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Factors contributing to burnout and work-life balance in adult oncology nursing: An integrative review

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ABSTRACT

Purpose: Occupational stress and burnout are highlighted as the most prevalent workplace issues for adult oncology nurses. With today's global nursing workforce shortage; coupled with oncology being an inherently challenging and complex speciality, this clearly indicates the need to understand factors that contribute to burnout in adult oncology nurses and improve work-life balance. The aim of this integrative review is to synthesis the evidence on burnout and work-life balance for adult oncology nurses.

Method: A systematic search of four databases (CINAHL, Ovid Medline, PsycINFO and Scopus), identified 17 quantitative and three mixed-method studies. Studies were critically appraised using the Mixed Methods Appraisal Tool. Following data extraction, a qualitative evidence synthesis utilising an inductive approach was adopted to better understand influential factors, generating analytical themes.

Results: One study had a specific focus on what ameliorates work-life balance for oncology nurses; depicting an area that warrants further study. All studies reported on burnout, of which six analytical themes were further categorised into two broad themes, namely: (1) 'Inability to thrive': struggling with workplace burnout due to organisational challenges and (2) 'Personal perspectives influencing burnout', for adult oncology nurses. Burnout was influenced by multiple oncology-specific factors due to quantitative workload demands and disease acuity. Workplace culture, shift in additional hours being worked remotely and personal characteristics of the nurse, also influenced susceptibility for the development of burnout in oncology nurses.

Conclusion: Confronting burnout and promoting wellness are the shared responsibility of both individual adult oncology nurses and their organisations to build resilience and help sustain and build workforce capacity.

1. Introduction

Providing high-quality, person-centred care to patients and their families with a potentially life-threatening illness, such as cancer, can afford nurses with an immense level of satisfaction (Barrett and Yates 2002). Adult oncology nursing is a rewarding profession and derives high levels of intellectual stimulation, especially with evolving scientific discoveries being translated steadily into clinical practice (Toh et al., 2012). However, a large body of international evidence would suggest that oncology professionals are subject to greater occupational stress than healthcare workers in any other speciality (Eelen et al., 2014, Gomez-Urquiza et al., 2016, Shanafelt et al., 2016 and Murali et al., 2018). In oncology units, due to the nature of the speciality, nurses are inherently dealing with those in receipt of a cancer diagnosis which evokes much fear and uncertainty. Consequently, oncology nurses are frequently communicating bad news, confronted with supporting patients and relatives in the grieving process and involved in decision-making for ethically complex situations (Grech et al., 2018). This is coupled with the responsibility of delivering highly complex care, often to ill patients. These factors can contribute to chronic stress and can provoke significant burnout (Emold, 2011).

Burnout was first described in the 1970s as a condition that occurs when work, combined with additional life pressures exceeds the ability to cope, resulting in physical and mental distress (Freundenberger 1974). Burnout was further characterised by Maslach in the 1980s (Maslach and Jackson 1981; Maslach et al., 1986), as typically developing slowly along a continuum and conceptualised as a three-dimensional syndrome, comprising of: (1) *emotional exhaustion*

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(EE), (2) *depersonalisation* (DP) and (3) low sense of *personal accomplishment* (PA). This model theories that as an individual's EE intensifies, empathy declines (DP) and a low sense of personal accomplishment (PA) follows. More recently, Barnard et al. (2006) and Guo et al. (2019) reported burnout as a recognised occupational disease in some European counties. In May 2019, the World Health Organisation (WHO) added burnout to the 11th revision of the International Classification of Diseases (ICD-11), portraying it as a syndrome of three dimensions, akin to that of Maslach; including feelings of energy depletion or exhaustion, increased mental distance from one's job or feelings of cynicism or negativism about one's job, and reduced professional efficacy (International Classification of Disease 2019).

The phenomenon of burnout among adult cancer nurses inevitably has a negative impact on their well-being, home life, work and relationships, causing irritability sleeplessness, fatigue and for some can lead to alcohol and drug consumption (McMillan et al., 2016; Canadas-De la Fuente et al., 2018). The adverse effects of burnout can also place demands on healthcare organisations. Patient care can be compromised due to suboptimal care delivery and higher rates of treatment errors. These factors, in conjunction with increased absenteeism and sick leave (Magtibay et al., 2017), collectively cost the health service millions of pounds (Arigoni et al., 2009; Banerjee et al., 2017).

Various studies have been undertaken to evaluate both prevalence rates and influencing factors contributing to the development of burnout for oncology nurses, such as age, education, length of employment, job satisfaction and workload; resultant in disparate findings (Giarelli et al., 2016; Duarte and Pinto-Gouveia 2017; Kotpa et al., 2017). Conversely, relatively less attention has been given to the impact of work-life balance on the emotional well-being of adult oncology nurses. Unlike the concept of burnout, there is a lack of widely accepted validated tools to measure work-life balance and no universally accepted definition available; nonetheless, the concept is complex. Suggested definitions for work-life balance include 'equilibrium or an overall sense of harmony in work and private life' (Clarke et al., 2004) or 'an adequate amount of resources to respond effectively to the demands of their work and family roles' (Valcour, 2007). Anandan and Karthikeyan (2016) purport if you can fulfil the respective demands in a way that satisfies you, then it is reasonable to say you have the right balance between work and family life. For the purpose of this study we will operationally define work-life balance as having sufficient time, energy and resources to meet the commitments of home and work.

Within the field of adult oncology nursing, burnout and inadequate work-life balance has many implications on the availability of a skilled workforce, as burnout has been correlated with poorer staff retention of oncology nurses, a desire to change speciality, reduce working hours or retire early (Langerlunf et al., 2015). A recent study in the United Kingdom (Macmillan Cancer Support, 2017) found an increased shortage of adult oncology nurses, across a range of specialist settings, amid an expanding cancer workforce. This is compounded by the globally nursing workforce shortage. Combined with an ever-growing cancer population, this clearly indicates the need to understand the factors that contribute to both burnout in oncology nurses and those that improve their work-life balance, in an effort to enhance and promote resilience for the oncology nursing workforce.

2. Aim

The aim of this integrative review was to gain an improved understanding of influential factors contributing to burnout and work-life balance for nurses working in adult oncology by synthesising the evidence. More specifically, to address the following two research questions:

What factors contribute to burnout for nurses working in an adult oncology setting?

What factors influence work-life balance for adult oncology nurses?

3. Methods

An integrative review design was used as a framework for ensuring comprehensive inclusion, appraisal and synthesis of a range of qualitative, quantitative and mixed-method studies (Hopia et al., 2016).

3.1. Search strategy

A range of keywords were identified during the scoping and preliminary literature search phase. A table of keywords were identified by the research team using Population; Interest, Outcome (PIO) (see Table 1).

The medical subject headings (MesH) used included oncologic nursing, burnout, professional and work-life balance. In consultation with an experienced librarian the search sensitivity was expanded utilising keywords and truncation where applicable. Keyword searches included, oncology nurs*, cancer nurs*, oncology professional, burnout, burnout, occupational stress, stress and "worklife balance". In order to broaden or narrow the search results, Boolean operator "OR" and "AND" were utilised. The search was limited to publications written in English that were published between 2009 and 2019, to ensure the focus of this integrative review was relevant to recent studies addressing workforce issues. The search strategy used the following four electronic databases, CINAHL, Ovid Medline, PsycINFO (PsycINFO search strategy provided in Appendix 1) and Scopus and was conducted in December 2019 by the first author (LG). To ensure the identification of literature not listed in the electronic databases, grey literature searches were conducted using google scholar and manual searches of reference lists from extracted articles.

3.2. Inclusion and exclusion criteria

Inclusion and exclusion criteria were applied. Studies included were: primary research papers, published in English, available in full-text, using quantitative, qualitative or mixed-methods, across any healthcare setting that focused on burnout or work-life balance for adult oncology nurses, published between 2009 and 2019. Secondary research, systematic reviews, opinion articles, editorials and research that focused on paediatric oncology nursing were excluded. Studies were also excluded that did not specifically address burnout and/or work-life balance and studies that were multiprofessional where the nursing information was not clearly segregated.

3.3. Data screening

The initial search from the four electronic database searches and the grey literature were collated in RefWorks (being a reference management software tool) by LG (first author), generating a total of 88 studies, of which 37 duplicates were removed. The remaining 51 studies were reviewed by title and abstract, being screened to identify studies that met the inclusion and exclusion criteria. Based on this screening, 34

Table 1
PIO search terms for integrative review.

PIO component	Key terms	Final search synonyms
Population	Registered nurse	Nursing "Nurs" Oncology nurs* Cancer nurs*
Interest	Working in oncology	Oncology professional
Outcome measures	Burnout Work-life balance	Burnout Burn-out Stress Occupational stress Compassion fatigue "worklife balance"

articles were selected for full-text screening. Once full-text articles were screened against the inclusion and exclusion criteria, 14 studies were excluded, resulting in 20 eligible papers. The process of identification, screening, eligibility and inclusion is displayed in a PRISMA flowchart, Fig. 1. The process was confirmed by the second author (CS).

3.4. Data extraction and appraisal

To enhance rigour, data were extracted independently by both authors using an extraction form. The following relevant characteristics were extracted: author (s), year, country, study aim (s), research design, sample size and characteristics, key findings, outcomes while noting strengths and limitations of each study (Table 2). The studies were critically appraised using the Mixed Methods Appraisal Tool (MMAT) by CS (Hong et al., 2018). In keeping with guidance provided for MMAT (Hong et al., 2018) a scoring matrix has not been applied to this integrative review, but instead each study has been classified as high, moderate or low quality. The earlier 2011 version of the MMAT has a scoring matrix, however, the authors of the most recent, 2018 version, discourage the use of matrix, purporting that a single number is not informative. All studies were retained irrespective of their MMAT classification, as represented in Table 2, to ensure the integrative review was as comprehensive as possible.

3.5. Data analysis and synthesis

The focus of this integrative review was to gain an improved understanding of influential factors contributing to burnout and work-life balance for oncology nurses, therefore extracted data for all 20 studies were converged for the purpose of a qualitative evidence synthesis and subject to thematic synthesis. This inductive approach was adopted and deemed appropriate, primarily due to the aim of this integrative review, in gaining an improved understanding of a complex phenomenon and generating higher-order themes following the aggregation of exiting

Fig. 1. Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) diagram for current study.

Table 2
A summary of the included studies.

Authors/year Country	Study aim (s)	Study design/	Outcome measures	Sample characteristics	Key findings	MMAT
Cheng et al. (2015) China	Relationship between job burnout and professional values in oncology nurses	Quantitative: Descriptive correlation study	Maslach Burnout Inventory (MBI) Nurse Professional Values Scale	n = 328 nurses directly involved in the clinical care of cancer patients	High level of burnout among oncology nurses Caring was the top concern for oncology nurses and took actions to improve quality of nursing care MBI ➢ 45%: had high EE ➢ 94%: had low DP ➢ 66%: had high PA Job burnout and caring were positively correlated EE and DP were negatively correlated with professional value, whereas PA was positively correlated with professional value ➢ Nurses feel valued and job important reduced burnout, whereas if young isn't valued then burnout occurs	**High**
Davis et al. (2013) USA	Investigate differences in burnout among oncology nurses by type of work setting (in-patient v out-patient), coping strategies and job satisfaction	Quantitative: Observational, descriptive	Nursing satisfaction and retention survey Maslach burnout inventory (MBI)	Convenience sample of n = 74 full time oncology nurses	22% had high EE Burnout was lowest in staff < 40yrs old ➢ Increased yrs. Experience = decreased BO ➢ Poor staffing levels = increased BO ➢ Support from colleagues and spirituality were protective factors against burnout. ➢ EE and burnout higher in outpatient nurses compared to inpatient nurses. ➢ Inverse correlation between EE and job satisfaction and a desire to leave oncology nursing	**Moderate**
De la Fuente-Solana et al., 2017 Spain	Analyse relationship between burnout and personality factors for oncology nurses	Quantitative: observational, cross sectional multi-centre study.	Maslach burnout inventory (MBI) NEO-FFI to assess personality traits Educational-Clinical questionnaire	Convenience sample n = 101 nurses working in oncology units	Burnout - 29.6% had severe burnout Personality has a key role in developing burnout ➢ EE and DP positively associated with neuroticism, whereas PA was negatively associated ➢ Increased EE and DP had positive correlation with anxiety and depression ➢ PA had negative correlation with anxiety and depression No significant relationship with burnout correlated with age, marital status or having children Significant negative relationship with rotating shifts ➢ Increased anxiety/depression = Increased burnout. ➢ Personality factors play a key role in increased Burnout ➢ Increased neuroticism increases BO	**Moderate**
Duarte and Pinto-Gouveia (2017)	Examine the relationship between dimensions of empathy, self-compassion, psychological flexibility, compassion satisfaction and burnout for oncology nurses.	Quantitative: Cross-sectional convenience sample, multi-sites	Professional QOL scale ProQOL-5	221 oncology nurses from several public hospitals, oncology/ palliative care units	➢ Nurses who are more self-judgemental and psychologically inflexible = increase burnout (29%) and compassion fatigue (18%)	**High**

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Table 2 (*continued*)

Authors/year Country	Study aim (s)	Study design/	Outcome measures	Sample characteristics	Key findings	MMAT
					➢ Years of experience did not independently influence burnout	
Portugal			Interpersonal Reactivity Index		➢ Increased years in current position significantly correlated with increased burnout	
			IRI		➢ Negative association with psychological inflexibility and increased burnout, explaining 29% of the variance ➢ Empathy and self-compassion decrease burnout symptoms and increase compassion satisfaction	
			Self-Compassion Scale SCS			
			Acceptance and Action Questionnaire			
Eelen et al. (2014)	Investigate the prevalence of burnout among oncology professionals	Quantitative: Multi-centred observational study	Maslach burnout inventory (MBI)	n = 550 oncology professionals, including 483 nurses	22.2% specialist nurses and 20.8% nurses in oncology had problematic levels of EE ➢ Females' greater risk of burnout	**High**
Belgium			Job satisfaction		➢ Work setting is a major factor in burnout scores, with increased burnout when combining work in private hospitals and university hospitals ➢ No significant effect of age, experience or marital status on BO ➢ Specialist nurses' lower level of EE and DP, with increased PA than other nurses and professionals	
Emold et al. (2011)	To examine the association between communication, self-efficacy, working environment perception and burnout among oncology nurses	Quantitative: Multi-centred observational study	Maslach burnout inventory (MBI)	n = 39 oncology nurses from 6 oncology units	➢ 60% had increased EE relatively frequently (several times a month) ➢ 82% reported positive, professional self-actualisation often	**Moderate**
Israel			Communication skills self-efficacy inventory		➢ 72% reported cynicism towards their work only rarely ➢ Increased communication skills reduced EE and BO.	
			Working environment scale		➢ Higher levels of EE and cynicism associated with lower self-esteem ➢ Statistically significant association between self-efficacy and burnout ➢ Positive perception of work environment reduced EE and BO.	
Giarelli et al. (2016)	To examine factors that influenced nurses perceived quality of work-life and risk of compassion fatigue	Mixed methods study – descriptive	Self-report questionnaire covering level of personal stress & quality of work life	n = 20 haemato/oncology nurses in a haemato/oncology unit in a large teaching hospital	➢ 30% nurses had high levels of burnout	**Moderate**
					➢ 30% had severe impact of event scale (impact on wellbeing from personal life events).	
USA			Impact of events scale		➢ Overall work experience as affirming ➢ Sources for work-related stress included: communication breakdown, reduced	

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Table 2 (*continued*)

Authors/year Country	Study aim (s)	Study design/	Outcome measures	Sample characteristics	Key findings	MMAT
					resources, increased work-load, family/patient expectations	
			Life events scale		➢ No relationship between personal life and compassion fatigue – major source of risk is the social aspects of the working environment ➢ Having a health work-life balance mitigated for burnout	
			ProQOL		➢ 90% desire to remain in oncology nursing	
Yu et al. (2016) China	To explore the prevalence of Compassion fatigue (CF), Burnout and Compassion satisfaction (CS) among oncology nurses	Quantitative: Cross sectional design survey	Pro-QOL	Convenience cluster sample n = 650 oncology nurses from 10 tertiary hospitals and 5 secondary hospitals	Higher rates of burnout and CF in nurses ➢ More than 15 years experience	**High**
			Jefferson scale of empathy		➢ Adopted passive coping	
			Coping style questionnaire		➢ Unmarried ➢ Personality type - neuroticism ➢ Passive coping or neuroticism- this is strongest predictor of CF	
			Perceived social support scale		Decreased burnout with ➢ Additional Training ➢ Occupational support	
			Chinese big 5 personality inventory -brief version		➢ Cognitive empathy ➢ Positive personality traits (openness and conscientiousness)	
					Training (on alleviating death-related grief, psychological care of cancer patients, psychological adjustment for nurses) improved compassion satisfaction	
Kamisli et al. (2017) Turkey	Evaluate the clinical perception of oncology nursing	Mixed methods study: self-evaluation scale and face to face interviews	Caring Assessment Questionnaire (Care-Q)	n = 70 oncology nurses	Reported challenges that increased burnout included: ➢ Younger nurses ➢ Inexperienced	**Low**
			Quality of Oncology Nursing Care Scale (QONCS)		➢ Complex disease and treatments ➢ Frequent patient deaths ➢ Physical/emotional Exhaustion ➢ Psychology problems of the patients	
					Protective burnout factors included: ➢ Increased Years of experience ➢ Job satisfaction ➢ Clinical skills ➢ Emotional support ➢ Perception of life	
Kolpa et al. (2017) Poland	Investigate the scale of professional burnout among nurses working in haemato-oncology wards	Quantitative: Descriptive survey	Maslach Burnout Inventory (MBI)	n = 100 haemato-oncology nurses working in 2 hospitals in Poland	Prevalence of burnout: ➢ 62% had acute EE ➢ 30% showed DP ➢ 64% had low/no PA.	**Moderate**
					Increased burnout ➢ Older nurses (over 40yrs) ➢ Less experienced	
					Decreased burnout with increased: ➢ Competence	

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Table 2 (*continued*)

Authors/year Country	Study aim (s)	Study design/	Outcome measures	Sample characteristics	Key findings	MMAT
					➢ Education ➢ Job satisfaction	
McMillan et al. (2016) Australia 2016	Prevalence of burnout and individual factors associated with burnout among cancer nurses	Quantitative: Cross sectional, online survey	Maslach Burnout Inventory – General Scale (MBI - GS) Areas of worklife survey Psychosocial care questions	n = 230 haemato-oncology nurses providing care to cancer patients from a variety of organisations	Burnout was lower than the norms for nurses Factors associated with burnout: ➢ Belief about adequacy of training ➢ Frequency of supervision ➢ Sense of control over work ➢ Heavy workload and lack of support ➢ Dissatisfaction with pay Lack of community, predictor of cynicism	**Moderate**
Neumann et al. (2018) USA	Determine prevalence of and factors contributing to work-related distress, plus to examine perceptions of work–life balance and career satisfaction and their association with burnout.	Quantitative: Cross sectional web-based survey	Maslach Burnout Inventory (MBI) Moral distress scale Work-life balance – single -item scale Career satisfaction-single item scale	n = 1514 from 6 professional groups, including 763 nurses' hospital or clinic-based staff	Predicators of burnout: for nurses: ➢ Longer working hours (nurses working >50 h/wk Had 2.3-fold increase in burnout) ➢ Working in out-patients ➢ Higher workload demand ➢ Moral distress ➢ Nurses over 40yrs old (increased DP) Inpatient nurses had less EE than outpatient and Career satisfaction = decreased burnout Increased burnout: ➢ Inadequate work-life balance (32% nurses that work schedules didn't give enough time for personal or family life) ➢ Increased hours spent working at home on research tasks and ➢ High acuity work environments and complex treatments and ➢ More patient deaths Burnout associated with career satisfaction	**High**
Ostacoli et al. (2010) Italy	Comparison of burnout symptoms for oncology nurses working in hospital oncology units or in hospices	Quantitative: observational study	Maslach Burnout Inventory (MBI) Hospital anxiety and depression scale Attachment style questionnaire	n = 92 oncology nurses from hospital units (n = 59) and hospices (n = 33)	Clinical setting influenced all levels of burnout Nursing in hospital unit compared to hospice _ ➢ Increased EE, DP and lower PA Working in hospice acted as a protective factor against burnout: ➢ Depression increased EE and reduced PA ➢ Absence of significant difference in anxiety and depression in relation to burnout among the two groups of nurses	**Moderate**
Park and Ahn (2015) Korea	Relation of compassion competence to burnout, job stress turnover intention job satisfaction and organisational commitment in oncology nurses	Quantitative: Descriptive correlation	Not reported	n = 419 oncology nurses working in a cancer centre	Increased burnout: ➢ Unmarried ➢ Inpatient nurses ➢ Younger - aged 26-30 ➢ Higher turnover intention Job stress lower in older nurses and married and inpatient wards Improved compassionate competence and decreased BO	**Moderate**

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Table 2 (*continued*)

Authors/year Country	Study aim (s)	Study design/	Outcome measures	Sample characteristics	Key findings	MMAT
					with organisational commitment and training Job satisfaction higher: ➢ Married ➢ Senior nurses ➢ Working longer than 11 years and full-time	
Perry et al. (2011) Canada	Exploration of the experience of compassion fatigue in clinical oncology nurses	Qualitative: Descriptive exploratory Participants completed a framework called the stress process model. Narratives were analysed thematically	Participants wrote a narrative	n = 19 clinical oncology nurses	Compassion fatigue and BO reduced with ➢ satisfactory work life balance ➢ good teamwork ➢ maturity ➢ experience ➢ acknowledgement from pts and colleagues Compassion fatigued, and BO increased with: ➢ lack of support from colleagues ➢ insufficient time ➢ over 40 yrs. ➢ patient suffering ➢ unrealistic expectations ➢ personal health struggles ➢ increased compassion fatigue had negative effects on home life and personal relationships ➢ home stressors had a direct effect on compassion fatigue at work	**Moderate**
Potter et al. (2010) USA	To explore prevalence of burnout and compassion fatigue among oncology staff in a large oncology medical centre	Quantitative: Descriptive cross-sectional study	Professional Quality of Life (ProQOLR-IV) scale	n = 53 oncology professionals.	Clinical environment of inpatient v outpatient: ➢ Inpatient nurses • 44% BO and 37% CF ➢ Outpatient nurses • 33% BO and 35% CF ➢ Not statistically significant* between groups* Trends notes but not statistically significant: ➢ Inpatient nurses had less compassion satisfaction than outpatient nurses* ➢ Nurses with 11–20 years of oncology experience had highest BO scores and highest CF scores* ➢ Nurses with advanced degrees had higher risk scores for burnout* ➢ Reduced burnout with effective leadership and team work	**Moderate**
Russell (2016) USA	To identify perception of burnout within inpatient oncology nurses	Quantitative: descriptive study	Maslach Burnout Inventory (MBI)	n = 61 inpatient nurses from 3 hospital units	Moderate level of perceived burnout Due to: ➢ Increased nurse: patient ratio ➢ Skipped or missed breaks ➢ High level of demand ➢ Poor staffing ➢ Lacking resources Protective measures: ➢ Adequate resources ➢ Collaboration among staff ➢ Adequate sleep/rest ➢ Team work increased burnout caused by	**Moderate**

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Table 2 (*continued*)

Authors/year Country	Study aim (s)	Study design/	Outcome measures	Sample characteristics	Key findings	MMAT
Taleghani et al., (2017) Iran	To define the level of empathy and its association with burnout and demographic characteristics of oncology nurses	Descriptive correlation study Quantitative questionnaire	Jefferson scale of nurse empathy	67 oncology nurses working at least 1 year in a professional oncology hospital in Iran	➢ Complex treatments Maslach Burnout Inventory (MBI) ➢ Patient death ➢ Close relationships with patients/family ➢ Decreased staffing levels ➢ Increased workload ➢ Psychological issues in nurse	
Negative relationship between empathy and burnout (inverse correlation)	Decreased burnout: ➢ Increased empathy ➢ Work experience (most influential factor) ➢ No correlation with factors such as, marital status or education ➢ Inverse correlation with age and BO.					
Woonhwa and Kiser-Larson (2016) USA	Identify stress levels and stressful factors of nurses working in oncology outpatient units and to explore coping behaviours for work-related stress of oncology staff nurses in outpatient units.	Mixed- methods	Nursing stress scale 3 open ended questions	n = 40 participants from 4 outpatient oncology units.	➢ Over 50% (21) had moderate stress Greatest stress factors: ➢ workload ➢ patient death Highest burnout scores: ➢ aged 41-50 ➢ married ➢ 11–15 years in oncology ➢ Degree educated The three most frequently used coping behaviours to relieve occupational stress were verbalizing, exercising or relaxing, and taking time for self Variables of marital status, education level, and work experience in oncology units showed no significant differences on stress levels	**Low**
Wu et al. (2016) USA and Canada	To examine the experiences of compassion fatigue, burnout and compassion satisfaction among oncology nurses	Quantitative: descriptive, non-experimental online survey	Professional Quality of Life (ProQO) scale Modified Abendroth demographic questionnaire	n = 486 USA nurses and n+63 Canadian nurses	Increased Burnout scores in; ➢ Younger nurses <40, more prone to secondary traumatic stress and increased compassion fatigue and BO Reduced burnout and CF and increased CS: ➢ Cohesiveness within teams ➢ Supportive work environments ➢ Increased experience (26yrs or more)	**Moderate**

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Table 2 (*continued*)

Authors/year Country	Study aim (s)	Study design/	Outcome measures	Sample characteristics	Key findings	MMAT
					➢ Higher level education (masters doctoral degrees) ➢ Nurses who worked more hrs	

evidence. In this context, findings reported across studies were used to explore similarities and/or differences between different studies (Mayes et al., 2005). Thematic analysis provided a means of organising and summarising the findings from this relatively large and somewhat diverse body of research.

The following process was utilised, which commenced by both authors reading and re-reading the papers, followed by independent extraction of data onto an extraction form. The first author (LG) coded the findings of the included studies according to its meaning and content, which was checked by the second author (CS), with disparities resolved through face-to-face discussion. Following this step, was the development of descriptive themes at team meetings (LG and CS, both authors), which involved translating and comparing the concepts from one study to another and a hierarchical structure was created by grouping the codes based on similarities and differences between the codes and potential relationships to the findings. The final step was initially conducted independently by both authors, which was the generation of analytical themes that went beyond the content of the original articles. Following discussion, the emergence of six analytical themes were identified and these were further categorised into two broad themes to determine the key messages. This process of thematic analysis offers good transparency and outcomes are accessible.

4. Results

4.1. Overview

Twenty studies were included in the review. The majority of the studies in this integrative review originated from North America (n = 8) (Davis et al., 2013; Giarelli et al., 2016; Neumann et al., 2018; Perry et al., 2011; Potter et al., 2010; Russell 2016; Woonhwa and Kiser-Larson 2016; Wu et al., 2016), followed by Europe (n = 6) (Duarte and Gouveia 2017; Eelen et al., 2014; Emilia et al., 2017; Kamisli et al., 2017; Kotpa et al., 2017; Ostacoli et al., 2010), then Asia (n = 5) (Cheng et al., 2015; Emold et al., 2011; Yu et al., 2016; Park and Ahn 2015; Taleghani et al., 2017), with the final one originating in Australia (McMillan et al., 2016). Of the 20 studies, 17 were quantitative and three adopted a mixed methods approach. Whilst no study was excluded solely on the merit of the quality assessment appraisal, two studies were rated low quality, four high quality and the remainder moderate. Full characteristics of the included studies are presented in Table 2.

Of note, only one study had a specific focus on what ameliorates work-life balance for oncology nurses (Neumann et al., 2017), which clearly depicts an area that warrants further study. What can be drawn from this study of Neumann and colleagues is that work-life balance is associated with burnout, with approximately one third of the oncology nurses feeling that their work schedule did not provide enough time for personal or family life. Hence, the remainder of the findings will focus solely on the data pertaining to burnout.

From the six analytical themes, the two broad themes were: (1) 'Inability to thrive': struggling with workplace burnout due to organisational challenges' and (2) 'Personal perspectives influencing burnout', for oncology nurses.

Theme 1: 'Inability to thrive': struggling with workplace burnout due to organisational challenges.

Nearly all of the studies reviewed reported on a range of organisational factors which influenced the development of burnout among adult oncology nurses. Factors influencing burnout will be discussed under the following subthemes: (1) demands from workload and clinical setting, (2) impact of work colleagues and (3) culture of the working environment.

(1) Demands of workload and clinical setting

Although a variety of organisational factors contributed to burnout among adult oncology nurses, a prominent area highlighted in many of the studies was the direct correlation between burnout and an increased workload (Taleghani et al., 2017; Neumann et al., 2017; McMillan et al., 2016; Giarelli et al., 2016; Woonhwa and Kiser-Larson 2016). Despite McMillan et al.'s (2016) study identifying workload as the most significant independent factor in the development of burnout among adult oncology nurses, deliberation should be given to other aspects, such as unsocial shift patterns (Neuumann et al., 2017).

Other specific components of workload that impacted on adult oncology nurses' experience of burnout were a lack of time allocated to provide high-quality person-centred care (Perry et al., 2011; Neumann et al., 2018), staff shortages (Davis et al., 2013,Taleghani et al., 2017 and Russell 2016), insufficient breaks or annual leave (Russell 2016) and poor staff: patient ratios (Russell 2016 and Potter et al., 2010). These factors tend to contribute to all three dimensions of burnout, namely increase EE, DP and reduce PA (Neumann et al., 2018 and Russell 2016). Of note, the dimension mostly affected was EE, with over half the oncology nursing workforce in a number of the studies reporting medium to high level scores. In comparison, DP was much less affected, suggesting that although adult oncology nurses were showing signs of burnout (high EE scores) and simultaneously not feeling completely fulfilled by their work (low PA), they tend not to have negative or cynical attitudes towards their patients, as the DP scores were much less striking (Ostacoli et al., 2010).

Causative factors relating to burnout for oncology nurses span beyond mere demands caused by actual workload. For instance, disease acuity of this patient group is also a pivotal factor in provoking the development of burnout. Direct care for patients with cancer is increasing complex, mainly due to progressive development in treatment protocols (Kamisli et al., 2017, Taleghani et al., 2017 and Giarelli et al., 2016). Also, adult oncology nurses have frequent and prolonged exposure to highly emotive situations (Woonhwa and Kiser-Larson 2016; Neumann et al., 2018), patient suffering and none more so than the death of patients and grief of families (Perry et al., 2011; Taleghani et al., 2017; Giarelli et al., 2016; Woonhwa and Kiser-Larson 2016 and Neumann et al., 2017).

Whilst the evidence depicts that physical workload and the emotional demands of caring for cancer patients contributes to burnout, the findings are inconsistent as to whether providing care in an inpatient setting compared to an outpatient environment influences burnout for adult oncology nurses. It would appear that both settings have their own unique stressors, with outpatient nurses often reporting stress from supporting patients receiving difficult news following planned investigations and lack of continuity of patient care, hence lower job satisfaction (Davis et al., 2013; Neumann et al., 2018). On the other hand, Park et al. (2015) and Ostacoli et al. (2010) highlighted inpatient nurses' burnout scores were higher, largely due to the acuity of patients' conditions within the inpatient wards.

(2) Impact of work colleagues

The personal and social constructs of working within a team are particularly important and can influence burnout for adult oncology nurses (Perry et al., 2011, Potter et al., 2010, Russell 2016, Wu et al., 2016 and Taleghani et al., 2017), especially cohesiveness within the team and effectiveness of workplace communication (MacMillan et al., 2016, Russell 2016, Yu et al., 2016, Wu 2016, Davis et al., 2013, Perry et al., 2011 and Emold et al., 2011). A healthy supportive work environment is key in the wellbeing of nurses and their job satisfaction (Giarelli et al., 2016; Wu et al., 2016), and when absent this is a major source of risk for burnout (Giarelli et al., 2016).

Establishing supportive relationships through positive feedback, peer support, debriefing following challenging situations, open and concise communication and positive role modelling were considered as protective factors against burnout amongst adult oncology nurses (Perry et al., 2011; Davis et al., 2013; McMillan et al., 2016; Yu et al., 2016). This includes ensuring immediate and effective communication links between staff and management are established (Davis et al., 2013; Giarelli et al., 2016; Emold et al., 2011). Furthermore, Russell (2016) suggested that even the perception of having a high level of support from colleagues and management; is associated with a reduction in burnout scores.

(3) Culture of the working environment

The literature suggested that the commitment of an organisation to its adult oncology nursing workforce, is heavily influenced by the workplace culture (Cheng et al., 2015; Davis et al., 2013; Emold et al., 2011; Kamisli et al., 2017; Kotpa et al., 2017; Giarelli et al., 2016; Wu et al., 2016; Russell 2016). Workplace culture was instrumentally influenced by visible organisational leadership, clarity of beliefs and professionals' values of the team, commitment to nurses' professionalism and connectedness within the adult oncology team (Perry et al., 2011; McMillan et al., 2016). Cheng et al. (2015) demonstrated that a positive workplace culture, which inspired professional values, enabled the delivery of vital high-quality care and support. Within this context adult oncology nurses felt valued, and in turn had a belief in the importance and value of their job, resulting in job satisfaction and reduced the presentation of burnout.

There appeared to be an increasing culture of acceptance to undertaking work-related activities outside of the clinical environment, and more often at home (Neumann et al., 2018; Perry et al., 2011). The emergence of this, was in keeping with an increase in administration tasks often linked to email communication, advances in technology and remote access to clinical notes. These hours spent working at home, electronically accessing emails and medical records, appears to contribute to an increase in burnout (Russell 2016; Emold et al., 2011). This in turn is impacting negatively on burnout by creating substantial tension between personal and professional life (Perry et al., 2011; Neumann et al., 2018).

Theme 2: Personal perspectives influencing burnout.

It is important to recognise that it is not just organisational factors that contributes to burnout; but personal characteristics, in conjunction with an individuals' mindset, can determine their response to, and management of a challenging work environment. The literature demonstrates these factors through the following subthemes: (1) demographics of the oncology nurse, (2) professional attributes of the oncology nurse and (3) personality of the oncology nurse.

(1) Demographics of the oncology nurse

When oncology nurses' demographic variables were examined across the studies, there were inconsistent findings on the role of martial status, age and personal health of the adult oncology nurse in determining their risks to developing burnout. Two larger studies conducted in Asia reported that being married was significant association with reduced burnout (Park et al., 2015; Yu et al., 2016), whereas Woonhwa and Kirer-Lason's (201) Woonhwa and Kiser-Larson (2016) smaller study of USA oncology outpatient nurses, revealed much higher burnout scores for married participants. Interestingly, two further included European studies found no significant correlation between the marital status of the nurse and their burnout scores (Eelen et al., 2014; Emilia et al., 2017). Considering the disparity of findings across differing contexts and countries, the respondents may have differing cultural perspectives in relation to marriage and the roles within a marriage, that may explain this variance.

A number of studies examined the relationship between the age of the oncology nurse and burnout, with many demonstrating that younger nurses have higher rates of burnout, most often relating to increased levels of EE (Perry et al., 2011; Parks and Ahn 2015; Wu et al., 2016; Kamisli et al., 2017; Taleghani et al., 2017). Although this body of extant evidence appears suggestive that a greater degree of burnout is experienced by younger oncology nurses, contradictory evidence has been provided by other studies in this review (Kotpa et al., 2017; Yu et al., 2016; Neumann et al., 2017; Cheng et al., 2015; Davis et al., 2013; Woonhwa et al., 2016). These studies infer that burnout scores were amplified with the increasing age of the nurse. Given these incongruent results, it is difficult to reach a definite conclusion on how the age of the oncology nurse relates to burnout.

It would appear that the personal physical and mental health of individual nurses has a strong relationship with burnout experienced (Kamisli et al., 2017; Taleghani et al., 2017; Neumann et al., 2018). Emilia et al. (2017) suggested the prevalence of burnout was higher in nurses with pre-existing anxiety and depression, with PA score negatively correlated with anxiety and depression, furthermore; increased EE and DP scores had a positive correlation with anxiety and depression. Physical and emotional exhaustion were also associated with burnout symptoms. The majority of other studies have suggested similar findings, with causative directional relationships with depression, personal stress, moral distress and burnout (Cheng et al., 2015; Taleghani et al., 2017, and Neumann et al., 2017).

(2) Professional attributes of the oncology nurse

Evidence is also incongruent on whether experience gained as an oncology nurse may provoke or prevent the development of burnout. Nonetheless, the majority of studies, identified years of experience within an oncology setting as a protective factor against burnout, enabling nurses to gain intuitive knowledge and equipped to handle difficult situations (Park et al., 2015, Taleghani et al., 2017, Kotpa et al., 2017, Potter et al., 2010, Kamisli et al., 2017 and Wu et al., 2016). In contrast, studies reporting years of experience as eliciting burnout amongst this professional group, are those who have a long-serving career in oncology, for example, 11–15 years, or greater than 15 years respectively (Woonhan et al., 2016; Yu et al., 2016). Therefore, the perceived variance may be due to the increased duration of exposure to the pain and suffering of patients or perhaps the occurrence of more personal suffering and challenges within their own lives.

There was no consensus on the role of education on burnout rates for oncology nurses within the studies reviewed. Several studies reported nurses who continued with higher education having lower burnout scores and improved compassionate competence (Kotpa et al., 2017; Wu et al., 2016; Park and Ahn 2015). In contrast, education of oncology nurses with post-graduate advanced degrees had higher risk scores for burnout (Yu et al., 2016; Potter et al., 2010). Perhaps nurses who have progressed in their education place greater expectations upon themselves and become increasing frustrated when these expectations cannot be fulfilled.

(3) Personality of the individual nurse

Many of the studies reviewed suggest that personality factors play a key role in burnout among oncology nurses (Emilia et al., 2017; Emold

et al., 2011; Ostacoli et al., 2010; Yu et al., 2016). Personality traits such as resilience and hardiness are key protective factors against burnout (Emilia et al., 2017; Emold et al., 2011). It would appear that individuals who have a hardy personality and are psychologically flexible are more able to feel a commitment to themselves and their work by feeling more in control of events (Duarte and Pinto-Gouveia 2017). On the other hand, passive coping and neuroticism are negative predictor and increases burnout (Yu et al. et al., 2016, Emold et al., 2017 and McMillian et al., 2016).

5. Discussion

Adult oncology nurses today are experiencing exceptional challenges within the current healthcare system due to political constraints, limited resources, increasing workloads and staff shortages (Lim et al., 2010; Sabzevari and Rad 2019). Having analysed the data presented from the 20 included studies, it is clear that confronting burnout and promoting wellness within the oncology nursing workforce should be the shared responsibility of oncology nurses' and their organisation. This integrative review highlighted three factors, namely, (i) demanding workload, (ii) culture of the working environment to include social constructs, and (iii) individual personality traits, which influenced and contributed to burnout for adult oncology nurses. All three factors were supported by a substantial body of evidence. The review revealed a lack of consistency of how demographic factors, namely age, marital status, education and years' experience influence burnout within the adult oncology nursing workforce.

From an organisation perspective, presenting adult oncology nurses with a demanding workload is a key detriment to burnout. This is a prominent finding in similar studies with medical oncologists (Shanafelt et al., 2009; Leigh et al., 2011). Shanafelt et al. (2014) illustrated that each additional hour spent on work-related tasks at home, increased the risk of burnout. This is an important finding in today's society, with technological innovations and advances providing more opportunity to work remotely, with a rapid emergence as a consequence of the COVID-19 pandemic. Hence, the need to ensure healthy professional and personal boundaries are established is every more pressing. Furthermore, the subjective measure of workload in terms of perceived job stress and perception of time pressure, irrespective of quantitative workload, has been frequently reported as an important correlate of burnout in studies with medical oncologists (Murali et al., 2018). Therefore, when considering workload as an influential factor, it is important to note that the concept of workload is much more that actual quantitative workload, but spans satisfaction with workload, and impact of role intensity, as influenced by disease acuity of this patient group.

Moreover, managing and coping with workload demands is closely intertwined with the culture of the workplace environment and the support provided both within teams and from those in leadership roles within the organisation. The concept of a therapeutic workplace culture must be valued at an individual and an organisational level. There are a number of components that can promote the development of an effective workplace culture, enabling staff to flourish; of which a shared purpose is key (Manley and Titchen, 2012). Furthermore, the studies in this review highlight the instrumental protective value of fostering effective relationships and good communication within the team. This can be acquired through peer support, regular clinical supervision, debriefing after challenging situations and clear communication channels from management within the organisation. In addition to working as a cohesive adult oncology nursing team, a workplace culture can be further optimised by facilitating active learning to transform care, embracing research and development initiates, identifying and empowering champions and ensuring visible leadership (Gesme and Wiseman 2010). Such an environment is conducive to maximising staff's potential, increasing job satisfaction and reducing burnout.

Workplaces were work feels unmanageable and uncontrollable, tend to allow burnout rates to thrive (Emold et al., 2011). However, findings of this review illustrated that the personal resourcefulness of an individual also plays a crucial role in determining their responses to a challenging work environment. The oncology workforce is frequently confronted with multifaceted challenges, however, if an individual adult oncology nurse presents with the personality trait of hardiness, which includes a sense of commitment and control to embrace challenge, this in turn is a protective factor against burnout. In addition to hardiness; optimism, emotional competence, self-efficacy and resourcefulness can also guard against developing burnout in an oncology setting (Hlubocky, 2018).

It is difficult to translate an intrinsic trait such as resilience into an intervention that may mitigate the effects of burnout for adult oncology nurses, however self-compassion is a component of resilience that can be taught (Grafton et al., 2010). Guo et al. (2019) also recognised that having the ability to adapt well to adversity, trauma or stress was an extremely important quality. Similarly, Guo et al. (2019) described this as one's ability to self-care and could be learned. More specifically, self–care comprises of a spectrum of knowledge, skills and attitudes, including self-reflection and self-awareness, which could form elements of therapeutic wellness interventions to bolster resilience. Of note, resilience has been identified as a hallmark of successful leaders within oncology nursing (Cline 2015; Dyess et al., 2015).

In addition to r, optimal communication and positive role models within oncology teams, clinical supervision, orientation programmes for newly recruited staff; other interventions have demonstrated positive results to reduce adult oncology nursing burnout. , These include brief psychological skills to aid management of emotionally challenging clinical encounters (Traeger et al., 2013). Taking into consideration that protective psychological skills can be taught, healthcare organisations should have a responsibility and a vested interest to teach approaches of stress management, self-care and foster resilience within the adult oncology nursing workforce. This approach should encompass early identification of at-risk individuals such as younger nurses, in an endeavour to reduce the long-term personal and professional consequences of burnout. Waiting too long until burnout develops, is likely to have very costly implications in both organisational and personal terms. Therefore, both the prevention of burnout and effective wellness strategies should be incorporated systematically into routine oncology care settings for nurses.

As aforementioned, technology has enabled employees to more easily perform work related tasks at home, which potentially can impact work-home interface. Research has indicated that the demands that contribute to a work-life imbalance may be precursors to burnout (Shanafelt et al., 2014). An area that warrants further exploration is the relationship between work-life balance and burnout for adult oncology nurses, as to-date limited attention has been placed here (Garrosa et al., 2008; Görgens-Ekermans et al., 2012). In contrast, there is a substantial body of work on this topic with oncologists, depicting a conflict between workload and home-life for over half of this professional group (Shanafelt et al. 2009, 2015, 2016; Dyrbye et al., 2011; Arigoni et al., 2009). Oncologists who incorporate a philosophy of work-life balance and focus on the important things in life, appear to have much lower risks of burnout (Banerjee et al., 2017; Shanafelt et al., 2014; Glasberg et al., 2007). Therefore, promoting work-life integration and flexibility, adjusting working hours and schedules would seem to be important. However, we cannot extrapolate these findings for oncologist and universally apply them to oncology nurses. Nursing is predominantly a female profession and likely to experience additional caregiving roles and personal expectations for the family, with the potential for provoking stress and burnout (Hyder et al., 2016; Shanafelt et al., 2019). Given the limited research on the effect of a healthy work-life balance and its relationship with burnout among oncology nurses, this necessitates a commitment to future research to include this conceptually important variable.

5.1. Limitations

Although careful consideration was given to the initial screening process, it was only conducted by the first author and it is possible some relevant articles may have been unseen. Also, within the literature there is an inconsistent use of terminologies with some authors referring to the term burnout and others referencing compassion fatigue, which again many contribute to pertinent studied not being included in this review.

6. Conclusion

Burnout in today's cancer nursing workforce is a significant problem requiring urgent attention. Burnout is influenced by multiple oncology-specific factors due to workload, but also workplace culture, increased accessibility of working at home due to remote access and the personal characteristics of the nurse. Confronting burnout and promoting wellness are the shared responsibility of both oncology nurses and their organisations. From an individual perspective, oncology nurses have an important role in identifying symptoms of burnout, learning resilience strategies and cultivating positive relationships within the team. At an organisational level, an effective workplace culture that systematically incorporates preventative and therapeutic wellness strategies routinely for oncology nurses can help build workforce capacity. Finally, little is known about the impact of, and factors contributing to work-life balance for oncology nurse and this is an obvious gap in the literature that warrants further attention.

Declaration of competing interest

Both authors have no competing interest and have no conflicts of interest in regards to the research described in this paper.

Appendix 1

	Search terms and strategy used	PsycINFO results
8	1 and 4 and 7	14
7	5 or 6	1603
6	(worklife balance or work-life balance).mp. [mp = title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	1603
5	exp Work-Life Balance/	553
4	2 or 3	911834
3	(burnout or occupational stress or burn out or compassion fatigue or stress).mp. [mp = title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	911834
2	exp Occupational Stress/	12972
1	(oncology nurse* or cancer nurse*).mp. [mp = title, abstract, original title, name of substance word, subject heading word, floating sub-heading word, keyword heading word, organism supplementary concept word, protocol supplementary concept word, rare disease supplementary concept word, unique identifier, synonyms]	21966

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