-50%).CONCLUSIONSA significant number of paediatric nurses were found to have moderate-high levels of emotional exhaustion and depersonalisation, and low levels of personal accomplishment. These nurses, therefore, were either experiencing burnout or at high risk of suffering it in the future. These results support the need for further study of the risk factors for burnout in paediatric nurses. They also highlight the importance of developing interventions or therapies to help prevent or attenuate the above symptoms, thus helping nurses cope with the workplace environment and with situations that may lead to burnout.

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1. **Preventing and Alleviating Compassion Fatigue Through Self-Care: An Educational Workshop for Nurses.**  
   Adimando Journal of Holistic Nursing 2018;36(4):304-317.

Though various authors have refined and described the concept of compassion fatigue (CF), the overarching features, predisposing factors, and potential consequences remain relatively consistent. Available literature demonstrates that caregivers caring for patients who are chronically ill and/or traumatized are at highest risk for developing CF. Potential consequences for unmitigated CF include physical, emotional, and work-related consequences, all of which can have negative effects on the quality and safety of care and degree of engagement with one's employer. CF is further exacerbated by exposure to cumulative, unresolved stress and neglect of one's own emotional needs over time. Caregivers must be knowledgeable on CF's risk factors, symptoms, and management strategies to decrease its incidence and negative impacts. This article details the creation, execution, and evaluation of an evidence-based practice change project implemented with the goal of increasing knowledge needed to prevent, identify, and alleviate CF in high-risk nurses. The project involved a series of educational workshops containing information on CF's risk factors, symptoms, and consequences, with a strong emphasis on self-awareness, self-care, and stress management. Pre- and postknowledge tests showed a significant increase in knowledge was achieved via the workshops, and qualitative surveys indicated a high level of participant satisfaction with the program contents, format, and impact.

1. **Shorter Versus Longer Shift Durations to Mitigate Fatigue and Fatigue-Related Risks in Emergency Medical Services Personnel and Related Shift Workers: A Systematic Review.**  
   Patterson P. Daniel Prehospital emergency care : official journal of the National Association of EMS Physicians and the National Association of State EMS Directors 2018;22:28-36.

BACKGROUNDThis study comprehensively reviewed the literature on the impact of shorter versus longer shifts on critical and important outcomes for Emergency Medical Services (EMS) personnel and related shift worker groups.METHODSSix databases (e.g., PubMed/MEDLINE) were searched, including one website. This search was guided by a research question developed by an expert panel a priori and registered with the PROSPERO database of systematic reviews (2016:CRD42016040099). The critical outcomes of interest were patient safety and personnel safety. The important outcomes of interest were personnel performance, acute fatigue, sleep and sleep quality, retention/turnover, long-term health, burnout/stress, and cost to system. Screeners worked independently and full-text articles were assessed for relevance. Data abstracted from the retained literature were categorized as favorable, unfavorable, mixed/inconclusive, or no impact toward the shorter shift duration. This research characterized the evidence as very low, low, moderate, or high quality according to the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) methodology.RESULTSThe searched yielded n = 21,674 records. Of the 480 full-text articles reviewed, 100 reported comparisons of outcomes of interest by shift duration. We identified 24 different shift duration comparisons, most commonly 8 hours versus 12 hours. No one study reported findings for all 9 outcomes. Two studies reported findings linked to both critical outcomes of patient and personnel safety, 34 reported findings for one of two critical outcomes, and 64 did not report findings for critical outcomes. Fifteen studies were grouped to compare shifts <24 hours versus shifts ≥24 hours. None of the findings for the critical outcomes of patient and personnel safety were categorized as unfavorable toward shorter duration shifts (<24 hours). Nine studies were favorable toward shifts <24 hours for at least one of the 7 important outcomes, while findings from one study were categorized as unfavorable. Evidence quality was low or very low.CONCLUSIONSThe quality of existing evidence on the impact of shift duration on fatigue and fatigue-related risks is low or very low. Despite these limitations, this systematic review suggests that for outcomes considered critical or important to EMS personnel, shifts <24 hours in duration are more favorable than shifts ≥24 hours.

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1. **Stress and Burnout Syndrome Among Nursing Professionals Working in Nephrology: an Integrative Review.**  
   Pinto Ruback Revista de Pesquisa: Cuidado e Fundamental 2018;10(3):889-899.

Objective: The chronic work-related stress can lead to burnout syndrome development. Nurses working in nephrology are also predisposed to the occurrence of stress and burnout. Objectives: The study's goal has been to identify the scientific production related to burnout and stress in nephrology nursing workers; and also, discussing the risk factors with regard to burnout and stress in nephrology nursing. Methods: This is an integrative review. The sampling was composed by 5,253 articles, which after refinement gave 13 complete articles. Results: From those 13 articles, 8 presented high levels of stress and/or burnout among nurses in the hemodialysis sector, and 5 indicated that burnout was either below the average of the origin countries or compared to other health care sectors. Conclusion: Given the results, it is expected to amplify the scientific vision toward the issues of stress and burnout syndrome in nursing professionals working in nephrology by identifying the factors that may influence the health care.

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1. **The prevalence, risk factors and outcomes of workplace bullying among junior doctors: A systematic review**  
   Samsudin Ely Zarina European Journal of Work and Organizational Psychology 2018;27(6):700-718.

Junior doctors’ exposure to bullying may impact their training and compromise quality healthcare, yet little is known in relation to its predictors and effects. The aim of this paper is to assess the prevalence, factors and outcomes of workplace bullying among junior doctors. Literature search was performed to identify all primary studies examining workplace bullying among junior doctors using the following electronic databases: Medline, Scopus, Web of Science, PsycINFO and Cochrane Library. A total of 18 articles were included, reporting on a total of 9,597 junior doctors. The quality of evidence can be rated as moderate according to the Newcastle Ottawa Scale. From the review, a wide range (30–95%) of bullying prevalence, significant differences in bullying rates according to gender, age, height, ethnicity and subspecialty, and significant associations between bullying and mental strain, job dissatisfaction, burnout, and increased accidents at work were observed. Concurrently, heterogeneity in the terms and methodologies used to examine workplace bullying as well as definitional issues in relation to the persistency of negative interactions were noted. Evidence suggests that workplace bullying is a serious occupational hazard for junior doctors, and more research is warranted to better understand this phenomenon and address its definitional and methodological issues. (PsycINFO Database Record (c) 2019 APA, all rights reserved) (Source: journal abstract)

1. **A Picture of Burnout: Case Studies and Solutions Toward Improving Radiologists' Well-being.**  
   Restauri Nicole Current problems in diagnostic radiology 2017;46(5):365-368.

This article uses case fictional case vignettes as a vehicle to discuss the complex way organizational and individual factors contribute to physician burnout. The article incorporates a review of the current literature on physician burnout focusing on work place inefficiency and ineffective leadership.

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1. **Age as a Risk Factor for Burnout Syndrome in Nursing Professionals: A Meta-Analytic Study.**  
   Gómez-Urquiza José L Research in nursing & health 2017;40(2):99-110.

Although past research has highlighted the possibility of a direct relationship between the age of nursing professionals and burnout syndrome, results have been far from conclusive. The aim of this study was to conduct a wider analysis of the influence of age on the three dimensions of burnout syndrome (emotional exhaustion, depersonalization, and personal accomplishment) in nurses. We performed a meta-analysis of 51 publications extracted from health sciences and psychology databases that fulfilled the inclusion criteria. There were 47 reports of information on emotional exhaustion in 50 samples, 39 reports on depersonalization for 42 samples, and 31 reports on personal accomplishment in 34 samples. The mean effect sizes indicated that younger age was a significant factor in the emotional exhaustion and depersonalization of nurses, although it was somewhat less influential in the dimension of personal accomplishment. Because of heterogeneity in the effect sizes, moderating variables that might explain the association between age and burnout were also analyzed. Gender, marital status, and study characteristics moderated the relationship between age and burnout and may be crucial for the identification of high-risk groups. More research is needed on other variables for which there were only a small number of studies. Identification of burnout risk factors will facilitate establishment of burnout prevention programs for nurses. © 2016 Wiley Periodicals, Inc.

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1. **Burnout in the Plastic Surgeon: Implications and Interventions.**  
   Prendergast Christina Aesthetic surgery journal 2017;37(3):363-368.

A career as a plastic surgeon is both rewarding and challenging. The road to becoming a surgeon is a long arduous endeavor and can bring significant challenges not only to the surgeon but their family. A study by the American College of Surgeons (ACS) suggested that over 40% of surgeons experience burnout and a recent survey of American Society of Plastic Surgeons (ASPS) showed that more than one-fourth of plastic surgeons have signs of professional burnout. Burnout is a state of physical and mental exhaustion. The three main components of burnout are emotional exhaustion, depersonalization, and reduced personal accomplishment. Exhaustion occurs as a result of emotional demands. Depersonalization refers to a cynical, negative or a detached response to patient care. The reduced accomplishment refers to a belief that one can no longer work effectively. There has been a recent explosion in the literature characterizing burnout within the surgical profession. Reports of burnout, burnout victims, and burnout syndrome are filling the medical literature, books, blogs, and social media across all different specialties. Burnout in a plastic surgeon has negative and potentially fatal repercussions to the surgeon, their family, their patients, their staff, colleagues, coworkers, and their organization. To date, there are a limited number of publications addressing burnout in the plastic surgery community. The goals of this paper are to review the symptoms of burnout, its effect on plastic surgeons, and discuss potential solutions for burnout prevention and physician wellness.

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1. **Compassion fatigue: A meta-narrative review of the healthcare literature.**  
   Sinclair Shane International journal of nursing studies 2017;69:9-24.

BACKGROUNDCompassion fatigue describes a work-related stress response in healthcare providers that is considered a 'cost of caring' and a key contributor to the loss of compassion in healthcare.OBJECTIVEThe purpose of this review was to critically examine the construct of compassion fatigue and to determine if it is an accurate descriptor of work-related stress in healthcare providers and a valid target variable for intervention.DESIGNMeta-narrative review.DATA SOURCESPubMed, Medline, CINAHL, PsycINFO, and Web of Science databases, Google Scholar, the grey literature, and manual searches of bibliographies.REVIEW METHODSSeminal articles and theoretical and empirical studies on compassion fatigue in the healthcare literature were identified and appraised for their validity and relevance to our review. Sources were mapped according to the following criteria: 1) definitions; 2) conceptual analyses; 3) signs and symptoms; 4) measures; 5) prevalence and associated risk factors; and 6) interventions. A narrative account of included studies that critically examines the concept of compassion fatigue in healthcare was employed, and recommendations for practice, policy and further research were made.RESULTS90 studies from the nursing literature and healthcare in general were included in the review. Findings emphasized that the physical, emotional, social and spiritual health of healthcare providers is impaired by cumulative stress related to their work, which can impact the delivery of healthcare services; however, the precise nature of compassion fatigue and that it is predicated on the provision of compassionate care is associated with significant limitations. The conceptualization of compassion fatigue was expropriated from crisis counseling and psychotherapy and focuses on limited facets of compassion. Empirical studies primarily measure compassion fatigue using the Professional Quality of Life Scale, which does not assess any of the elements of compassion. Reported risk factors for compassion fatigue include job-related factors, fewer healthcare qualifications and less years experience; however, there is no research demonstrating that exemplary compassionate carers are more susceptible to 'compassion fatigue'.CONCLUSIONIn the last two decades, compassion fatigue has become a contemporary and iconic euphemism that should be critically reexamined in favour of a new discourse on healthcare provider work-related stress.

1. **Controlled Interventions to Reduce Burnout in Physicians: A Systematic Review and Meta-analysis.**  
   Panagioti Maria JAMA internal medicine 2017;177(2):195-205.

ImportanceBurnout is prevalent in physicians and can have a negative influence on performance, career continuation, and patient care. Existing evidence does not allow clear recommendations for the management of burnout in physicians.ObjectiveTo evaluate the effectiveness of interventions to reduce burnout in physicians and whether different types of interventions (physician-directed or organization-directed interventions), physician characteristics (length of experience), and health care setting characteristics (primary or secondary care) were associated with improved effects.Data SourcesMEDLINE, Embase, PsycINFO, CINAHL, and Cochrane Register of Controlled Trials were searched from inception to May 31, 2016. The reference lists of eligible studies and other relevant systematic reviews were hand searched.Study SelectionRandomized clinical trials and controlled before-after studies of interventions targeting burnout in physicians.Data Extraction and SynthesisTwo independent reviewers extracted data and assessed the risk of bias. The main meta-analysis was followed by a number of prespecified subgroup and sensitivity analyses. All analyses were performed using random-effects models and heterogeneity was quantified.Main Outcomes and MeasuresThe core outcome was burnout scores focused on emotional exhaustion, reported as standardized mean differences and their 95% confidence intervals.ResultsTwenty independent comparisons from 19 studies were included in the meta-analysis (n = 1550 physicians; mean [SD] age, 40.3 [9.5] years; 49% male). Interventions were associated with small significant reductions in burnout (standardized mean difference [SMD] = -0.29; 95% CI, -0.42 to -0.16; equal to a drop of 3 points on the emotional exhaustion domain of the Maslach Burnout Inventory above change in the controls). Subgroup analyses suggested significantly improved effects for organization-directed interventions (SMD = -0.45; 95% CI, -0.62 to -0.28) compared with physician-directed interventions (SMD = -0.18; 95% CI, -0.32 to -0.03). Interventions delivered in experienced physicians and in primary care were associated with higher effects compared with interventions delivered in inexperienced physicians and in secondary care, but these differences were not significant. The results were not influenced by the risk of bias ratings.Conclusions and RelevanceEvidence from this meta-analysis suggests that recent intervention programs for burnout in physicians were associated with small benefits that may be boosted by adoption of organization-directed approaches. This finding provides support for the view that burnout is a problem of the whole health care organization, rather than individuals.

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1. **Healthy Settings in Hospital - How to Prevent Burnout Syndrome in Nurses: Literature Review.**  
   Friganović Adriano Acta clinica Croatica 2017;56(2):292-298.

Healthy settings involve a holistic and multidisciplinary method that integrates actions towards risk factors. In hospital settings, a high level of stress can lead to depression, anxiety, decreased job satisfaction and lower loyalty to the organization. Burnout syndrome can be defined as physical, psychological and emotional exhaustion, depersonalization, and low sense of personal accomplishment. The aim of this literature review was to make systematic literature analysis to provide scientific evidence for the consequences of constant exposure to high levels of stress and for the methods to be used to prevent burnout syndrome among health care workers. The Medline database was searched to identify relevant studies and articles published during the last 15 years. The key words used in this survey were burnout syndrome, prevention, nurses, and healthy settings. The 6 eligible studies were included in literature review. Evidence showed nurses to be exposed to stress and to have symptoms of burnout syndrome. As a result of burnout syndrome, chronic fatigue and reduced working capacity occur, thus raising the risk of adverse events. In conclusion, the occurrence of burnout syndrome is a major problem for hospitals and healthcare system. Action plan for hospital burnout syndrome prevention would greatly reduce the incidence and improve the quality of health care.

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1. **Incidence and Factors Associated with Burnout in Anesthesiology: A Systematic Review.**  
   Sanfilippo Filippo BioMed research international 2017;2017:8648925.

BackgroundBurnout syndrome has reached epidemic levels among physicians (reported around 50%). Anesthesiology is among the most stressful medical disciplines but there is paucity of literature as compared with others. Analysis of burnout is essential because it is associated with safety and quality of care. We summarize evidence on burnout in anesthesiology.MethodsWe conducted a systematic review (MEDLINE up to 30.06.2017). We included studies reporting burnout in anesthesiology with no restriction on role or screening test used.ResultsFifteen surveys/studies described burnout in anesthesiology, including different workers profiles (nurses, residents, consultants, and directors). All studies used the Maslach Burnout Inventory test but with significant differences for risk stratification. Burnout prevalence greatly varied across studies (10%-41% high risk, up to 59% at least moderate risk). Factors most consistently associated with burnout were strained working pattern, working as younger consultant, and having children. There was no consistent relationship between burnout and hospital characteristics, gender, or marital status.ConclusionsBurnout prevalence among anesthesiologists is relatively high across career stages, and some risk factors are reported frequently. However, the small number of studies as well as the large differences in their methodology and in reporting approach warrants further research in this field.

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1. **Prevalence of and factors associated with burnout among health care professionals in Arab countries: a systematic review.**  
   Elbarazi I. BMC health services research 2017;17(1):491.

BACKGROUNDBurnout among healthcare professionals is one of the key challenges affecting health care practice and quality of care. This systematic review aims to (1) estimate the prevalence of burnout among health care professionals (HCP) in Arab countries; and (2) explore individual and work-related factors associated with burnout in this population.METHODSMultiple electronic databases were searched for studies published in English or Arabic from January 1980 to November 2014 assessing burnout (using the Maslach Burnout Inventory; MBI) amongst health care professionals (HCP) in Arab countries.RESULTSNineteen studies (N = 4108; 49.3% females) conducted on HCP in Bahrain, Egypt, Jordan, Lebanon, Palestine, Saudi Arabia and Yemen were included in this review. There was a wide range of prevalence estimates for the three MBI subscales, high Emotional Exhaustion (20.0-81.0%), high Depersonalization (9.2-80.0%), and low Personal Accomplishment (13.3-85.8%). Gender, nationality, service duration, working hours, and shift patterns were all significantly associated with burnout.CONCLUSIONSWithin the constraints of the study and the range of quality papers available, our review revealed moderate-to-high estimates of self-reported burnout among HCP in Arab countries that are similar to prevalence estimates in non-Arabic speaking westernized developed countries. In order to develop culturally appropriate interventions, further research using longitudinal designs is needed to confirm the risk factors for burnout in specific HCP settings and specialties in Arab countries.

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1. **Sustaining a career in surgery.**  
   Brandt Mary L. American journal of surgery 2017;214(4):707-714.

Surgery is a demanding career with great rewards and equally great challenges. In order to sustain our careers as well as the careers of our colleagues, it is important to understand and address the physical, psychological and spiritual challenges of surgery. With rare exception, the majority of surgery residents and practicing surgeons who prematurely leave surgery do so because they find the work to be physically, emotionally or spiritually incompatible with the vision they have for their life. Understanding these issues and providing solutions to improve surgeon wellness can help prevent societal loss of these highly trained professionals and suffering for surgeons and their families.

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1. **Vulnerability of medical students and professionals to extreme work stress: A select review of the literature.**  
   Walkiewicz Maciej Communication & medicine 2017;14(2):181-187.

The goal of the paper is to describe the extent to which medical students and professionals are vulnerable to extreme stress. A select review of existing literature on this area has been undertaken, using the English-language online databases EBSCO, Medline and PubMed. The search has identified 36 citations relating to 6324 medical students and 28,285 medical staff (physicians, residents, nurses). The review indicates that merely beginning medical studies is a risk factor for stress, and that medical professionals, who are vulnerable to extreme work stress, say that they do not receive enough support from their co-workers. They are also often notably impulsive, introverted, neurotic and perfectionist, with low emotional intelligence and agreeableness, as well as low and external locus of control. Additionally, from longitudinal studies we have been able to identify psychological factors underpinning admission to a medical university that may be useful for predicting future stress in medical career. The results of this study may be taken into account when organizing psychological intervention programs targeted at educating future medical professionals. It seems that early identification of people at risk could reduce the impact of stress related to medical career and enhance the somatic and mental health of medical professionals.

1. **A narrative review on burnout experienced by medical students and residents.**  
   Dyrbye Liselotte Medical education 2016;50(1):132-149.

OBJECTIVETo summarise articles reporting on burnout among medical students and residents (trainees) in a narrative review.METHODSMEDLINE was searched for peer-reviewed, English language articles published between 1990 and 2015 reporting on burnout among trainees. The search used combinations of Medical Subject Heading terms medical student, resident, internship and residency, and burnout, professional. Reference lists of articles were reviewed to identify additional studies. A subset of high-quality studies was selected.RESULTSStudies suggest a high prevalence of burnout among trainees, with levels higher than in the general population. Burnout can undermine trainees' professional development, place patients at risk, and contribute to a variety of personal consequences, including suicidal ideation. Factors within the learning and work environment, rather than individual attributes, are the major drivers of burnout. Limited data are available regarding how to best address trainee burnout, but multi-pronged efforts, with attention to culture, the learning and work environment and individual behaviours, are needed to promote trainees' wellness and to help those in distress.CONCLUSIONMedical training is a stressful time. Large, prospective studies are needed to identify cause-effect relationships and the best approaches for improving the trainee experience.

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1. **A review of occupationally-linked suicide for dentists.**  
   Jones L. M The New Zealand dental journal 2016;112(2):39-46.

BACKGROUND AND OBJECTIVESSuicide rates among dentists and a perceived elevated risk for suicide have been debated in the academic literature. It has filtered into the public psyche that dentists have the highest suicide rate of any occupation. The present review seeks support for both protagonist and antagonist positions from multidisciplinary perspectives. Contemporary risk factors and strategies for intervention and the prevention of suicide in dentistry are explored.METHODSAn online database search for articles and reports, with selected target words, was conducted for peer reviewed publications on suicide in the dental profession, and for factors contributing to dentist suicide. Review guidelines from the American Psychological Association were used to clarify concepts, identify where most work was focussed, and to explore the superiority of any approach to the emotive topic over another.RESULTSFindings suggest the dominant belief that dentists have an elevated risk of suicide may be historically, but not currently, accurate. Although dentists' suicide is trending down, diversity in methodology means no current consensus is possible. Factors found to be influencing dentists' suicide ranged from known occupational stressors, to toxins and substance abuse, and untreated mental health problems.CONCLUSIONThe contemporary position in New Zealand shows dentists per sé are not more likely than other health professionals to commit suicide although they may have been in the past. Dentists should be aware of individual susceptibility to burnout and mental health problems. Future directions are outlined to address this including peer intervention, and programmes available for dentists to cope better with risks leading to suicide.

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1. **Beyond the body: A systematic review of the nonphysical effects of a surgical career.**  
   Oskrochi Youssof Surgery 2016;159(2):650-664.

BACKGROUNDTraining as a physician has been demonstrated to be a source of personal and familial distress; we sought to assess and analyze the holistic impact of a surgical career by examining nonphysical effects on surgeons and their families.METHODSThe MEDLINE database was searched systematically from inception to June 2014 in accordance with PRISMA guidance. Two reviewers independently reviewed articles using predefined inclusion and exclusion criteria.RESULTSWe found 71 articles that met our inclusion criteria. Fifty-four studies (77%) assessed burnout with a reported prevalence of 12.6-58% (mean, 34.6%; SD, 11.0%). Workload was found to be the most significant contributor to burnout. Rates of psychiatric morbidity ranged between 16 and 37% (mean, 25.3%; SD, 6.6%) and rates of suicidal ideation, especially among more senior surgeons and those involved in malpractice, was higher than the general population. Depression was reported in 30.8-37.5% (mean, 33.9%; SD, 3.1%). All were strongly associated with workload and burnout, indicative of a likely synergistic effect. Other risk factors included junior status and younger age, poor professional relationships, work-home conflicts and poor work-life balance. Protective factors included marriage or spousal support, career satisfaction, autonomy, and academic practice.CONCLUSIONSurgeons have a high prevalence of burnout, psychiatric morbidity, and depression, with suicidal ideation rates higher than the general population. Professional factors contribute significantly to these phenomena. Although personal and familial factors are protective, they are eroded by the overwhelming impact of professional factors; nevertheless, career satisfaction rates remain high.

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1. **Burnout and Doctors: Prevalence, Prevention and Intervention.**  
   Kumar Shailesh Healthcare (Basel, Switzerland) 2016;4(3):No page numbers.

Doctors are exposed to high levels of stress in the course of their profession and are particularly susceptible to experiencing burnout. Burnout has far-reaching implications on doctors; patients and the healthcare system. Doctors experiencing burnout are reported to be at a higher risk of making poor decisions; display hostile attitude toward patients; make more medical errors; and have difficult relationships with co-workers. Burnout among doctors also increases risk of depression; anxiety; sleep disturbances; fatigue; alcohol and drug misuse; marital dysfunction; premature retirement and perhaps most seriously suicide. Sources of stress in medical practice may range from the emotions arising in the context of patient care to the environment in which doctors practice. The extent of burnout may vary depending on the practice setting; speciality and changing work environment. Understanding dynamic risk factors associated with burnout may help us develop strategies for preventing and treating burnout. Some of these strategies will be reviewed in this paper.

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1. **Burnout in the intensive care unit professionals: A systematic review**  
   Chuang C.-H. Medicine 2016;95(50):No page numbers.

Background: Burnout has been described as a prolonged response to chronic emotional and interpersonal stress on the job that is often the result of a period of expending excessive effort at work while having too little recovery time. Healthcare workers who work in a stressful medical environment, especially in an intensive care unit (ICU), may be particularly susceptible to burnout. In healthcare workers, burnout may affect their well-being and the quality of professional care they provide and can, therefore, be detrimental to patient safety. The objectives of this study were: to determine the prevalence of burnout in the ICU setting; and to identify factors associated with burnout in ICU professionals. <br/>Method(s): The original articles for observational studies were retrieved from PubMed, MEDLINE, and Web of Science in June 2016 using the following MeSH terms: "burnout" and "intensive care unit". Articles that were published in English between January 1996 and June 2016 were eligible for inclusion. Two reviewers evaluated the abstracts identified using our search criteria prior to full text review. To be included in the final analysis, studies were required to have employed an observational study design and examined the associations between any risk factors and burnout in the ICU setting. <br/>Result(s): Overall, 203 full text articles were identified in the electronic databases after the exclusion of duplicate articles. After the initial review, 25 studies fulfilled the inclusion criteria. The prevalence of burnout in ICU professionals in the included studies ranged from 6% to 47%. The following factors were reported to be associated with burnout: age, sex, marital status, personality traits, work experience in an ICU, work environment, workload and shift work, ethical issues, and end-of-life decision-making. <br/>Conclusion(s): The impact of the identified factors on burnout remains poorly understood. Nevertheless, this review presents important information, suggesting that ICU professionals may suffer from a high level of burnout, potentially threatening patient care. Future work should address the effective management of the factors negatively affecting ICU professionals.<br/>Copyright &#xa9; 2016 the Author(s). Published by Wolters Kluwer Health, Inc. All rights reserved.

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1. **Compassion Fatigue among Healthcare, Emergency and Community Service Workers: A Systematic Review.**  
   Cocker Fiona International journal of environmental research and public health 2016;13(6):No page numbers.

Compassion fatigue (CF) is stress resulting from exposure to a traumatized individual. CF has been described as the convergence of secondary traumatic stress (STS) and cumulative burnout (BO), a state of physical and mental exhaustion caused by a depleted ability to cope with one's everyday environment. Professionals regularly exposed to the traumatic experiences of the people they service, such as healthcare, emergency and community service workers, are particularly susceptible to developing CF. This can impact standards of patient care, relationships with colleagues, or lead to more serious mental health conditions such as posttraumatic stress disorder (PTSD), anxiety or depression. A systematic review of the effectiveness of interventions to reduce CF in healthcare, emergency and community service workers was conducted. Thirteen relevant studies were identified, the majority of which were conducted on nurses (n = 10). Three included studies focused on community service workers (social workers, disability sector workers), while no studies targeting emergency service workers were identified. Seven studies reported a significant difference post-intervention in BO (n = 4) or STS (n = 3). This review revealed that evidence of the effectiveness of CF interventions in at-risk health and social care professions is relatively recent. Therefore, we recommend more research to determine how best to protect vulnerable workers at work to prevent not only CF, but also the health and economic consequences related to the ensuing, and more disabling, physical and mental health outcomes.

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1. **Identification of risk factors for moral distress in nurses: basis for the development of a new assessment tool.**  
   Schaefer Rafaela Nursing inquiry 2016;23(4):346-357.

This article proposes to identify risk factors for moral distress from the literature, validate them through expert analysis and provide the basis for a new tool to assess the risk of moral distress among nurses. Moral distress is related to the psychological, emotional and physiological aspects of nursing. It arises from constraints caused by various circumstances and can lead to significant negative consequences. A scoping review and validation through expert analysis were used. The research question guiding this study was as follows: What is known about risk factors for moral distress in nursing? The research was conducted using multiple sources including electronic databases and lists of references from relevant literature. The final sample consisted of 38 studies. A validation analysis was conducted by experts during December 2014 and June 2015. To exclude a risk factor item, at least 80% of the experts had to agree with the exclusion. In total, 53 risk factors for moral distress were identified, reviewed by the experts and grouped to form a new instrument that may help to identify risk for moral distress and to address its consequences.

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1. **Orthopaedic Surgeon Burnout: Diagnosis, Treatment, and Prevention.**  
   Daniels Alan H. The Journal of the American Academy of Orthopaedic Surgeons 2016;24(4):213-219.

Burnout is a syndrome marked by emotional exhaustion, depersonalization, and low job satisfaction. Rates of burnout in orthopaedic surgeons are higher than those in the general population and many other medical subspecialties. Half of all orthopaedic surgeons show symptoms of burnout, with the highest rates reported in residents and orthopaedic department chairpersons. This syndrome is associated with poor outcomes for surgeons, institutions, and patients. Validated instruments exist to objectively diagnose burnout, although family members and colleagues should be aware of early warning signs and risk factors, such as irritability, withdrawal, and failing relationships at work and home. Emerging evidence indicates that mindfulness-based interventions or educational programs combined with meditation may be effective treatment options. Orthopaedic residency programs, departments, and practices should focus on identifying the signs of burnout and implementing prevention and treatment programs that have been shown to mitigate symptoms.

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1. **Prevalence, Risk Factors, and Levels of Burnout Among Oncology Nurses: A Systematic Review.**  
   Gómez-Urquiza José L Oncology nursing forum 2016;43(3):E104.

PROBLEM IDENTIFICATIONTo determine (a) the average levels of emotional exhaustion (EE), depersonalization (D), and personal accomplishment (PA) among oncology nurses; (b) the prevalence of low, medium, and high levels of burnout for each dimension; and (c) the risk factors for burnout. .LITERATURE SEARCHA systematic review was carried out using the CUIDEN, CINAHL®, LILACS, ProQuest, PubMed, SciELO, and Scopus databases.  .DATA EVALUATIONThe 436 search results obtained were reduced to a final sample of 27 articles after applying the inclusion and exclusion criteria. .SYNTHESISWith respect to levels of burnout, published results differ in their conclusions. In general, they indicate that oncology nurses feel little sense of PA and suffer from EE, although few signs of D exist.  .CONCLUSIONSOncology nurses present high levels of EE and of reduced PA. A large proportion of these nurses are at risk of developing burnout. Age, work experience, workload, and communication skills are among the factors that may influence development of the syndrome.  .IMPLICATIONS FOR PRACTICEPrograms should be developed to identify interventions that would reduce EE and enhance feelings of PA. In addition, risk factors and protective measures should be studied more comprehensively.

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1. **Psychiatric, Psychological, and Social Determinants of Health in the Nurses' Health Study Cohorts.**  
   Trudel-Fitzgerald Claudia American journal of public health 2016;106(9):1644-1649.

OBJECTIVESTo review the contribution of the Nurses' Health Studies (NHS) on factors that influence mental and physical health.METHODSNarrative review of all published articles using data from the NHS, the NHS II, and the Growing Up Today Study focusing on mental health conditions (e.g., depression, posttraumatic stress disorder, anxiety) and psychosocial resources and stressors (e.g., job strain, interpersonal violence, social relationships, sexual orientation) between 1990 and 2016.RESULTSStudies have considered a broad array of determinants (e.g., genes, biomarkers, air pollution) and consequent behavioral and disease-related outcomes (e.g., body weight, smoking, cardiometabolic diseases, cancer, autism). Findings suggest anxiety, posttraumatic stress disorder, childhood violence, caregiver burden, and job insecurity may increase the risk of coronary heart disease and diabetes, whereas findings with cancer are mixed. This work directly affects public health actions, as demonstrated by recent inclusion of a gender expression measure in state surveys.CONCLUSIONSThe NHS cohorts have produced novel and influential research on the interplay of psychological and social factors with health. Psychological and social variables are important contributors to the maintenance or decline of physical and mental health.

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1. **Stress and burnout among gynecologic oncologists: A Society of Gynecologic Oncology Evidence-based Review and Recommendations.**  
   Cass Ilana Gynecologic oncology 2016;143(2):421-427.

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1. **Systematic review: factors contributing to burnout in dentistry.**  
   Singh P. Occupational medicine (Oxford, England) 2016;66(1):27-31.

BACKGROUNDDentists and dental students have been reported to be at high risk of burnout and risk factors have been identified. Despite research into burnout in dentists, only a few papers have identified significantly associated factors.AIMSTo identify the most significant factors associated with burnout in dentists and dental students in published literature.METHODSWe systematically searched MEDLINE, EMBASE and HMIC electronic databases to source literature on the factors associated with burnout in dentists. We critically appraised and themed papers using the Critical Appraisal Skills Programme to find the most significant factors.RESULTSFrom 115 studies identified by the search string, we deemed 33 papers to be relevant for review. The most prevalent and significant factors associated with burnout were: younger age, male gender, student status, high job-strain/working hours, those enrolled in clinical degree programmes and certain personality types. However, only a limited amount of literature explored the directional relationship between these factors and burnout.CONCLUSIONSThis review identified several significant factors contributing to burnout in dentists and dental students. Further longitudinal and prospective studies are required to assess causation. Burnout should be considered a multifactorial phenomenon that can develop early in a dental career. Screening programmes and coping strategies might help to identify and prevent it.

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1. **The Radiologist and Depression.**  
   Bender Claire E. Journal of the American College of Radiology : JACR 2016;13(7):863-867.

Clinical depression affects physicians, including radiologists. Medical professionals, including radiologists, may be more comfortable treating a patient than being one, and psychiatric issues may be regarded as taboo for discussion, so the issue of clinical depression in the specialty and subspecialty has not received widespread attention. Specifically, a review of the national and international literature in PubMed, Scopus, and Google reveals few publications dedicated to the issue of clinical depression in radiology; although statistically, they must exist. The purpose of this report is to define the terms and describe the manifestations and scope of the issues related to clinical depression, with special attention given to risk factors unique to radiologists, such as working in low ambient light or near different fields of magnetic strength. By the end of the article, it is the authors' hope that the reading radiologist will be aware of, and open to, the possibility of clinical depression in a colleague or within his or herself because clinical depression is common and it is important to get help.

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1. **The relationship between leadership and physician well-being: a scoping review.**  
   Montgomery Anthony J. Journal of healthcare leadership 2016;8:71-80.

To date, research has established the individual and organizational factors that impair well-being. Thus, we are aware of the organizational "cogs and wheels" that drive well-being, and there is a sense that we can potentially utilize effective leadership to push and pull these in the appropriate directions. However, reviews of leadership in health care point to the lack of academic rigor and difficulty in reaching solid conclusions. Conversely, there is an accepted belief that the most important determinant of the development and maintenance of cultures is current - and future - leadership. Thus, leadership is assumed to be an important element of organizational functioning without the requisite evidence base. Medicine is a unique organizational environment in which the health of physicians may be a significant risk factor for inadequate patient safety and suboptimal care. Globally, physicians are reporting increasing levels of job burnout, especially among younger physicians in training. Not surprisingly, higher levels of physician burnout are associated with suboptimal care for patients and medical error, as well as maladaptive coping strategies among physicians that serve to exacerbate the former. This review is a scoping analysis of the existing literature to address the central question: is there a relationship between organizational leadership and physician well-being? The objectives of the review are as follows: 1) identify the degree to which physician health is under threat; 2) evaluate the evidence linking leadership with physician well-being; 3) identify alternative ways to approach the problem; and 4) outline avenues for future research. Finally, enhancing progress in the field is discussed in the contexts of theory, methodology, and impact.

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1. **Understanding Compassion Fatigue in Healthcare Providers: A Review of Current Literature.**  
   Sorenson Claire Journal of nursing scholarship : an official publication of Sigma Theta Tau International Honor Society of Nursing 2016;48(5):456-465.

PURPOSEThe purpose of this integrative review was to identify, review, synthesize, and analyze the existing literature addressing compassion fatigue (CF) in healthcare providers (HCPs), with careful attention to provider role and practice area. CF needs to be better understood to identify, prevent, and treat it before it becomes problematic for HCPs. CF is representative of the cost of caring and results in physical, emotional, and psychological symptoms that contribute to the decision of the HCP to leave the profession.METHODSA literature search, guided by search terms related to CF, was conducted using the Cumulative Index to Nursing and Allied Health Literature (CINAHL) and PubMed encompassing publications between 2005 and 2015. The selected literature was then systemically reviewed and synthesized for this narrative review.RESULTSThese preliminary searches resulted in 307 articles, of which 43 met inclusion criteria. These 43 articles were reviewed and reported that CF and related concepts (CF and RCs) were pervasive and affected a wide variety of HCPs working in many clinical settings; however, advanced practice registered nurses (APRNs), respiratory therapists, physical therapists, and occupational therapists were not well represented. The literature provided information regarding prevalence, risk factors, prevention measures, and symptoms of CF and RCs.CONCLUSIONSWhile CF and RCs have been explored in a myriad of medical professionals, there is little published regarding APRNs, respiratory therapists, physical therapists, and occupational therapists. More research is needed to evaluate for the presence of CF in HCPs working in a variety of settings and the degree to which it affects personal and professional well-being, including interactions with patients, patient outcomes, and the quality of professional life. Additionally, as the definition and use of the term compassion fatigue has evolved, a need for a well-developed concept analysis has also become evident.CLINICAL RELEVANCEA better understanding of current research on CF through narrative review, development of a concept analysis, and further exploration of its impact on HCPs has the potential to improve the overall well-being of HCPs, ultimately leading to better patient care and retention within the profession.

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1. **Critical review on suicide among nurses: What about work-related factors?**  
   Alderson Marie Crisis: The Journal of Crisis Intervention and Suicide Prevention 2015;36(2):91-101.

Background: Research shows that there is a high prevalence of suicide among nurses. Despite this, it has been 15 years since the last literature review on the subject was published. Aim: The aim of this article is to review the knowledge currently available on the risk of suicide among nurses and on contributory risk factors. Method: A search was conducted in electronic databases using keywords related to prevalence and risk factors of suicide among nurses. The abstracts were analyzed by reviewers according to selection criteria. Selected articles were submitted to a full-text review and their key elements were summarized. Results: Only nine articles were eligible for inclusion in this review. The results of this literature review highlight both the troubling high prevalence of suicide among nurses as well as the persistent lack of studies that examine this issue. Conclusion: Considering that the effects of several factors related to nurses' work and work settings are associated with high stress, distress, or psychiatric problems, we highlight the relevance of investigating work-related factors associated with nurses' risk of suicide. Several avenues for future studies are discussed as well as possible research methods. (PsycINFO Database Record (c) 2016 APA, all rights reserved) (Source: journal abstract)

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1. **Existential distress among healthcare providers caring for patients at the end of life.**  
   Pessin Hayley Current opinion in supportive and palliative care 2015;9(1):77-86.

PURPOSE OF REVIEWExistential distress is well documented among patients at end of life (EOL) and increasingly recognized among informal caregivers. However, less information is known about existential concerns among healthcare providers working with patients at EOL, and the impact that such concerns may have on professionals.RECENT FINDINGSRecent literature documents five key existential themes for professionals working in EOL care: (1) opportunity for introspection; (2) death anxiety and potential to compromise patient care; (3) risk factors and negative impact of existential distress; (4) positive effects such as enhanced meaning and personal growth; and (5) the importance of interventions and self-care.SUMMARYEOL work can be taxing, yet also highly rewarding. It is critical for healthcare providers to make time for reflection and prioritize self-care in order to effectively cope with the emotional, physical, and existential demands that EOL care precipitates.

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1. **Factors that influence the development of compassion fatigue, burnout, and compassion satisfaction in emergency department nurses.**  
   Hunsaker Stacie Journal of nursing scholarship : an official publication of Sigma Theta Tau International Honor Society of Nursing 2015;47(2):186-194.

PURPOSEThe purpose of this study was twofold: (a) to determine the prevalence of compassion satisfaction, compassion fatigue, and burnout in emergency department nurses throughout the United States and (b) to examine which demographic and work-related components affect the development of compassion satisfaction, compassion fatigue, and burnout in this nursing specialty.DESIGN AND METHODSThis was a nonexperimental, descriptive, and predictive study using a self-administered survey. Survey packets including a demographic questionnaire and the Professional Quality of Life Scale version 5 (ProQOL 5) were mailed to 1,000 selected emergency nurses throughout the United States. The ProQOL 5 scale was used to measure the prevalence of compassion satisfaction, compassion fatigue, and burnout among emergency department nurses. Multiple regression using stepwise solution was employed to determine which variables of demographics and work-related characteristics predicted the prevalence of compassion satisfaction, compassion fatigue, and burnout. The α level was set at .05 for statistical significance.FINDINGSThe results revealed overall low to average levels of compassion fatigue and burnout and generally average to high levels of compassion satisfaction among this group of emergency department nurses. The low level of manager support was a significant predictor of higher levels of burnout and compassion fatigue among emergency department nurses, while a high level of manager support contributed to a higher level of compassion satisfaction.CONCLUSIONSThe results may serve to help distinguish elements in emergency department nurses' work and life that are related to compassion satisfaction and may identify factors associated with higher levels of compassion fatigue and burnout.CLINICAL RELEVANCEImproving recognition and awareness of compassion satisfaction, compassion fatigue, and burnout among emergency department nurses may prevent emotional exhaustion and help identify interventions that will help nurses remain empathetic and compassionate professionals.

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1. **Meta-analysis of risk factors for secondary traumatic stress in therapeutic work with trauma victims.**  
   Hensel Jennifer M. Journal of traumatic stress 2015;28(2):83-91.

Revisions to the posttraumatic stress disorder (PTSD) diagnostic criteria in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5; American Psychiatric Association, 2013) clarify that secondary exposure can lead to the development of impairing symptoms requiring treatment. Historically known as secondary traumatic stress (STS), this reaction occurs through repeatedly hearing the details of traumatic events experienced by others. Professionals who work therapeutically with trauma victims may be at particular risk for this exposure. This meta-analysis of 38 published studies examines 17 risk factors for STS among professionals indirectly exposed to trauma through their therapeutic work with trauma victims. Small significant effect sizes were found for trauma caseload volume (r = .16), caseload frequency (r = .12), caseload ratio (r = .19), and having a personal trauma history (r = .19). Small negative effect sizes were found for work support (r = -.17) and social support (r = -.26). Demographic variables appear to be less implicated although more work is needed that examines the role of gender in the context of particular personal traumas. Caseload frequency and personal trauma effect sizes were moderated by year of publication. Future work should examine the measurement of STS and associated impairment, understudied risk factors, and effective interventions.

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1. **The Impact on Staff of Working with Personality Disordered Offenders: A Systematic Review.**  
   Freestone Mark C. PloS one 2015;10(8):e0136378.

BACKGROUNDPersonality disordered offenders (PDOs) are generally considered difficult to manage and to have a negative impact on staff working with them.AIMSThis study aimed to provide an overview of studies examining the impact on staff of working with PDOs, identify impact areas associated with working with PDOs, identify gaps in existing research,and direct future research efforts.METHODSThe authors conducted a systematic review of the English-language literature from 1964-2014 across 20 databases in the medical and social sciences.RESULTS27 papers were included in the review. Studies identified negative impacts upon staff including: negative attitudes, burnout, stress, negative counter-transferential experiences; two studies found positive impacts of job excitement and satisfaction, and the evidence related to perceived risk of violence from PDOs was equivocal. Studies demonstrated considerable heterogeneity and meta-analysis was not possible. The overall level of identified evidence was low: 23 studies (85%) were descriptive only, and only one adequately powered cohort study was found.CONCLUSIONSThe review identified a significant amount of descriptive literature, but only one cohort study and no trials or previous systematic reviews of literatures. Clinicians and managers working with PDOs should be aware of the potential impacts identified, but there is an urgent need for further research focusing on the robust evaluation of interventions to minimise harm to staff working with offenders who suffer from personality disorder.

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1. **The Potential Effects of Sleep Loss on a Nurse's Health.**  
   Eanes AJN American Journal of Nursing 2015;115(4):34-42.

OVERVIEW: While much has been written about the effects of extended work hours on quality of nursing care, nurse burnout, and job attrition, the potential adverse effects of acute and chronic sleep loss on the overall health and well-being of nurses has received little attention. The author describes the acute and chronic effects of sleep loss on nurses, strategies nurses can use to increase the quantity and quality of their sleep, and institutional policies that can promote adequate rest and recuperation between work shifts for nursing staff.

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1. **What are the significant factors associated with burnout in doctors?**  
   Amoafo E. Occupational medicine (Oxford, England) 2015;65(2):117-121.

BACKGROUNDBurnout syndrome is well established as a condition that affects a significant proportion of practising doctors. Although much literature exists on the prevalence of burnout, only specific variables associated with this condition have been analysed.AIMSTo identify and categorize key factors that are associated with burnout across various medical specialities and geographical locations.METHODSThree electronic databases were searched for literature on the factors associated with burnout published in the past 5 years. Inclusion and exclusion criteria were applied in three stages. We analysed and critically appraised each paper individually, identifying the common themes.RESULTSForty-seven papers were included from the 395 identified by our primary search. Younger age, female sex, negative marital status, long working hours and low reported job satisfaction were found to be predictive of burnout syndrome across the literature. Participation in 'wellness programmes' was related to lower burnout incidence. Causation could not be established however, due to the limited number of longitudinal studies.CONCLUSIONSMore prospective studies are required to assess causation. Despite this, our thematic analysis revealed consistent findings across many papers. This information can be used to inform prevention and interventions to tackle burnout. The associated factors should not be addressed individually, as they are inter-related.

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1. **Work-related mental and behaviour disorders in anesthesiologists.**  
   Andrade Gabriela Oliveira Brazilian journal of anesthesiology (Elsevier) 2015;65(6):504-510.

BACKGROUNDAnaesthesiology is a specialty whose specificity of the working process results in high levels of stress as an inevitable condition - a particularly worrying situation in the daily life of these professionals.OBJECTIVESThis study, based on data from national and international literature, aims to discuss the basis of the occurrence of mental and behavioural disorders or of psychopathological injuries (psychological distress) related to working activity in anesthesiologists.METHODA literature review was conducted, with papers selected from Medline and Lilacs databases, published between 2000 and 2012 in Portuguese, English and Spanish, and addressing the possible association between occupational hazards of the anaesthesiologist profession and mental health problems and psychic distress. Twenty-six publications were listed.RESULTSSeveral aspects of the anesthesiologist's work are important points to better understand the relationship between mental health at work and working organization. Poor temporal structuring of work, conflictuous interpersonal relationships and poor control over the activity itself may be mentioned as illness enhancers.CONCLUSIONThe working organization, when not appropriate, is an important occupational risk factor for the life and mental health of workers, mainly of professionals focused on the care of people. This paper focuses on anesthesiologists, who are constantly exposed to stressful and anxiogenic factors.

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1. **Work-related psychosocial risk factors and musculoskeletal disorders in hospital nurses and nursing aides: A systematic review and meta-analysis.**  
   Bernal International Journal of Nursing Studies 2015;52(2):635-648.

Objectives: To estimate the association between psychosocial risk factors in the workplace and musculoskeletal disorders (MSD) in nurses and aides. Design: Systematic review and meta-analysis. Data sources: An electronic search was performed using MEDLINE (Pubmed), Psychinfo, Web of Science, Tripdatabase, Cochrane Central Controlled Trials, NIOSHTIC and Joanna Briggs Institute of Systematic Reviews on Nursing and Midwifery, to identify observational studies assessing the role of psychosocial risk factors on MSD in hospital nurses and nursing aides. Review methods: Two reviewers independently assessed eligibility and extracted data. Quality assessment was conducted independently by two reviewers using an adapted version of the Standardized Quality Scale. Random-effects meta-analysis was performed by subsets based on specific anatomical site and the exposure to specific psychosocial risk factors. Heterogeneity for each subset of meta-analysis was assessed and meta- regressions were conducted to examine the source of heterogeneity among studies. Results: Twenty-four articles were included in the review, seventeen of which were selected for meta-analysis. An association was identified between high psychosocial demands--low job control with prevalent and incident low back pain (OR 1.56; 95% CI 1.22-1.99 and OR 1.52; 95% CI 1.14-2.01, respectively), prevalent shoulder pain (OR 1.89; 95% CI 1.53-2.34), prevalent knee pain (OR 2.21; 95% CI 1.07-4.54), and prevalent pain at any anatomical site (OR 1.38; 95% CI 1.09-1.75). Effort-reward imbalance was associated with prevalent MSD at any anatomical site (OR 6.13; 95% CI 5.32-7.07) and low social support with incident back pain (OR 1.82; 95% CI 1.43-2.32). Heterogeneity was generally low for most subsets of meta-analysis.

1. **'Violence is not part of our job': a thematic analysis of psychiatric mental health nurses' experiences of patient assaults from a New Zealand perspective.**  
   Baby Maria Issues in mental health nursing 2014;35(9):647-655.

This paper describes psychiatric mental health nurses' (PMHN) experiences of patient assaults within mental healthcare settings using a thematic analytical approach. The aim of the study was to explore and describe psychiatric mental health nurses' experiences of patient assaults. The major findings of the study related to the nature and impact of assaults and supportive strategies associated with violence perpetrated by patients against psychiatric mental health nurses. Perpetrator risk factors for patients include mental health disorders, alcohol and drug use and the inability to deal with situational crises. The injuries sustained by nurses in the context of the study include lacerations, head injuries, dislocations and bruises. Psychological harm has also occurred, including quite severe mental health problems, such as post-traumatic stress disorder. Protective strategies for combating negative consequences of workplace violence include practice of self-defence, social support and a supportive and consultative workplace culture with access to counselling services and assistance in all aspects, including finances. The paper concludes that while healthcare employers need to provide better support services to the healthcare professionals who are assaulted, the legal system also needs to acknowledge that assaults against nurses are a violation of human rights and violence should not to be tolerated as part of working in mental healthcare settings.

1. **Compassion fatigue in military healthcare teams.**  
   Owen Regina Peterson Archives of psychiatric nursing 2014;28(1):2-9.

Since the onset of the Iraq war and Afghanistan conflicts, military healthcare teams have had increasing exposure to the traumatic effects of caring for wounded warriors, leading to a phenomenon termed compassion fatigue. The purpose of this integrative review was to develop a proposed definition for compassion fatigue in support of these teams. There is no current standardized formal definition, and this lack of clarity can inhibit intervention. Seven main themes evolved from the literature review and were integrated with the core elements of the Bandura Social Cognitive Theory Model as the first step in developing a uniformed definition.

1. **Current state of knowledge of post-traumatic stress, sleeping problems, obesity and cardiovascular disease in paramedics**  
   Hegg-Deloye S. Emergency Medicine Journal 2014;31(3):242-247.

Purpose The impacts of emergency work on firefighters have been well documented and summarised, but this is not the case for paramedics. This paper explores the literature regarding the impact of work stress on paramedics. Objective To identify the literature available on the effect of paramedics' jobs on their health status. Methods Electronic database used: MEDLINE (Ovid, PubMed, National Library of Medicine) between 2000 and 2011. Key words used for the computer searches were: paramedics, emergency responders, emergency workers, shift workers, post-traumatic symptoms, obesity, stress, heart rate variability, physiological response, blood pressure, cardiovascular and cortisol. Exclusion criteria were: studies in which participants were not paramedics, participants without occupational exposure, physical fitness assessment in paramedics and epidemiological reports regarding death at work. Results The electronic databases cited 42 articles, of which we excluded 17; thus, 25 articles are included in this review. It seems clear that paramedics accumulate a set of risk factors, including acute and chronic stress, which may lead to development of cardiovascular diseases. Post-traumatic disorders, sleeping disorders and obesity are prevalent among emergency workers. Moreover, their employers use no inquiry or control methods to monitor their health status and cardiorespiratory fitness. Conclusions More studies are needed to characterise paramedics' behaviour at work. These studies could allow the development of targeted strategies to prevent health problems reported in paramedics.

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1. **Negative impacts of shiftwork and long work hours.**  
   Caruso Claire C. Rehabilitation nursing : the official journal of the Association of Rehabilitation Nurses 2014;39(1):16-25.

PURPOSEHealthcare organizations often have to provide patient care around the clock. Shift work (any shift outside of 7 a.m. to 6 p.m) and long work hours increase the risk for short sleep duration and sleep disturbances. Thirty-two percent of healthcare workers report they do not get enough sleep. The purpose of the article is to give an overview of the wide range of risks to nurses, patients, and employers that are linked to shift work, long work hours, and poor sleep from other sources.FINDINGSShift work and long work hours increase the risk for reduced performance on the job, obesity, injuries, and a wide range of chronic diseases. In addition, fatigue-related errors could harm patients. Fatigued nurses also endanger others during their commute to and from work.CONCLUSION AND CLINICAL RELEVANCEThe key strategy to reduce these risks is making sleep a priority in the employer's systems for organizing work and in the nurse's personal life.

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1. **The ill surgeon: a review of common work-related health problems amongst UK surgeons.**  
   Vijendren Ananth Langenbeck's archives of surgery 2014;399(8):967-979.

INTRODUCTIONHealth-care workers are subjected to various occupational hazards within the National Health Service (NHS). Surgeons are not excluded from this group due to the nature of work carried out on a daily basis. As a result, we set out to investigate the common work-related health issues a surgeon practising in the UK may encounter.METHODA literature search conducted on PubMed, EMBASE, MEDLINE® and Health Management Information Consortium (HMIC) revealed 66 literature papers between the years 1990 and 2013. Thirty-seven were excluded from our review process for various reasons.RESULTSSurgeons in the UK are likely to be susceptible to stress, sharp injuries, burnout and psychiatric morbidities, substance abuse and musculoskeletal pain. Noise-induced hearing loss has been reported amongst orthopaedic surgeons due to the use of electric and air-powered drills and saws. No reports of skin-related illness, respiratory illness, nosocomial infections or malignancies were found within the published UK literature of our targeted group although they have been noted in other specialties.CONCLUSIONThese occupational hazards pose a huge risk to the NHS and the personal well-being of its surgeons. As such, the importance of early awareness and education alongside prompt intervention is duly emphasized.

1. **Burnout among occupational physicians: A threat to occupational health systems? - A nationwide cross-sectional survey**  
   Lesage F.-X. Annals of Occupational Hygiene 2013;57(7):913-919.

Objectives:Burnout among occupational health physicians in France was measured in a nationwide cross-sectional survey. The relationships between each dimension of burnout (emotional exhaustion, depersonalization, and feelings of low personal accomplishment) and stress level, identity threat, and job characteristics were analysed. <br/>Method(s):E-mails were sent out to all occupational physicians working in France by the French Ministry of Labour, inviting them to fill out an online questionnaire. This questionnaire included the Maslach Burnout Inventory, the Perceived Stress Scale, and the Primary Appraisal of Identity scale. Job characteristics were measured with survey-specific questions. <br/>Result(s):Of the 5010 occupational physicians who were potentially contacted, 1670 (33%) completed the online questionnaire. The estimated prevalence of burnout was 11.8%, twice as high as in a sample of French general practitioners (5%). The main characteristic of the burnout pattern was feelings of very low personal accomplishment (63.9%). Job characteristics were only weakly correlated with burnout, but stress level and identity threat were correlated with all three dimensions of burnout. The perceived stress was the main risk factor for emotional exhaustion and identity threat for feelings of low personal accomplishment. <br/>Conclusion(s):The health status of occupational physicians is important for both the individual physicians and for the occupational health system. Occupational physicians are unwell, and we probably need to change the way we currently cope with burnout. This is not only a stress-induced syndrome, resulting from high workloads, but a low self-esteem-induced syndrome, too. &#xa9; 2013 Crown.

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1. **Burnout in relation to specific contributing factors and health outcomes among nurses: a systematic review.**  
   Khamisa Natasha International journal of environmental research and public health 2013;10(6):2214-2240.

Nurses have been found to experience higher levels of stress-related burnout compared to other health care professionals. Despite studies showing that both job satisfaction and burnout are effects of exposure to stressful working environments, leading to poor health among nurses, little is known about the causal nature and direction of these relationships. The aim of this systematic review is to identify published research that has formally investigated relationships between these variables. Six databases (including CINAHL, COCHRANE, EMBASE, MEDLINE, PROQUEST and PsyINFO) were searched for combinations of keywords, a manual search was conducted and an independent reviewer was asked to cross validate all the electronically identified articles. Of the eighty five articles that were identified from these databases, twenty one articles were excluded based on exclusion criteria; hence, a total of seventy articles were included in the study sample. The majority of identified studies exploring two and three way relationships (n = 63) were conducted in developed countries. Existing research includes predominantly cross-sectional studies (n = 68) with only a few longitudinal studies (n = 2); hence, the evidence base for causality is still very limited. Despite minimal availability of research concerning the small number of studies to investigate the relationships between work-related stress, burnout, job satisfaction and the general health of nurses, this review has identified some contradictory evidence for the role of job satisfaction. This emphasizes the need for further research towards understanding causality.

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1. **Correlates of physician burnout across regions and specialties: a meta-analysis.**  
   Lee Raymond T. Human resources for health 2013;11:48.

BACKGROUNDHealth care organizations globally realize the need to address physician burnout due to its close linkages with quality of care, retention and migration. The many functions of health human resources include identifying and managing burnout risk factors for health professionals, while also promoting effective coping. Our study of physician burnout aims to show: (1) which correlates are most strongly associated with emotional exhaustion (EE) and depersonalization (DP), and (2) whether the associations vary across regions and specialties.METHODSMeta-analysis allowed us to examine a diverse range of correlates. Our search yielded 65 samples of physicians from various regions and specialties.RESULTSEE was negatively associated with autonomy, positive work attitudes, and quality and safety culture. It was positively associated with workload, constraining organizational structure, incivility/conflicts/violence, low quality and safety standards, negative work attitudes, work-life conflict, and contributors to poor mental health. We found a similar but weaker pattern of associations for DP.Physicians in the Americas experienced lower EE levels than physicians in Europe when quality and safety culture and career development opportunities were both strong, and when they used problem-focused coping. The former experienced higher EE levels when work-life conflict was strong and they used ineffective coping. Physicians in Europe experienced lower EE levels than physicians in the Americas with positive work attitudes. We found a similar but weaker pattern of associations for DP.Outpatient specialties experienced higher EE levels than inpatient specialties when organization structures were constraining and contributors to poor mental health were present. The former experienced lower EE levels when autonomy was present. Inpatient specialties experienced lower EE levels than outpatient specialties with positive work attitudes. As above, we found a similar but weaker pattern of associations for DP.CONCLUSIONSAlthough we could not infer causality, our findings suggest: (1) that EE represents the core burnout dimension; (2) that certain individual and organizational-level correlates are associated with reduced physician burnout; (3) the benefits of directing resources where they are most needed to physicians of different regions and specialties; and (4) a call for research to link physician burnout with performance.

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1. **Exploration of the burnout syndrome occurrence among mental health nurses in Cyprus.**  
   Karanikola Maria N. K Archives of psychiatric nursing 2013;27(6):319-326.

Nurses' work-related stress might be associated with psychiatric symptoms, leading to altered professional attitudes. The aim of this study was to explore the levels of burnout and associations with anxiety and depressive symptoms among Greek-Cypriot psychiatric-mental health nurses (PMHNs). A descriptive correlational design with cross-sectional comparisons was applied. A sample of 226 PMHNs was used. Participants reported low levels of burnout. However, 10% of them manifested clinically significant anxiety and depressive symptoms. Emotional exhaustion and depersonalization were associated with depressive (r=0.562, p<0.0001, and r=0.616, p<0.0001, respectively) and anxiety (r=0.394, p<0.0001, and r=0.448, p<0.0001, respectively) symptoms. Further research investigating the biological aetiopathology of these psychological alterations is warranted.

1. **PTSD in Psychiatric Nurses and Other Mental Health Providers: A Review of the Literature.**  
   Jacobowitz Issues in Mental Health Nursing 2013;34(11):787-795.

Psychiatric nurses are subject to a high rate of assault by patients. The stress of exposure to assault and the potential for assault appear to impact nurses' emotional states in the form of post-traumatic stress and post-traumatic stress disorder (PTSD). Most studies report a prevalence rate of PTSD in this population of between 9-10%. Training in the management of aggressive patients, participating in Critical Incident Debriefing, and having routine structured debriefing meetings may play a role in facilitating the development of resilience in nurses with respect to the risk of PTSD. Knowledge about the state of the science regarding aggression and PTSD is necessary for clinicians and researchers to develop and test effective strategies. This article presents a review of the current literature on this topic.

1. **Review article: burnout in emergency medicine physicians.**  
   Arora Manit Emergency medicine Australasia : EMA 2013;25(6):491-495.

Training and the practice of emergency medicine are stressful endeavours, placing emergency medicine physicians at risk of burnout. Burnout syndrome is associated with negative outcomes for patients, institutions and the physician. The aim of this review is to summarise the available literature on burnout among emergency medicine physicians and provide recommendations for future work in this field. A search of MEDLINE (1946-present) (search terms: 'Burnout, Professional' AND 'Emergency Medicine' AND 'Physicians'; 'Stress, Psychological' AND 'Emergency Medicine' AND 'Physicians') and EMBASE (1988-present) (search terms: 'Burnout' AND 'Emergency Medicine' AND 'Physicians'; 'Mental Stress' AND 'Emergency Medicine' AND 'Physicians') was performed. The authors focused on articles that assessed burnout among emergency medicine physicians. Most studies used the Maslach Burnout Inventory to quantify burnout, allowing for cross-study (and cross-country) comparisons. Emergency medicine has burnout levels in excess of 60% compared with physicians in general (38%). Despite this, most emergency medicine physicians (>60%) are satisfied with their jobs. Both work-related (hours of work, years of practice, professional development activities, non-clinical duties etc.) and non-work-related factors (age, sex, lifestyle factors etc.) are associated with burnout. Despite the heavy burnout rates among emergency medicine physicians, little work has been performed in this field. Factors responsible for burnout among various emergency medicine populations should be determined, and appropriate interventions designed to reduce burnout.

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1. **Total worker health and work-life stress.**  
   Hammer Leslie B. Journal of occupational and environmental medicine 2013;55(12):No page numbers.

OBJECTIVEReview relationships between work-life stress and health behaviors to advance understanding of pathways between occupational and individual risk factors and health and safety outcomes.METHODSA background on the Total Worker Health concept is provided, and a review of research on the relationship between work-life stress and health behaviors is presented.RESULTSResearch evidence indicates that work-life stress serves as a negative occupational exposure relating to poor health behaviors, including smoking, poor food choices, low levels of exercise, and even decreased sleep time.CONCLUSIONThe association between work-life stress and adverse health behaviors suggests that interventions at both the occupational (health protection) and individual (health promotion) level may be helpful in mitigating effects of work-life stress, consistent with the Total Worker Health approach. Further study is needed to investigate gains from an integrated prevention strategy.

1. **Associations between obesity and stress and shift work among nurses.**  
   Buss Julia Workplace health & safety 2012;60(10):453.

Nurses' work is known to be stressful, and many nurses work shifts. Both stress and shift work are factors that can influence how and what nurses eat and may increase nurses' risk for weight gain and obesity. This literature review summarizes the evidence regarding the prevalence of obesity and overweight among nurses who work shifts and examine associations between stress and the eating behaviors of these nurses. The conclusion provides some implications for occupational health nurses who promote wellness for their employees.

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1. **Burnout in critical care nurses: a literature review.**  
   Epp Kirstin Dynamics (Pembroke, Ont.) 2012;23(4):25-31.

Burnout and its development in critical care nurses is a concept that has received extensive study, yet remains a problem in Canada and around the world. Critical care nurses are particularly vulnerable to developing burnout due to the chronic occupational stressors they are exposed to, including high patient acuity, high levels of responsibility, working with advanced technology, caring for families in crisis, and involved in morally distressing situations, particularly prolonging life unnecessarily. The purpose of this article is to explore how the chronic stressors that critical care nurses are exposed to contribute to the development of burnout, and strategies for burnout prevention. A review of the literature between the years 2007 and 2012 was conducted and included the search terms burnout, moral distress, compassion fatigue, intensive care, critical care, and nursing. The search was limited to the adult population, English language, and Western cultures. The results revealed that nurse managers play a crucial role in preventing burnout by creating a supportive work environment for critical care nurses. Strategies for nurse managers to accomplish this include being accessible to critical care nurses, fostering collegial relationships among the different disciplines, and making a counsellor or grief team available to facilitate debriefing after stressful situations, such as a death. In addition, critical care nurses can help prevent burnout by being a support system for each other and implementing self-care strategies.

1. **Systematic review of burnout risk factors among European healthcare professionals**  
   Bria Mara Cognition, Brain, Behavior: An Interdisciplinary Journal 2012;16(3):423-452.

Healthcare professionals' burnout is a response to the prolonged exposure to occupational stress and affects negatively both the employee and the organization. The aim of the present review is to discuss the relevant burnout risk factors for European healthcare professionals working in hospitals and clinics. A systematic search of articles published between January 2000 and December 2011 was conducted in several databases (ISI Web of Knowledge, Psych Articles, Sage Pub, PubMed and Cochrane database of systematic reviews). After the analysis of the 4335 articles found, 53 met the inclusion criteria and were included in the review. Results confirm the main role of occupational and organizational risk factors while pointing out that psychosocial factors have a small yet statistically significant influence on burnout development. Socio-demographic factors, although included in the majority of studies, seem to have little impact on burnout. In conclusion, the review pointed out that although the healthcare systems across Europe are fundamentally different, healthcare professionals present similar risk factors concerning burnout. (PsycINFO Database Record (c) 2018 APA, all rights reserved) (Source: journal abstract)

1. **Burnout in palliative care: a systematic review.**  
   Pereira Sandra Martins Nursing ethics 2011;18(3):317-326.

Burnout is a phenomenon characterized by fatigue and frustration, usually related to work stress and dedication to a cause, a way of life that does not match the person's expectations. Although it seems to be associated with risk factors stemming from a professional environment, this problem may affect any person. Palliative care is provided in a challenging environment, where professionals often have to make demanding ethical decisions and deal with death and dying. This article reports on the findings of a systematic review aimed at identifying described burnout levels in palliative care nurses and physicians, and the related risks and protective factors. The main findings indicate that burnout levels in palliative care, or in health care settings related to this field, do not seem to be higher than in other contexts.

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1. **Countering compassion fatigue: a requisite nursing agenda.**  
   Boyle Deborah A. Online journal of issues in nursing 2011;16(1):2.

Nurses have a longstanding history of witnessing the tragedy experienced by patients and families; however, their own reactions to profound loss and premature death have not been systematically addressed. There is a paucity of research describing interventions to prevent or minimize the ramifications of repeated exposure to traumatic events in the clinical workplace. Compassion fatigue is a contemporary label affixed to the concept of personal vicarious exposure to trauma on a regular basis. Yet this phenomenon of compassion fatigue lacks clarity. In this article, the author begins by describing compassion fatigue and distinguishing compassion fatigue from burnout. Next she discusses risk factors for, and the assessment of compassion fatigue. The need to support nurses who witness tragedy and workplace interventions to confront compassion fatigue are described.

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1. **Exploration of Burnout Risk Factors among Mental Health Nurses.**  
   Karanikola Nosileftiki 2011;50(2):163-176.

Background: A growing body of evidence indicates an increasing incidence of professional burnout among mental health nurses. Aim: Investigation of levels of burnout among mental health nurses and of its associated factors. Method: A critical review of the literature published from 2000 to 2010 was performed, using IATROTEK, PubMed, Cochrane and Cinahl, with the key words: burnout, professional burnout, emotional well-being, work strain, stressors, mental health nurse, psychiatric nurse, with several combinations and links. Only qualitative and quantitative research studies published in English were included, and those in which the sample included mental health professionals other than nurses were excluded. Results: Fourteen relevant studies were found. A significant percentage of mental health nurses report intense professional burnout symptoms. Factors that contribute to burnout symptoms are related to the individual characteristics of the nurses, working parameters and to the characteristics of the patients. Conclusions: Professional burnout among psychiatric nurses is a multidimensional phenomenon. Work factors appear to have a greater impact than the individual characteristics of the nurses.

1. **Psychosocial safety climate: a multilevel theory of work stress in the health and community service sector.**  
   Dollard M. F Epidemiology and psychiatric sciences 2011;20(4):287-293.

Work stress is widely thought to be a significant problem in the health and community services sector. We reviewed evidence from a range of different data sources that confirms this belief. High levels of psychosocial risk factors, psychological health problems and workers compensation claims for stress are found in the sector. We propose a multilevel theoretical model of work stress to account for the results. Psychosocial safety climate (PSC) refers to a climate for psychological health and safety. It reflects the balance of concern by management about psychological health v. productivity. By extending the health erosion and motivational paths of the Job Demands-Resources model we propose that PSC within work organisations predicts work conditions and in turn psychological health and engagement. Over and above this, however, we expect that the external environment of the sector particularly government policies, driven by economic rationalist ideology, is increasing work pressure and exhaustion. These conditions are likely to lead to a reduced quality of service, errors and mistakes.

1. **Review of literature on the mental health of doctors: are specialist services needed?**  
   Brooks Samantha K. Journal of mental health (Abingdon, England) 2011;20(2):146-156.

BACKGROUNDMental ill health is common among doctors. Fast, efficient diagnosis and treatment are needed as mentally ill doctors pose a safety risk to the public, yet they are often reluctant to seek help.AIMSTo review literature regarding risk factors and potential barriers to help-seeking unique to doctors; to consider the success of interventions by specialist services for doctors.METHODKey phrases regarding the 'mental health of doctors' were entered into internet searches and journal databases to identify relevant research. When key authors were identified, author-specific searches were carried out.FINDINGSThere are contradictory reports about the prevalence of mental ill health in doctors but it is generally agreed that doctors face a large number of risk factors, both occupational and individual; and help-seeking is difficult due to complexities surrounding a doctor becoming a patient. Specialist services developed specifically for interventions for doctors with mental health problems tend to show promising results but further research is needed.CONCLUSIONSThe unique and complex situation of a doctor becoming a patient benefits from specialist services; such services should focus on early intervention and raising awareness.

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1. **Risk of burnout in perioperative clinicians: a survey study and literature review.**  
   Hyman Steve A. Anesthesiology 2011;114(1):194-204.

BACKGROUNDBurnout can lead to health and psychologic problems and is apparently increasing in physicians and nurses. Previous studies have not evaluated all healthcare workers within a single work unit. This study evaluates the risk of burnout in all medical personnel in one perioperative unit.METHODSWe developed an online survey that included demographics, a modified version of the Maslach Burnout Inventory-Human Services Survey, and the Social Support and Personal Coping Survey. Survey constructs (e.g., depersonalization and health) and a global score were calculated. Larger construct and global values were associated with higher risk of burnout. These were separately regressed on role, age, and sex. The global score was then regressed on each of the survey constructs.RESULTSOf the 145 responses, 46.2% were physicians (22.8% residents), 43.4% were nurses or nurse anesthetists, and 10.3% were other personnel. After adjusting for sex and age, residents scored higher than other physicians on the following (expected change [95% confidence interval]): global score (1.12 [0.43-1.82]), emotional exhaustion (1.54 [0.44-2.60]), and depersonalization (1.09 [0.23-1.95]). Compared with nonphysicians, residents were 1 U or more higher on these items (P < 0.05 in all cases). Residents had higher health (1.49 [0.48-2.50]) and workload (1.23 [0.07-2.40]) values compared with physicians. Better health, personal support, and work satisfaction scores were related to decreased global scores (P < 0.05).CONCLUSIONSPhysicians (particularly residents) had the largest global burnout scores, implying increased risk of burnout. Improving overall health, increasing personal support, and improving work satisfaction may decrease burnout among perioperative team members.

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1. **A review of research and strategies for burnout among Chinese nurses.**  
   Lei Wang British journal of nursing (Mark Allen Publishing) 2010;19(13):844-850.

Although the concept of burnout has been a significant nursing issue worldwide over the past 30 years, in China the relevant research about nursing burnout only started in the 1990s. In this time, nursing burnout has become increasingly prevalent. This article examines the research carried out both in China and internationally, in order to investigate the causes of stress that lead to burnout among nurses. With the key stressors identified, the article sets out a proposal for a programme to alleviate the stress of hospital nurses and help them to engage with their jobs.

1. **Coping and resilience factors in pediatric oncology nurses.**  
   Zander Melissa Journal of pediatric oncology nursing : official journal of the Association of Pediatric Oncology Nurses 2010;27(2):94-108.

It is well established that pediatric oncology is perceived as a setting that is personally and professionally demanding. Many sources acknowledge the development of conditions, such as burnout, compassion fatigue and vicarious traumatization, as a result of being continuously subjected to highly stressful circumstances in a professional capacity. There are a myriad of individual and collaborative factors that are known to mediate stress in the oncology setting. One such factor is resilience. The purpose of this literature review is to investigate what is known about coping and its relationship with resilience in assisting pediatric oncology nurses to manage work-related stressors. From the themes identified within the reviewed studies, it is clear that the applicability of resilience in pediatric oncology nursing has not been thoroughly investigated. The literature suggests that the presence of resilience among pediatric oncology nurses is possible. What is not known is whether there is a link between this resilience and ability to cope with the stressors of pediatric oncology.

1. **Occupational stress in oral and maxillofacial surgeons: tendencies, traits, and triggers.**  
   LaPorta Lauren D. Oral and maxillofacial surgery clinics of North America 2010;22(4):495-502.

Health professionals are subject to higher levels of stress than the average worker. Little has been written on these subjects, specifically in oral and maxillofacial surgeons. Anecdotally, dentists have been singled out as the health care professionals more likely to be subjected to severe stress, burnout, failed marriages, depression, substance abuse, and commit suicide. However, with oral and maxillofacial surgery being a particularly high-stress specialty of dentistry, a study of the dental literature regarding stress may be relevant. This article explores the myths and realities of stress and burnout in oral and maxillofacial surgeons and the coping skills, both adaptive and maladaptive used by practitioners to deal with their stress. This article also offers some practical suggestions for improving both the mental and physical health of oral and maxillofacial surgeons.

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1. **Risk of suicide amongst dentists: myth or reality?**  
   Sancho Federico Moreno International dental journal 2010;60(6):411-418.

OBJECTIVESTo analyse the scientific weight of the studies about reports of suicide rates in dentistry and decide the possible stressors caused by dental clinical activity, their consequences and their treatment.DISCUSSIONThe previous literature treats the high suicide rate associated with the dental profession in different ways: myth for some, important statistical data which needs further research for others. The possible errors repeated in the literature as a result of not introducing certain indispensable variables are analysed and a report given of the main stressors linked to the profession. The results showed that the absence of treatment of the disorders arising from these stressors by qualified professionals along with the lack of preventative measures developed by universities and clinicians to be one of the main problems.CONCLUSIONSIn the literature we find systematically a suicide rate among dentists higher than those of other occupations. These studies lack the correct scientific weight and new studies are required that introduce the demographic variables, the psiquiatric morbidity previous to the development of the profession, the opportunity factor, the stressors not related to work and the relative emphasis to these are necessary to for the profession to decrease the risk of suicide.

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1. **Application of an interpersonal-psychological model of suicidal behavior to physicians and medical trainees.**  
   Cornette Michelle M. Archives of suicide research : official journal of the International Academy for Suicide Research 2009;13(1):1-14.

Physicians and medical trainees (medical students and residents) are at increased risk for suicidal ideation. Yet few conceptual models have attempted to explain the elevated rates of suicide among physicians, and very little is known about what factors contribute to medical trainees' suicidal ideation and behaviors. In this paper, Joiner's (2005) interpersonal-psychological theory of suicidality will be explored as it applies to suicidal ideation and behavior among physicians and medical trainees. Literature addressing each component of the theory will be reviewed. Drawing upon extant data, each dimension of the theory (burden, thwarted belongingness, and acquired ability) will be examined in depth in terms of its applicability to suicidal thinking and behavior among physicians and physicians-in-training. Findings from the literature provide support for the interpersonal-psychological theory of suicidality as applied to this population.

1. **Beyond substance abuse: stress, burnout, and depression as causes of physician impairment and disruptive behavior.**  
   Brown Stephen D. Journal of the American College of Radiology : JACR 2009;6(7):479-485.

Disruptive physician behavior may diminish productivity, lead to medical errors, and compromise patient safety. The purpose of this paper is to review how common psychological conditions such as depression, stress, and burnout may drive disruptive behavior in the workplace and result in impaired patterns of professional conduct similar to what is seen with substance abuse. Problems related to these psychological morbidities may be more effectively managed with improved understanding of the conditions and behaviors, their associated risk factors, and the barriers that exist to reporting them. Further research and educational programs are warranted to address how these conditions might affect radiology.

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1. **Physician wellness: a missing quality indicator.**  
   Wallace Jean E. Lancet (London, England) 2009;374(9702):1714-1721.

When physicians are unwell, the performance of health-care systems can be suboptimum. Physician wellness might not only benefit the individual physician, it could also be vital to the delivery of high-quality health care. We review the work stresses faced by physicians, the barriers to attending to wellness, and the consequences of unwell physicians to the individual and to health-care systems. We show that health systems should routinely measure physician wellness, and discuss the challenges associated with implementation.

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1. **Predictors of nurse absenteeism in hospitals: a systematic review.**  
   Davey Mandy M. Journal of nursing management 2009;17(3):312-330.

AIMThis study aimed to identify and examine predictors of short-term absences of staff nurses working in hospital settings reported in the research literature.BACKGROUNDFront-line staff nurse absenteeism contributes to discontinuity of patient care, decreased staff morale and is costly to healthcare.EVALUATIONA systematic review of studies from 1986 to 2006, obtained through electronic searches of 10 online databases led to inclusion of 16 peer-reviewed research articles. Seventy potential predictors of absenteeism were examined and analysed using content analysis.KEY ISSUEOur findings showed that individual 'nurses' prior attendance records', 'work attitudes' (job satisfaction, organizational commitment and work/job involvement) and 'retention factors' reduced nurse absenteeism, whereas 'burnout' and 'job stress' increased absenteeism. Remaining factors examined in the literature did not significantly predict nurse absenteeism.CONCLUSIONSReasons underlying absenteeism among staff nurses are still poorly understood. Lack of robust theory about nursing absenteeism may underlie the inconsistent results found in this review. Further theory development and research is required to explore the determinants of short-term absenteeism of nurses in acute care hospitals.IMPLICATIONS FOR NURSING MANAGEMENTWork environment factors that increase nurses' job satisfaction, and reduce burnout and job stress need to be considered in managing staff nurse absenteeism.

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1. **Stress in Irish dentists: developing effective coping strategies.**  
   Rogers Cathryn Journal of the Irish Dental Association 2009;55(6):304-307.

Recent research has highlighted the need to recognise occupation-specific risk factors contributing to stress and burnout. As health professionals, it is important for dentists to recognise the symptoms and the effects of stress on physical, psychological and professional well being. This article reviews the relevant scientific evidence, and provides practical cognitive psychological measures to guide improved well-being for dentists. Any stigma-related factors need to be acknowledged and addressed for the wellbeing of dentists and their patients, and the dental profession is well placed to provide leadership on this issue. Peer support is central to meeting this challenge.

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1. **The quality of life of New Zealand doctors and medical students: what can be done to avoid burnout?**  
   Henning Marcus A. The New Zealand medical journal 2009;122(1307):102-110.

Life as a doctor or medical student poses particular challenges and stressors which can impact on quality of life. This paper sets out to review what is known about the quality of life of doctors and medical students and the ramifications of a poor quality of life. This paper summarises the national and international literature on what is known about quality of life and burnout with regards to both medical students and doctors in terms of the origin of these issues and various risk factors. This paper further recommends ways of addressing these issues from an undergraduate level, for doctors in practice, and then in the workplace. It is critical that the New Zealand medical workforce addresses these issues in a timely manner. In addition, the paper proposes that if doctors, particularly those involved as clinical teachers, have a poor quality of life, the learning environment for medical students may be adversely affected. Exploration of the evidence around these important issues and their relevance to the New Zealand context are considered with suggested solutions.

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1. **Nurse burnout and stress in the NICU.**  
   Braithwaite Mercedes Advances in neonatal care : official journal of the National Association of Neonatal Nurses 2008;8(6):343-347.

The effects of nurse burnout and stress in a neonatal intensive care unit (NICU)-high levels of absenteeism, low morale, mental fatigue, and exhaustion-can have detrimental effects on neonatal care. Because of the nature of this highly specialized form of nursing, NICU nurses can experience high levels of psychologic and physical stress. Burnout is a response to workplace stress that results in emotional and mental exhaustion, depersonalization, and decreased sense of personal accomplishment. Job satisfaction, emotional support, and self-care are important components for preventing burnout in staff. Therefore, the implications regarding practice and nurse burnout in the NICU are clear. It is the responsibility of both individual nurses and administrative leaders to take the necessary steps to prevent nurse burnout. Preventing this phenomenon in the NICU can lead to better retention and recruitment rates and delivery of safe neonatal care.

1. **Resident physician burnout: is there hope?**  
   McCray Laura W. Family medicine 2008;40(9):626-632.

BACKGROUNDPrevalent among resident physicians, burnout has been associated with absenteeism, low job satisfaction, and medical errors. Little is known about the number and quality of interventions used to combat burnout.METHODSWe performed a systematic review of the literature using MEDLINE and PubMed databases. We included English-language articles published between 1966 and 2007 identified using combinations of the following medical subject heading terms: burnout, intervention studies, program evaluation, internship and residency, graduate medical education, medical student, health personnel, physician, resident physician, resident work hours, and work hour limitations. Additional articles were also identified from the reference lists of manuscripts. The quality of research was graded with the Strength of Evidence Taxonomy (SORT) from highest (level A) to lowest (level C).RESULTSOut of 190 identified articles, 129 were reviewed. Nine studies met inclusion criteria, only two of which were randomized, controlled trials. Interventions included workshops, a resident assistance program, a self-care intervention, support groups, didactic sessions, or stress-management/coping training either alone or in various combinations. None of the studied interventions achieved an A-level SORT rating.CONCLUSIONSDespite the potentially serious personal and professional consequences of burnout, few interventions exist to combat this problem. Prospective, controlled studies are needed to examine the effect of interventions to manage burnout among resident physicians.

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1. **Specific determinants of burnout among male and female general practitioners: a cross-lagged panel analysis.**  
   Maastricht University Maastricht The Netherlands Journal of Occupational & Organizational Psychology 2008;81(2):249-276.

This study aimed to develop and test a specific pattern of relationships between job demands, job resources and person-related factors on the one hand, and the three burnout dimensions on the other, among Dutch General Practitioners. In addition, we aimed to test whether gender differences exist in this regard. Based on several theoretical models such as the Job Demand-Control model and the Job Demands-Resources model of burnout as well as a review of burnout studies among physicians, we formulated a research model of burnout. The research questions were answered by means of self-report questionnaires using a full panel design with two waves. Cross-lagged panel analyses indicated that the causal direction of the relationships between demands, resources and person-related factors on the one hand, and burnout on the other is reciprocal. In addition, multi-sample analyses revealed that the pattern of relationships between job demands, job resources, person-related factors and burnout is different for men and women, although results are less clear at the second measurement point. Among other things, we recommend anticipating in a gender sensitive way on risk factors for burnout and motivation loss for young professionals by coaching and empowerment in vocational training.

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1. **Stress and burnout in forensic mental health nursing: a literature review.**  
   Dickinson Tommy British journal of nursing (Mark Allen Publishing) 2008;17(2):82-87.

Forensic mental health nurses who work with patients who have severe and enduring mental health needs have been identified as at risk of suffering from occupational stress, and even developing burnout syndrome. Therefore, this article reviews the available literature on stress and burnout in inpatient forensic mental health nursing to identify the stressors and to highlight recommendations. From the review, the main stressors placed on forensic nurses are identified as interprofessional conflicts, workload, and lack of involvement in decision-making. Recommendations to reduce stress and burnout for nurses within this specialty are highlighted. These are identified as follows: staff should have easy access to support systems including clinical supervision; managers should foster an open and honest culture to enable staff members to express their feelings openly or in confidence and learn how to deal with their frustrations; and staff should be encouraged to rotate wards to increase personal and professional development and reduce boredom and apathy. Furthermore, staff should be provided with, and encouraged to undertake, continuing professional development which may include psychosocial interventions training.

1. **The many dimensions of stress in nursing.**  
   Graner Becky The Prairie rose 2008;77(4):9-13.

1. **Does vicarious traumatisation affect oncology nurses? A literature review.**  
   Sinclair Helen A. H European journal of oncology nursing : the official journal of European Oncology Nursing Society 2007;11(4):348-356.

It is widely documented that nurses experience work-related stress [Quine, L., 1998. Effects of stress in an NHS trust: a study. Nursing Standard 13 (3), 36-41; Charnley, E., 1999. Occupational stress in the newly qualified staff nurse. Nursing Standard 13 (29), 32-37; McGrath, A., Reid, N., Boore, J., 2003. Occupational stress in nursing. International Journal of Nursing Studies 40, 555-565; McVicar, A., 2003. Workplace stress in nursing: a literature review. Journal of Advanced Nursing 44 (6), 633-642; Bruneau, B., Ellison, G., 2004. Palliative care stress in a UK community hospital: evaluation of a stress-reduction programme. International Journal of Palliative Nursing 10 (6), 296-304; Jenkins, R., Elliott, P., 2004. Stressors, burnout and social support: nurses in acute mental health settings. Journal of Advanced Nursing 48 (6), 622-631], with cancer nursing being identified as a particularly stressful occupation [Hinds, P.S., Sanders, C.B., Srivastava, D.K., Hickey, S., Jayawardene, D., Milligan, M., Olsen, M.S., Puckett, P., Quargnenti, A., Randall, E.A., Tyc, V., 1998. Testing the stress-response sequence model in paediatric oncology nursing. Journal of Advanced Nursing 28 (5), 1146-1157; Barnard, D., Street, A., Love, A.W., 2006. Relationships between stressors, work supports and burnout among cancer nurses. Cancer Nursing 29 (4), 338-345]. Terminologies used to capture this stress are burnout [Pines, A.M., and Aronson, E., 1988. Career Burnout: Causes and Cures. Free Press, New York], compassion stress [Figley, C.R., 1995. Compassion Fatigue. Brunner/Mazel, New York], emotional contagion [Miller, K.I., Stiff, J.B., Ellis, B.H., 1988. Communication and empathy as precursors to burnout among human service workers. Communication Monographs 55 (9), 336-341] or simply the cost of caring (Figley, 1995). However, in the mental health field such as psychology and counselling, there is terminology used to captivate this impact, vicarious traumatisation. Vicarious traumatisation is a process through which the therapist's inner experience is negatively transformed through empathic engagement with client's traumatic material [Pearlman, L.A., Saakvitne, K.W., 1995a. Treating therapists with vicarious traumatization and secondary traumatic stress disorders. In: Figley, C.R. (Ed.), Compassion Fatigue: Coping with Secondary Traumatic Stress Disorder in Those Who Treat the Traumatized. Brunner/Mazel, New York, pp. 150-177]. Trauma not only affects individuals who are primarily present, but also those with whom they discuss their experience. If an individual has been traumatised as a result of a cancer diagnosis and shares this impact with oncology nurses, there could be a risk of vicarious traumatisation in this population. However, although Thompson [2003. Vicarious traumatisation: do we adequately support traumatised staff? The Journal of Cognitive Rehabilitation 24-25] suggests that vicarious traumatisation is a broad term used for workers from any profession, it has not yet been empirically determined if oncology nurses experience vicarious traumatisation. This purpose of this paper is to introduce the concept of vicarious traumatisation and argue that it should be explored in oncology nursing. The review will highlight that empirical research in vicarious traumatisation is largely limited to the mental health professions, with a strong recommendation for the need to empirically determine whether this concept exists in oncology nursing.

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1. **Health problems and the use of health services among physicians: a review article with particular emphasis on Norwegian studies.**  
   Tyssen Reidar Industrial health 2007;45(5):599-610.

This paper provides an overview of recent Norwegian and international research into physicians' health problems and their use of health services, with a particular focus on more recent studies relating to The Norwegian Physicians' Survey. The review suggests that physicians' physical health is similar to the general population, although female physicians tend to be in better health than other women. Some mental disorders such as depression and suicide appear to be more prevalent. Mental health problems are known to be associated with low work control (autonomy), time pressure and demanding patients. There is little difference between the genders early in their career, but more female than male physicians seem to experience problems later on. Physicians seldom take sick leave, and tend to make less use of primary health care and some screening facilities. Self-treatment is common -- even for mental problems. American impaired physician programmes have demonstrated high recovery rates (70-80%), and increasing emphasis is now being placed on psychiatric diagnoses. As certain mental disorders appear to be common among physicians, specialist psychiatric services should be made more accessible for this group. A low-threshold facility for seeking help with such problems has recently been developed in Norway (the Villa Sana Resource Centre).

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1. **Moral distress and providing care to dying babies in neonatal nursing.**  
   Kain Victoria J. International journal of palliative nursing 2007;13(5):243-248.

Moral distress in nursing is a prevalent theme in the literature. Although this issue has been investigated in other nursing disciplines, it has not been investigated by empirical research in the emotionally and ethically sensitive area of providing care to dying babies. Moral distress occurs when nurses are prevented from translating moral choices into moral action. The response to moral distress is anger, resentment, guilt, frustration, sorrow and powerlessness. If not addressed, self-worth may be jeopardised, affecting personal and professional relationships. A review of the literature was conducted to explore moral distress in neonatal nursing when providing care to dying babies. This literature review provides a basis for the direction of further research and hypothesis testing. Further focused research is necessary in this under-theorised area of nursing practice to clarify the significance of moral distress for neonatal nurses caring for dying babies.

1. **Organizational climate and nurse health outcomes in the United States: a systematic review.**  
   Gershon Robyn R. M Industrial health 2007;45(5):622-636.

Increasing interest has been focused on understanding the role working conditions play in terms of the serious issues facing hospitals today, including quality of patient care, nurse shortages, and financial challenges. One particular working condition that has been the subject of recent research, is the impact of organizational climate on nurses' well-being, including occupational health outcomes. To examine evidence-based research on the association between organizational climate and occupational health outcomes among acute-care registered nurses, a systematic review of published studies was conducted. Studies assessing the association between organizational climate variables and three common health outcomes in nurses (blood/body fluid exposures, musculoskeletal disorders, and burnout) were reviewed. Fourteen studies met the inclusion criteria. Although most were cross-sectional in design and variability was noted across studies with respect to operational definitions and assessment measures, all noted significant associations between specific negative aspects of hospital organizational climate and adverse health impacts in registered nurses. While evidence for an association between organizational climate constructs and nurses' health was found, data were limited and some of the relationships were weak. Additional studies are warranted to clarify the nature of these complex relationships.

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1. **Caregiver stress and burnout in an oncology unit.**  
   Sherman Allen C. Palliative & supportive care 2006;4(1):65-80.

PURPOSECaring for patients with cancer can be taxing for front-line health care providers. The growing intensity of treatment protocols, in conjunction with staff shortages, reduced hospital stays, and broader pressures on the health care system may exacerbate these challenges, leading to increased risk for burnout. This article reviews the research literature regarding the prevalence of burnout and psychosocial distress among oncology providers, examines multifactorial occupational and personal determinants of risk, and considers intervention strategies to enhance resilience.METHODSLiterature review of empirical peer-reviewed studies focusing on prevalence and correlates of burnout among oncology physicians and nurses.RESULTSFindings from a number of studies using validated measures and large samples suggest that prevalence rates for burnout and psychosocial distress are high among oncology staff, though not necessarily higher than in non-cancer-practice settings. A growing database has examined occupational (e.g., workload) and demographic (e.g., gender) factors that may contribute to risk, but there is less information about personal (e.g., coping) or organizational (e.g., staffing, physician-nurse relations) determinants or multilevel interactions among these factors. Oncologist burnout may adversely affect anticipated staff turnover. Other important endpoints (biological stress markers, health status, patient satisfaction, quality-of-care indices) have yet to be examined in the oncology setting. Intervention research is at a more rudimentary phase of development.CONCLUSIONSBurnout and distress affect a significant proportion of oncology staff. There is a need for additional conceptually based, longitudinal, multivariate studies regarding burnout and its associated risk factors and consequences.

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1. **Stress and coping in nurse managers: two decades of research.**  
   Shirey Maria R. Nursing economic$ 2006;24(4):193.

An integrative literature review was undertaken to examine the research related to stress and coping in nurse managers. Key gaps in the literature were identified with implications for research presented.

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1. **Supportive care in a paediatric onco-haematological service: therapeutic patient education and burn-out prevention in health workers.**  
   Department of Hygiene and Microbiology Policlinic University of Palermo Italy; enzasidoti@libero.it Supportive & Palliative Cancer Care 2006;3(1):29-35.

Therapeutic patient education represents an integrating part of sanitary assistance and treatment, designed to help the patient and his family to understand the disease and its treatment. The intervention of therapeutic patient education is particularly needed in a setting such as the paediatric oncohaematological service for the structural fragility of the patients and the problems related to treatment.The main aspects of an intervention of therapeutic patient education in this context were described. In addition, different causal aspects and risk factors associated with burn-out syndrome in health operators were also examined. Elucidating the above-mentioned proposition, it has been pointed out that it is especially the oncology department, where doctors, nurses and others operators are exposed to the possibility of developing the burn-out syndrome. Cancer patients, and more often children in the paediatric oncohaematological services, due to the particular kind of suffering, of pathology and to the peculiar aspects of underlying existential themes involving themselves and the families, force health workers to face problems that, besides a high professional standard and an elevated level of technical competence and adequately organised structures, call for relational capabilities, generally not included in the medical curriculum. All possible actions and preventive measures against burn-out syndrome were reviewed.

1. **Taking a lead on stress: rank and relationship awareness in the NHS.**  
   Collins Mick Journal of nursing management 2006;14(4):310-317.

Recent legislation from the Health and Safety Executive will have a significant impact on the expectations of how an organization manages stress. This paper considers the need for more awareness of risk assessment and risk management that takes into account the systemic antecedents of stress. It is suggested that assessment of organizational stress levels should include qualitative and quantitative methods of data collection to analyse the cumulative wear and tear on staff that contributes to the experience of workplace stress. This paper explores the importance of leadership within organizational hierarchies. Rank and status dynamics are identified as a potentially significant source of workplace stress. It is proposed that training in rank dynamics and relationship awareness are potential mediators in reducing workplace stress. The National Health Service could be a leader in establishing organizational well-being through patterns of leadership and relationship that tackles the growing epidemic of workplace stress.

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1. **Burnout in psychiatrists: an etiological model.**  
   Associate Professor Private Bag 3023 Rotorua NZ; shailesh.kumar@lakesdhb.govt.nz International Journal of Psychiatry in Medicine 2005;35(4):405-416.

OBJECTIVE: This article reviews burnout in psychiatrists. A model of burnout is presented which considers three factors: those which may predispose, precipitate, and perpetuate burnout. Lastly, recommendations are made for future research. METHODS: We conducted a selective literature review to expand on two recent systematic reviews to examine the etiology, prevalence, and consequences of burnout in psychiatrists. We distinguish the effects of burnout, depression, and work-related stress. RESULTS: An etiological model for the development of burnout in psychiatrists is described here in terms of an interaction between the predisposing, precipitating, and perpetuating factors. CONCLUSIONS: Research is needed on the long-term effects of work-place stress on psychiatrists, to identify possible protective factors, and to utilize this information to inform the design of interventions that protect or mitigate the effects of work-place stress on psychiatrists.

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1. **Role stress in nurses: review of related factors and strategies for moving forward.**  
   Chang Esther M. Nursing & health sciences 2005;7(1):57-65.

The aim of this paper was to review the literature on factors related to role stress in nurses, and present strategies for addressing this issue based on the findings of this review while considering potential areas for development and research. Computerized databases were searched as well as hand searching of articles in order to conduct this review. This review identified multiple factors related to the experience of role stress in nurses. Role stress, in particular, work overload, has been reported as one of the main reasons for nurses leaving the workforce. This paper concludes that it is a priority to find new and innovative ways of supporting nurses in their experience of role stress. Some examples discussed in this article include use of stress education and management strategies; team-building strategies; balancing priorities; enhancing social and peer support; flexibility in work hours; protocols to deal with violence; and retention and attraction of nursing staff strategies. These strategies need to be empirically evaluated for their efficacy in reducing role stress.

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1. **The consequences of job stress for nurses' health: time for a check-up.**  
   McNeely Eileen Nursing outlook 2005;53(6):291-299.

The processes and outcomes of nurses' work are described extensively in studies about patient care, nursing education and training, job satisfaction, health care quality and management, and organizational behavior. These studies evaluate the relationship between nurses' behavior and organizational health (ie, productivity) or between nurses' behavior and patient health (ie, medical error). Fewer studies probe the association between the nature of nursing work and the status of nurses' health despite the logical connection between how well nurses feel and how well they perform, or even, whether they discontinue working altogether for health reasons. Yet, for many nurses working in today's health care environment, work is a stressful part of their lives. This article explores the connections between stressful work and nurses' health, especially given the restructuring of their work in the current health care system. The working conditions that give rise to stress and the potential health consequences from it are well described in the general stress literature and summarized herein. Moreover, studies about nurses' work and nurses' health are discussed in light of the limitations for connecting job stress to job changes or health outcomes over time. Current approaches for dealing with nurses' stress, such as the attraction to "Magnetism", may inadvertently impede progress in this area. Recommendations for the future are included.

1. **Work stress and burnout among dental hygienists.**  
   Gorter R. C International journal of dental hygiene 2005;3(2):88-92.

OBJECTIVESThe aim of this study was to describe the factors associated with work stress and burnout among dental hygienists. Furthermore, how to deal with work stressors in order to prevent burnout in the dental hygienist work environment will be discussed.METHODSFrom a small literature search, only a few empirical studies could be traced that describe work stress or burnout among dental hygienists.RESULTSBurnout incidence among dental hygienists appears to be relatively favourable, when compared with other professions, according to a 20-year-old study. On the contrary, in a recent study, it was described that one out of eight dental hygienists felt emotionally exhausted from work. Dental hygienists, when compared with other professionals, are relatively negative about the variety of tasks they find in their work. Factors associated with experienced work stress are, according to another study, musculoskeletal pain, combining work and private life, highly efficient organization of work, long working hours, working without assistant, difficult or demanding patients, lack of leisure time, lack of support by practice management and doubts about one's own capabilities. Some factors that may prevent burnout are: recognition of one's own work pressure, learning to unwind, time management and organization of work, realistic career expectancies, social skills, healthy life-style, peer-group contacts and pre-graduate reflection.CONCLUSIONSThere appears to be a lack of recent data on burnout among dental hygienists. Although some knowledge exists on work stressors, a thorough investigation on burnout incidence, risk factors, as well as job resources is needed.

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1. **Occupational stress and coping among nurses.**  
   Dept of Humanities and Social Sciences Indian Institute of Technology Bombay Powai Mumbai 400 076 Journal of Health Management 2004;6(2):115-127.

This paper explores nurses' occupational stressors and coping mechanisms. In nurses occupational stress appears to vary according to individual and job characteristics, and work-family conflict. Common occupational stressors among nurses are workload, role ambiguity, interpersonal relationships, and death and dying concerns. Emotional distress, burnout and psychological morbidity could also result from occupational stress. Nurses' common coping mechanisms include problem solving, social support and avoidance. Perceived control appears to be an important mediator of occupational stress. Coping and job satisfaction appear to be reciprocally related. Shift work is highly prevalent among nurses and a significant source of stress. The effects, moderating influences, coping mechanisms and risk factors associated with shift work are considered in detail here. Prophylactic and curative measures are important for nurses at both personal as well as organisational levels.

1. **Burnout in renal care professionals.**  
   Kotzabassaki S. EDTNA/ERCA journal (English ed.) 2003;29(4):209-213.

Burnout is defined as "a syndrome of emotional exhaustion, depersonalisation and reduced personal accomplishment that can occur among individuals who work with people in some capacity", and it can be considered as a result of long-term exposure to occupational stress. Frequently reported occupational stressors among caring professionals are those intrinsic to the job, related to patient demands, related to roles within the organisation, and those related to relationships at work and career development. In renal care however, there are some unique characteristics such as technologically advanced equipment, the intensive caring environment and the long-term relationships being established between the carer and chronic renal patients, that one should take into consideration. It seems that job resources may act as moderators to burnout. Furthermore, specific personality characteristics and socio-demographic variables seem to affect the burnout experience. Individual and social organisational means for burnout prevention and coping are discussed and suggested.

1. **The professional burnout syndrome in radiologists.**  
   Czekajska-Chehab Elzbieta Annales Universitatis Mariae Curie-Sklodowska. Sectio D: Medicina 2003;58(1):254-260.

The aim of the study was to assess the incidence of professional burnout syndrome among radiologists. The study was conducted in a group of 70 radiologists of the Lublin region using a questionnaire designed by the authors and Burnout Scale prepared by Steuden and Okła. In the whole group, the level of burnout was found to be moderate, the individual indices, however, showed high burnout levels in 37.1% of the radiologists, moderate levels in 51.5% and low ones in only 11.4% The individual elements of the burnout syndrome (reduced emotional control, loss of the subject's commitment, reduced effectiveness of action, limited interpersonal contacts and physical fatigue) were moderate in relation to the whole group with the highest incidence (52.9%) of high levels in the subscale evaluating physical fatigue. No correlation was found between sex, length of work and level of burnout, yet the relationship with the number of additional jobs was significant. The highest level of burnout was observed in the radiologists working 10 - 19 years (71.4% of high indices, 23.8% of moderate indices); in this group, the levels of all structural elements of professional burnout syndrome were high.

1. **Working with the psychological effects of trauma: consequences for mental health-care workers--a literature review.**  
   Collins S. Journal of psychiatric and mental health nursing 2003;10(4):417-424.

This literature review explores how interacting with seriously traumatized people has the potential to affect health-care workers. The review begins with an introduction to post-traumatic stress disorder as being one of the possible negative consequences of exposure to traumatic events. The report proceeds with examining the concepts of vicarious traumatization, secondary traumatic stress, traumatic countertransference, burnout and compassion fatigue, as potential adverse consequences for workers who strive to help people who are traumatized. The differences between these concepts are also discussed. The notion of compassion satisfaction is examined as findings have demonstrated that it is a protective factor which can be used as a buffer to prevent the aforementioned concepts. Conversely, findings have shown that a history of previous stressful life events in helpers is a potential risk factor. The review concludes with an overview of the concepts considered, but cautions against generalization of the findings owing to the dearth of longitudinal studies into the issues raised and also the lack of investigation into the many different types of trauma.

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1. **Improving the working lives of cancer clinicians.**  
   Professor of Liaison Psychiatry Cancer Research UK London Psychosocial Group 3rd Floor Adamson Centre for Mental Health St Thomas' Hospital London SE1 7EH UK; jill.graham@kcl.ac.uk European Journal of Cancer Care 2002;11(3):188-192.

Cancer clinicians have to deal with particular difficulties in their work, including emotionally demanding interactions with patients and a high proportion of patients in whom curative treatment is ineffective. Perhaps, surprisingly, cancer clinicians are at no greater risk of poor mental health than other specialists, although levels among senior doctors are higher than among the employed general population. Being young, being single, feeling inadequately trained in communication and management skills and experiencing high levels of stress at work increase the risk of poor mental health for cancer clinicians and other senior doctors alike. Job satisfaction is important in that it appears to protect the mental health of cancer clinicians. Further work is required using a longitudinal approach to clarify risk factors. There is also a need to examine factors such as stress outside work that are likely to confer risk. We also need to understand how symptoms of poor mental health impair work performance. Having identified the risk factors, we need to begin to formulate interventions to improve the working lives of cancer clinicians through, for example, initiatives to improve communication and management skills, provide support to new consultants and facilitate teamwork.

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1. **Literature review of role stress/strain on nurses: an international perspective.**  
   Faculty of Health Sciences Yamaguchi University School of Medicine Ube 755-8554 Japan. E-mail: vickie@yamaguchi-yu.ac.jp Nursing & Health Sciences 2001;3(3):161-172.

The presence of role stress/strain among nurses has been of concern throughout the world. However, to date, no one has conducted, from an international perspective, a literature review of research on the topic. This article assesses research from 17 countries, identifies the major areas of focus in the studies, compares and contrasts the findings, summarizes the state of the science on role stress/strain on nurses and makes recommendations for future research.

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1. **Management of work-related stress in nursing.**  
   Harris N. Nursing standard (Royal College of Nursing (Great Britain) : 1987) 2001;16(10):47.

Evidence suggests that health professionals experience significant levels of occupational stress, which can lead to illness, increased absenteeism, high staff turnover, unsafe behaviour and increased accident rates. Nia Harris highlights strategies to manage and prevent high levels of stress at work.

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1. **Stress-related suicide by dentists and other health care workers. Fact or folklore?**  
   Alexander R. E Journal of the American Dental Association (1939) 2001;132(6):786-794.

BACKGROUNDThe media repeatedly portrays dentists and other health professionals as being at risk of committing suicide. While this message often is accepted without question, there are little reliable data available that verifies this alleged risk. The relationship between professional stress and suicide, if any, has not been substantiated or quantified.TYPES OF STUDIES REVIEWEDThe author evaluated the contemporary literature on stress and suicide in health professionals in an effort to verify or refute the widely held belief that dentists and other health care professionals are at higher risk of committing stress-related suicide. The author also surveyed dental schools to determine what efforts were being made to provide students with stress-management skills.RESULTSThe author found that there is little valid evidence that dentists are more prone to suicide than the general population, although some related data suggest that female dentists may be more vulnerable. Large-scale studies are needed before firmer conclusions can be reached. The author's survey shows that dental students generally receive some education on stress management, but many dental hygiene and graduate students do not. The author makes several recommendations for future research.CLINICAL IMPLICATIONSAlthough some dentists leave the profession by way of suicide or career change at a time when their careers should be the most rewarding, available data on stress and its impact on suicide incidence are inconclusive and flawed. The profession needs to identify the causes of stress-related suicides and provide assistance to those people who are affected by stress.

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1. **The inner life of physicians and care of the seriously ill**  
   Meier D.E. Journal of the American Medical Association 2001;286(23):3007-3014.

Seriously ill persons are emotionally vulnerable during the typically protracted course of an illness. Physicians respond to such patients' needs and emotions with emotions of their own, which may reflect a need to rescue the patient, a sense of failure and frustration when the patient's illness progresses, feelings of powerlessness against illness and its associated losses, grief, fear of becoming ill oneself, or a desire to separate from and avoid patients to escape these feelings. These emotions can affect both the quality of medical care and the physician's own sense of well-being, since unexamined emotions may also lead to physician distress, disengagement, burnout, and poor judgment. In this article, which is intended for the practicing, nonpsychiatric clinician, we describe a model for increasing physician selfawareness, which includes identifying and working with emotions that may affect patient care. Our approach is based on the standard medical model of risk factors, signs and symptoms, differential diagnosis, and intervention. Although it is normal to have feelings arising from the care of patients, physicians should take an active role in identifying and controlling those emotions.

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1. **Work-related stress and occupational therapy.**  
   Lloyd C. Occupational Therapy International 2001;8(4):227-243.

ABSTRACT: Occupational stress and burnout have been studied extensively in the human services. It has been suggested that healthcare professionals in particular are at risk of stress owing to the caring nature of their work. Articles related to occu-pational therapy and work-related stress were reviewed in regard to practice in Australia, Canada, the United Kingdom, the United States and Sweden. Although the empirical literature is relatively weak for occupational therapy, it has been argued that occupational therapists in health care share risk factors with other healthcare professionals. These risk factors include repeated exposure to distress and difficult behaviour, prolonged interventions and uncertain outcome. Issues such as profes-sional status, staffing issues and the nature of the profession have been identified as additional risk factors for occupational therapists. However, empirical studies that enable burnout rates of occupational therapists to be compared with those of related occupational groups suggest that this may not be the case. Occupational therapists may in fact be protected from some stress and burnout factors. Further research is recommended to clarify the nature of stress experienced by occupational therapists and to identify both risk and protective factors characteristic of the profession.

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1. **Can doctors self-manage stress?**  
   Herzberg J. Hospital medicine (London, England : 1998) 2000;61(4):272-274.

The NHS has expressed concern about stress in its workforce and is taking steps to reduce it. This paper reviews the factors associated with stress and burnout throughout a medical career. Clear messages emerge for all doctors and their employers.

1. **Reducing distress in first level and student nurses: a review of the applied stress management literature.**  
   Jones M. C Journal of advanced nursing 2000;32(1):66-74.

Following recent evidence of continuing high levels of distress in both trained and student nurses, a critical review of the stress reduction and stress management literature targeting both trained and student nurses is presented. Using a systematic approach, some 36 studies dating from 1980 until the present day were identified adopting either pre-experimental, quasi-experimental or experimental designs. While many work-site programmes in this series were successful in terms of adaptive changes in problem-solving, self-management skills including relaxation and interpersonal skills, affective well-being, and work performance, a number of design and evaluation inadequacies were identified. The relative lack of home-work interface or organizational level programmes to reduce work-related distress, and the scarcity of interventions targeting aspects of the work environment likely to contribute to such outcomes may have contributed to continuing high levels of distress in trained and student nurses. Recommendations regarding the future design, provision and evaluation of such work-site interventions include the further clarification of the structure of perceived stressors, and development of causal models of the stress process to identify the job characteristics 'causing' work-related distress. Such an approach would inform the design and implementation of evidence-based organizational level interventions augmenting strategies to target the health behaviour, lifestyle/risk factors and self-management skills of practitioners and students with attempts to amend problematic elements of the psychosocial work environment.

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1. **Stress and burnout in community mental health nursing: a review of the literature.**  
   Edwards D. Journal of psychiatric and mental health nursing 2000;7(1):7-14.

There is a growing body of evidence that suggests that many community mental health nurses (CMHNs) experience considerable stress and burnout. This review aimed to bring together the research evidence in this area for CMHNs working within the UK. Seventeen papers were identified in the literature, seven of which looked at stress and burnout for all members of community mental health teams (CMHTs) and the remaining 10 papers focused on CMHNs. The evidence indicates that those health professionals working as part of community teams are experiencing increasing levels of stress and burnout as a result of increasing workloads, increasing administration and lack of resources. For CMHNs specific stressors were identified. These included increases in workload and administration, time management, inappropriate referrals, safety issues, role conflict, role ambiguity, lack of supervision, not having enough time for personal study and NHS reforms, general working conditions and lack of funding and resources. Areas for future research are described and the current study of Welsh CMHNs is announced. This review has been completed against a background of further significant changes in the health service. In the mental health field, specific new initiatives will have a significant impact on the practice of community mental health nursing. A new National Framework for Mental Health, along with a review of the Mental Health Act (1983), will undoubtedly help to shape the future practice of mental health nursing.

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1. **The painful truth: physicians are not invincible.**  
   Miller N. M Southern medical journal 2000;93(10):966-973.

Physicians are not immune to psychosocial problems but may face unique impediments to attending to them. Self-care among physicians is not a topic generally included as a part of professional training, nor is it a topic that readily receives consideration in professional practice. The stresses of professional practice can exact a great toll, however, and self-neglect can lead to tragic consequences. In some areas, particularly suicide rates, physicians have increased vulnerability, and in other areas problems may be unrecognized (depression, substance abuse, marital problems, and other stress-related concerns). Female physicians show some particular areas of risk. In this paper, we raise questions about how and why physicians may be particularly vulnerable, review the available literature about the extent and nature of such problems in physicians, discuss possible factors related to the development of these problems in physicians, and suggest a variety of solutions to improve physician self-care.

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Click on the Search button (illustrated with binoculars). This will open up a search window. Type in the term you need to find and links to all of the references to that term within the document will be displayed in the window. You can jump to each reference by clicking it.

**Word documents**  
Select Edit from the menu, the Find and type in your term in the search box which is presented. The search function will locate the first use of the term in the document. By pressing 'next' you will jump to further references.

## B. Search History

|  | **Source** | **Criteria** | **Results** |
| --- | --- | --- | --- |
| 1. | Medline | ((frontline\* OR "front line" OR clinical OR medical OR health\* OR "health care" OR hospital\* OR nursing) ADJ (worker\* OR staff\* OR professional\* OR personnel\* OR employee\* OR assistant\* OR workforce\* OR "work force\*")).ti | 44154 |
| 2. | Medline | exp \*"HEALTH PERSONNEL"/ | 377267 |
| 3. | Medline | (medic OR medics OR clinician\* OR physician\* OR therapist\* OR doctor\* OR nurse\* OR "allied health professional\*" OR AHPs OR AHPs OR pharmacist\* OR physiotherapist\* OR specialist\* OR "healthcare support worker\*" OR "healthcare assistant\*" OR "health care support worker\*" OR "health care assistant\*" OR HCSW OR HCSWs OR HCA OR HCAs).ti | 308180 |
| 4. | Medline | (1 OR 2 OR 3) | 591245 |
| 5. | Medline | (risk\* ADJ factor\*).ti,ab | 592128 |
| 6. | Medline | exp "RISK FACTORS"/ | 828293 |
| 7. | Medline | (5 OR 6) | 1132487 |
| 10. | Medline | exp "STRESS, PSYCHOLOGICAL"/ | 131720 |
| 11. | Medline | ((psycho\*9 ADJ3 (injur\* OR harm\* OR damag\* OR stress\*)) OR burnout\* OR (burn\* OADJ out\*)).ti,ab | 39701 |
| 12. | Medline | (10 OR 11) | 151825 |
| 13. | Medline | (4 AND 7 AND 12) | 1790 |
| 14. | Medline | (4 AND 7 AND 12) [DT FROM 2000] [Document type Review] | 199 |
| 15. | EMBASE | ((frontline\* OR "front line" OR clinical OR medical OR health\* OR "health care" OR hospital\* OR nursing) ADJ (worker\* OR staff\* OR professional\* OR personnel\* OR employee\* OR assistant\* OR workforce\* OR "work force\*")).ti | 38532 |
| 16. | EMBASE | (medic OR medics OR clinician\* OR physician\* OR therapist\* OR doctor\* OR nurse\* OR "allied health professional\*" OR AHPs OR AHPs OR pharmacist\* OR physiotherapist\* OR specialist\* OR "healthcare support worker\*" OR "healthcare assistant\*" OR "health care support worker\*" OR "health care assistant\*" OR HCSW OR HCSWs OR HCA OR HCAs).ti | 329006 |
| 17. | EMBASE | exp \*"HEALTH CARE PERSONNEL"/ | 515686 |
| 18. | EMBASE | (15 OR 16 OR 17) | 724485 |
| 19. | EMBASE | (risk\* ADJ factor\*).ti,ab | 880718 |
| 20. | EMBASE | exp \*"RISK FACTOR"/ | 82804 |
| 21. | EMBASE | (19 OR 20) | 896574 |
| 22. | EMBASE | ((psycho\*9 ADJ3 (injur\* OR harm\* OR damag\* OR stress\*)) OR burnout\* OR (burn\* OADJ out\*)).ti,ab | 48636 |
| 23. | EMBASE | exp \*STRESS/ | 121131 |
| 24. | EMBASE | exp \*PSYCHOTRAUMA/ | 3344 |
| 25. | EMBASE | exp \*BURNOUT/ | 10290 |
| 26. | EMBASE | (22 OR 23 OR 24 OR 25) | 153157 |
| 27. | EMBASE | (18 AND 21 AND 26) | 556 |
| 28. | EMBASE | (18 AND 21 AND 26) [DT FROM 2000] [Publication types Review] [English language] | 40 |
| 29. | CINAHL | ((frontline\* OR "front line" OR clinical OR medical OR health\* OR "health care" OR hospital\* OR nursing) ADJ (worker\* OR staff\* OR professional\* OR personnel\* OR employee\* OR assistant\* OR workforce\* OR "work force\*")).ti | 31385 |
| 30. | CINAHL | (medic OR medics OR clinician\* OR physician\* OR therapist\* OR doctor\* OR nurse\* OR "allied health professional\*" OR AHPs OR AHPs OR pharmacist\* OR physiotherapist\* OR specialist\* OR "healthcare support worker\*" OR "healthcare assistant\*" OR "health care support worker\*" OR "health care assistant\*" OR HCSW OR HCSWs OR HCA OR HCAs).ti | 274462 |
| 31. | CINAHL | exp \*"HEALTH PERSONNEL"/ | 339838 |
| 32. | CINAHL | (29 OR 30 OR 31) | 538343 |
| 33. | CINAHL | (risk\* ADJ factor\*).ti,ab | 177746 |
| 34. | CINAHL | exp "RISK FACTORS"/ | 203418 |
| 35. | CINAHL | (33 OR 34) | 318118 |
| 36. | CINAHL | ((psycho\*9 ADJ3 (injur\* OR harm\* OR damag\* OR stress\*)) OR burnout\* OR (burn\* OADJ out\*)).ti,ab | 20200 |
| 37. | CINAHL | exp "STRESS, PSYCHOLOGICAL"/ OR exp "STRESS, OCCUPATIONAL"/ | 84750 |
| 38. | CINAHL | (36 OR 37) | 93282 |
| 39. | CINAHL | (32 AND 35 AND 38) | 481 |
| 40. | CINAHL | (32 AND 35 AND 38) [DT FROM 2000] [Publication types Meta Analysis OR Meta Synthesis OR Review OR Systematic Review] [Languages eng] | 56 |
| 41. | EMCARE | ((frontline\* OR "front line" OR clinical OR medical OR health\* OR "health care" OR hospital\* OR nursing) ADJ (worker\* OR staff\* OR professional\* OR personnel\* OR employee\* OR assistant\* OR workforce\* OR "work force\*")).ti | 18191 |
| 42. | EMCARE | (medic OR medics OR clinician\* OR physician\* OR therapist\* OR doctor\* OR nurse\* OR "allied health professional\*" OR AHPs OR AHPs OR pharmacist\* OR physiotherapist\* OR specialist\* OR "healthcare support worker\*" OR "healthcare assistant\*" OR "health care support worker\*" OR "health care assistant\*" OR HCSW OR HCSWs OR HCA OR HCAs).ti | 138719 |
| 43. | EMCARE | exp \*"HEALTH CARE PERSONNEL"/ | 211166 |
| 44. | EMCARE | (41 OR 42 OR 43) | 258551 |
| 45. | EMCARE | (risk\* ADJ factor\*).ti,ab | 220383 |
| 46. | EMCARE | exp \*"RISK FACTOR"/ | 38772 |
| 47. | EMCARE | (45 OR 46) | 228880 |
| 48. | EMCARE | ((psycho\*9 ADJ3 (injur\* OR harm\* OR damag\* OR stress\*)) OR burnout\* OR (burn\* OADJ out\*)).ti,ab | 19302 |
| 49. | EMCARE | exp \*STRESS/ | 33494 |
| 50. | EMCARE | exp \*PSYCHOTRAUMA/ | 1236 |
| 51. | EMCARE | exp \*BURNOUT/ | 6341 |
| 52. | EMCARE | (48 OR 49 OR 50 OR 51) | 45063 |
| 53. | EMCARE | (44 AND 47 AND 52) | 293 |
| 54. | EMCARE | (44 AND 47 AND 52) [DT FROM 2000] [Publication types Review] [English language] | 34 |
| 55. | BNI | ((frontline\* OR "front line" OR clinical OR medical OR health\* OR "health care" OR hospital\* OR nursing) ADJ (worker\* OR staff\* OR professional\* OR personnel\* OR employee\* OR assistant\* OR workforce\* OR "work force\*")).ti | 8046 |
| 56. | BNI | (medic OR medics OR clinician\* OR physician\* OR therapist\* OR doctor\* OR nurse\* OR "allied health professional\*" OR AHPs OR AHPs OR pharmacist\* OR physiotherapist\* OR specialist\* OR "healthcare support worker\*" OR "healthcare assistant\*" OR "health care support worker\*" OR "health care assistant\*" OR HCSW OR HCSWs OR HCA OR HCAs).ti | 83173 |
| 57. | BNI | "MEDICAL PERSONNEL"/ | 11723 |
| 58. | BNI | (55 OR 56 OR 57) | 99430 |
| 59. | BNI | (risk\* ADJ factor\*).ti,ab | 18668 |
| 60. | BNI | "RISK FACTORS"/ | 15238 |
| 61. | BNI | (59 OR 60) | 27906 |
| 62. | BNI | ((psycho\*9 ADJ3 (injur\* OR harm\* OR damag\* OR stress\*)) OR burnout\* OR (burn\* OADJ out\*)).ti,ab | 4225 |
| 63. | BNI | STRESS/ | 6606 |
| 64. | BNI | (62 OR 63) | 10157 |
| 65. | BNI | (58 AND 61 AND 64) | 62 |
| 66. | BNI | (58 AND 61 AND 64) [DT FROM 2000] [Document type Review] | 3 |
| 67. | PsycINFO | ((frontline\* OR "front line" OR clinical OR medical OR health\* OR "health care" OR hospital\* OR nursing) ADJ (worker\* OR staff\* OR professional\* OR personnel\* OR employee\* OR assistant\* OR workforce\* OR "work force\*")).ti | 10319 |
| 68. | PsycINFO | (medic OR medics OR clinician\* OR physician\* OR therapist\* OR doctor\* OR nurse\* OR "allied health professional\*" OR AHPs OR AHPs OR pharmacist\* OR physiotherapist\* OR specialist\* OR "healthcare support worker\*" OR "healthcare assistant\*" OR "health care support worker\*" OR "health care assistant\*" OR HCSW OR HCSWs OR HCA OR HCAs).ti | 59969 |
| 69. | PsycINFO | exp \*"HEALTH PERSONNEL"/ | 119722 |
| 70. | PsycINFO | (67 OR 68 OR 69) | 155890 |
| 71. | PsycINFO | exp "RISK FACTORS"/ | 81339 |
| 72. | PsycINFO | (risk\* ADJ factor\*).ti,ab | 86950 |
| 73. | PsycINFO | (71 OR 72) | 125491 |
| 74. | PsycINFO | ((psycho\*9 ADJ3 (injur\* OR harm\* OR damag\* OR stress\*)) OR burnout\* OR (burn\* OADJ out\*)).ti,ab | 37589 |
| 75. | PsycINFO | exp STRESS/ | 116033 |
| 76. | PsycINFO | (74 OR 75) | 132715 |
| 77. | PsycINFO | (70 AND 73 AND 76) | 378 |
| 78. | PsycINFO | (70 AND 73 AND 76) [DT FROM 2000] [Languages English] [Methodology Literature Review OR Meta Analysis OR Systematic Review] | 23 |

NICE Evidence Search at [www.evidence.nhs.uk](http://www.evidence.nhs.uk) searched using the terms "risk factor\*" and "psychological stress\*" and (doctor\* or nurse\* or physician\* or staff\*): [https://www.evidence.nhs.uk/search?from=01%2F01%2F2000&q=%22risk+factor\*%22+and+%22psychological+stress\*%22+and+%28doctor\*+or+nurse\*+or+physician\*+or+staff\*%29&to=18%2F09%2F2020&Route=search&ps=100](https://www.evidence.nhs.uk/search?from=01%2F01%2F2000&q=%22risk+factor*%22+and+%22psychological+stress*%22+and+%28doctor*+or+nurse*+or+physician*+or+staff*%29&to=18%2F09%2F2020&Route=search&ps=100)

Cochrane Library at [www.cochranelibrary.com](http://www.cochranelibrary.com) searched using the terms "risk factor\*" and (psycho\* or stress\*) and (doctor\* or nurse\* or physician\* or staff\*) in Title Abstract Keyword fields.

ERIC database at <https://eric.ed.gov/> searched using the terms "risk factor\*" and (psycho\* or stress\*) and (doctor\* or nurse\* or physician\* or staff\*): [https://eric.ed.gov/?q=%22risk+factor\*%22+and+%28psycho\*+or+stress\*%29+and+%28doctor\*+or+nurse\*+or+physician\*+or+staff\*%29](https://eric.ed.gov/?q=%22risk+factor*%22+and+%28psycho*+or+stress*%29+and+%28doctor*+or+nurse*+or+physician*+or+staff*%29)

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