In Nurses What Characteristics Impact Post Traumatic Growth: A Systematic Review

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Abstract

The purpose of this study was to evaluate the characteristics that both positively and negatively affect post traumatic growth in nurses working in direct patient care. Nurses experience post traumatic and secondary traumatic in the workplace daily. Negative factors increase nursing rates of depression, anxiety, post-traumatic stress disorder and suicide. A systematic review of seven primary research articles with a total sample size of 1494 was completed to investigate elements impacting post traumatic growth scores. Stigmatization and lack of formal counseling and treatment are key negative factors in helping nurses seek treatment for mental health. Programs and policy need to be improved at local and national level to include education and training to that will increase nursing treatment options and improve post traumatic growth. Education of nurses of all experience levels reduce stigma for seeking mental health treatment will improve quality of life both personally and professionally. Routine screening and monitoring of nurse's help identify individuals who are affected negatively by work related trauma and proactive approaches improve long-term outcomes and improve post traumatic growth. Innovative approaches for individualized treatment options improving effective coping and minimizing negative effects of trauma are beneficial to all nurses at the bedside. It is necessary to strengthen policy within institutions for mental health education, training, and treatment to improve nursing quality of life, reduce fatigue, improve mental health symptoms of post-traumatic stress to create a positive and psychological safe work environment.

Keywords: nurses, post-traumatic growth, characteristics, suicide, mental health

In Nurses What Elements Impact Post Traumatic Growth: A Systematic Review

Suicide is the 10th leading cause of death in the United States, and 2374 nurses completed suicide between 2007 and 2018 (Patrician et al., 2021). Suicide among nurses was more common compared with the general population in age ranges from 18 to 64 years of age (Patrician et al., 2021). Average suicide rates for females in the general population during this period was 8.6 per 100,000 and averaged 17.1 per 100,000 for female nurses (Patrician et al., 2021). Both male and female nurses had an increased rate of suicide with incidence rates for females and male nurses averaging an increase of 8.5 suicides more per 100,000 as compared to the general population (Patrician et al., 2021). Suicide rates are alarming but so are the rates of post-traumatic stress, depression, anxiety, and substance use disorders (Kim & Yang 2021). Although traumatic experiences do not always have negative outcomes, methods need to be in place that help screen nurses for adverse effects of trauma. Post traumatic growth is the process of positive psychological change following highly challenging, stressful, and traumatic life experiences (Collier, 2016). Having screening policies in place to measure positive traumatic growth as a preventive measure improves outcomes for nurses involved in trauma. Measuring these outcomes longitudinally for nurses who are struggling with post traumatic symptoms and not receiving appropriate care or those not seeking any mental health assistance has also shown to be beneficial. Nurses focus all their time at work treating, providing care, and educating patients that the often forget about their own self care needs and this can lead to poor patient outcomes and reducing of job and life satisfaction for nurses involved in patient care (Chen et al., 2021; Hunsaker et al., 2015).

Background and Significance

Post-traumatic stress, depression, anxiety, and suicide affect nurses from all aspects of care including advanced practice nurses, registered nurses, and nursing aids (Yu et al., 2018). Traumatic events can be a daily occurrence for many nurses especially those involved in critical care and emergency services these experiences range from workplace violence, traumatic injury of patients, and managing care of patients that are dead or dying (Yu et al., 2018). These traumatic events are detrimental to productivity, mental health, job, and life satisfaction leading to burn out and increasing risk for many negative effects and poor coping strategies for many nurses including self-medication with drugs and alcohol, poor diet, and lack of adequate sleep (Hamama et al., 2019; Zeng et al., 2022). Nursing professionals experience high levels of work stressors. Up to 85% of nursing professionals develop at least one negative symptom during critical care and traumatic experiences and over 90% of these nurses did not seek mental health assistance or counseling (Chen et al., 2021; Hunsaker et al., 2015). Many nurses state that their job is rewarding, however, 41% of these nurses describe having high levels of depression, anxiety, and post-traumatic stress disorder from work experiences (Kim & Yang 2021). Although stressors are generally associated with negative effects following trauma exposure, short-term exposure to stressors can lead to positive mental and emotional changes that including increased confidence, personal growth in abilities and knowledge. Short term trauma exposure experienced by a team can also lead improvements in nursing team cohesion, by learning each other's strengths and weaknesses ultimately improving the team's functionality (Yu et al., 2018). Unfortunately, a vast majority of these nurses experience secondary

traumatization from prolonged stressors during their nursing career. These secondary traumatic symptoms include fear of reexperiencing events, sleep difficulty, intrusive images and avoiding reminders of traumatic events (Yu et al., 2018). Post traumatic growth is defined by measuring positive changes in individuals following traumatic events (Hamama-Raz & Minerbi 2018). All nurses are resilient and have developed individual coping skills during their experiences that help them overcome adversity, increasing stress capacity, maintaining work and life balance and ability to control themselves in difficult situations. Although many nurses have learned to cope through coworkers or individual coping mechanisms, many nurses develop poor coping habits or methods during their career. Nurses can develop strategies without additional training or education but generally this is only effective in short or infrequent experience (Yu et al., 2018). Providing education to help reduce the stigmatism of nurses seeking mental health assistance and counseling would help benefit all nurses no matter experience or education level. Being strong willed can have its benefits as a nurse but it can also have long term negative effects. The stigma of seeking mental health assistance is still causing many nurses to forgo seeking help and dealing with their mental health problems on their own. Nursing culture is hesitant to introduce changes within the nursing community. Fear of stigmatization and assumption that their peers will see them as weak and unable to handle job stressors has led to 92% of nurses that need assistance failing to find appropriate treatment (Yu et al., 2018). Lack of effective coping mechanisms, nursing education and training has led to an increase in nursing burnout, mental health disorders and increases in nursing suicide (Hamama et al., 2019).

Review of Literature

The amount of information that is being released about mental health in the nursing profession has been alarming. Processes and policy have begun to develop and change within the nursing community. Policy to prevent, reduce, and treat mental health especially post-traumatic stress a secondary traumatic stress within the profession is slowly improving but is still lacking and is not available to most nurses.

Okoli utilized a cross sectional survey to screen 299 nursing professionals on a self-reported post traumatic growth questionnaire scored on a 6-point Likert scale. Per Okoli screening should be completed to prevent and mitigate secondary trauma and initiate proactive solutions for post traumatic growth and recovery (Okoli et al., 2021). Individualized treatments are recommended because all individuals cope with trauma differently and have developed specific mechanisms to deal with workplace trauma and help them deal with workplace stress in a healthy way. Per this study, no demographic category predisposed individuals to post traumatic stress disorders, depression, and suicide (Okoli et al., 2021). The common link was working in stressful healthcare environments that involved traumatic experiences. This link was also shared between physicians and nursing assistant staff. The disparities for mental health treatment and prevention affect nurses from all experience and education levels, advancements in policy procedure will allow for increased allocation of treatments and resources for all healthcare workers (Okoli et al., 2021). New approaches from facilities and units may reduce work related stressors for all nursing staff.

Yu's systematic review of thirty-eight articles identified factors that helped facilitate nursing resilience following traumatic events. Of the thirty-eight articles reviewed in this study, twenty-three of the studies found good evidence and fifteen were

rated as fair evidence, twenty other studies were deemed to have risk of bias. This study found that increasing resilience mediates job demands and reduces burnout, PTSD, fatigue, anxiety, and depression (Yu et al., 2018). This also helps foster a work environment that is psychologically safe and promotes a positive organization work culture. The addition of proactive nursing screening tools and promoting nursing mental health assistance can help identify and prevent problems associated with work stressors and prevent professional and personal problems from arising in the future (Yu et al., 2018). Organizational assistance should be provided for nurses to help obtain education and counseling. These resources will allow for nurses to deal with adversity and negative work-related demands that include burnout, stress, workplace violence/bulling, anxiety, depression, and post-traumatic stress disorder (Yu et al., 2018). Addition of these protective factors reduce fatigue, burnout, PTSD, and depression (Yu et al., 2018). Reduction of these common complaints helps facilitate a healthy work environment and promotes positive unit, organization and nursing culture that can further expand and reduce overall stigmas of nursing mental health assistance and care for nurses of all scope and practice (Yu et al., 2018).

Maben (2022) utilized a longitudinal qualitative interview to discuss the impact of the COVID-19 pandemic on nursing staff psychosocial and emotional wellbeing. Twenty-seven nurses were given narrative analysis questions at two separate points. In July, data was taken and compared to changes, improvements, or decline to data that was obtained in December. Cross sectional and longitudinal analysis were completed to assess for improvement, consistency, and changes. Findings of this article include that nurses were stigmatized for seeking mental health during the pandemic, this included

psychological help, medication, counseling (Maben et al., 2022). Findings suggested in this article suggest that a psychologically safe workspace that is supported by both the individual nurses and organization may help combat this stigma (Maben et al., 2022). Maben suggests that although some mental and emotional impacts may be temporary and have limited effect in the long term. Prolonged exposure to either repeated or constant stress increase the risk of long term or permanent effects (Maben et al., 2022). Improvement of nursing policy in regards workplace trauma and exposure to stressful work experiences should be supported by hospital, organizational, state, and national boards may need to be implemented before reduction of mental health stigma and facilitate nursing get mental health support and treatment that they require (Maben et al., 2022).

Purpose and Clinical Question

The purpose of this systematic review is to establish connections between positive and negative characteristics that effect nurses' mental health. What characteristics There needs to be reform regarding how nurses are educated and trained regarding traumatic events, stressful work environments and how to effectivity cope with their work environments (Yu et al., 2018). Lack of effective coping, poor long term nursing outcomes, and burnout led me to question, what characteristics within the nursing profession both negatively and positively affect post traumatic growth?

Conceptual Framework

Dorothea E. Orem's Self-Care Deficit Nursing Theory helped focus the core of the research to include that each patient is a distinct individual that may require an

individual treatment plan or assistance depending on the situation (Tanaka, 2022). This theory was developed during the 1960's for patients undergoing rehabilitation or for patients that are expected to become independent following treatment (Tanaka, 2022). Orem states that although air, water, food, and elimination are all key components of the basic needs to help sustain human structure and functional integrity (Tanaka, 2022). More in depth analysis of Orem's theory expands on aspects of work life balance, social interaction and solitude, preventions of hazards to human life and functioning (Tanaka, 2022). This theory can be used to help facilitate care for the nurses themselves and allow for them to provide improved care when these nurses consider self-care deficits effecting work productivity, decreased quality of life and help elevate their behaviors and functioning to better provide care as a nurse.

METHODS

Project Design

A systematic review of the literature was completed. Review was guided by Dorothea Orem's Self-Care Deficit Nursing Theory was used to help mold the research findings into applicable data collection and appropriate search criteria to help include search criteria that will help benefit nurses with the most relevant and up to date data. Data reviewed included negative characteristics within the nursing profession that is preventing nurses from seeking mental health treatment for work related traumatic experiences. Additional data reviewed to included stigmatization of seeking mental health care and roadblocks for providing care by organizations and policy.

Search Strategy

Terms included to conduct this search included, nurses, nursing coping strategies, traumatic events, traumatic coping, death and dying, and advanced practice nursing. Articles were limited to those published between the years 2017 and 2022. Initial search was completed utilizing CINAHL, Medline and PubMed. An ancestry search was used to review citation and studies referenced during the review of these articles. Inclusion criteria for this study included systematic reviews, clinical practice guidelines, cross sectional survey and narrative interviews. English language articles from the last 8 years that are available with full text were included. No specific age ranges or gender were specified during this study. Exclusion criteria included articles not available in the English language. Quality improvement projects and expert review or opinions were also excluded. Articles that focused on nursing care provided following a traumatic experience were also excluded as this did not meet the appropriate demographic. The Joanna Briggs Institute Critical Tool for Qualitative Research was utilized for appraisal. Scores ranged from 0 to 10 with minimal cut off scores acceptable greater than 8 (Appendix A).

Selection process

Initial review of articles was completed independently based on title that included systematic reviews, individual case studies and meta-analysis of nursing trauma and coping mechanisms to help identify current trends for this topic. All information was gathered and entered a flow diagram was utilized to further screen articles that best applied and obtained the appropriate data for review. A visualization of the structure is presented in Figure 1. After inclusion criteria had been met, information from the abstract was analyzed for relevant data prior to being added into the final collection of

articles for review. After selection of the final 24 articles further analysis based on clinical outcomes of the nurses involved in the study were analyzed then broken down further into more relevant data that suggested causes of reduction in post-traumatic growth leading to mental health disorders. Last analysis focused on current recommendations from that data collected to better encompass nurses in direct care settings that have been exposed to traumatic events and are experiencing the negative effects of these events. To alleviate bias within the search criteria peer reviewed articles were reviewed and results compared to articles with similar demographic data and compared results and findings to those from previous articles explored to compile data from multiple reputable sources.

Synthesis Method

The evidence synthesis table was utilized to organize relevant data that correlated to anticipated findings during this study. A visualization was included for reference in Table 1. The evidence synthesis table outlined, purpose, design and design strength, sample size and participant demographic information, measurement criteria, and results/conclusions taken from each study analyzed. Data collected about elements that both positively and negatively effecting nursing post traumatic growth was evaluated to see similarities and differences between individual nursing experiences to help develop recommendations and guidelines that support acquiring more education and training to help alleviate the stigma of mental health disparities within the nursing profession.

Results

Search Results

A search was completed between July 2022 and September 2022 on CINHAL Ultimate Database, PubMed, and Medline: Search included the key words nurses, coping strategies, post-traumatic stress, secondary traumatization, post traumatic growth, post trauma scores and resilience from the years 2012-2022 resulted in 176 related articles to my PICO question and hypothesis statements (Figure 1). Twelve duplicate studies were excluded from the final search results. Fifty-two studies were excluded due to being published in languages other than English. Thirty-six articles were removed due to full text being unavailable. Thirty articles about patients who were cared for by or cared for by nurses following traumatic experiences or other caregivers other than nurses were excluded. Data collected from systematic reviews, meta-analysis, quality improvement analysis, and expert opinion was excluded. Twenty-four articles met final eligibility requirements seventeen articles were removed due to inconclusive results or lack of positive or negative factors associated with post traumatic growth or post traumatic scores. Seven articles were included in the final review.

Characteristics of Studies

The sample studies consisted mostly of self-reported surveys, questionnaires, and interviews. 4 cross sectional surveys were included (Okoli et al., 2021; Cui et al., 2021; Hamama et al., 2019; Itzhaki et al., 2015). A case qualitative study was completed by (Hamama-Raz & Minerbi, 2019) Hamama (2019) completed a self-reported questionnaire that was utilized. Maben (2022) completed a longitudinal and qualitative interview. All articles focused on nurses involved in direct patient care that have been exposed to traumatic experiences such as physical assault, patient deaths, and traumatic injuries. All studies compared post traumatic growth scores using post

traumatic growth inventories. One study analyzed post-traumatic stress scoring between physicians and nurses that included a total of 235 providers, 158 of physicians compared to 76 nurses (Hamama et al., 2018). Study sizes range from 27 narrative analysis (Maben et al., 2022) to 726 nurses surveyed from questionnaires (Zeng et al., 2022) for a total sample size of 1494. Three articles assessed nurses from China (Cui et al., 2020; Zeng et al., 2022; Hamama et al., 2018). Two articles assessed nurses from Israel (Itzhaki et al., 2015; Hamama-Raz & Minerbi, 2019). One article from the United Kingdom (Maben et al.,2022) and one article from Taiwan (Chen et al., 2021). All articles support the fact that stigmatization and lack of resources all prevent nurses from seeking proper care. Factors discussed decrease their quality of life and increase the risk of detrimental mental health disorders as a result.

Synthesis Across Studies

The main theme across all studies was the effect of traumatic workplace experiences on post traumatic growth (Okoli et al., 2021; Cui et al., 2021; Hamama et al., 2019; Itzhaki et al., 2015; Zeng et al., 2022; Maben et al., 2022; Chen et al, 2021). All studies suggest that nursing units have potential to expose nurses to traumatic stressors and secondary traumatic stress that can affect emotional wellbeing this trauma can lead to depression, anxiety, elevated risk of suicide, and unhealthy coping mechanisms (Okoli et al., 2021; Cui et al., 2021; Hamama et al., 2019; Itzhaki et al., 2015; Zeng et al., 2022; Maben et al., 2022; Chen et al, 2021). Secondary themes identified through data and analysis comparison within articles suggested by four of the seven articles is that due to the high stress environment, current and past workloads, ongoing pandemic, safety concern, and traumatic experiences affect emotional

wellbeing (Okoli et al., 2021; Cui et al., 2021; Hamama et al., 2019; Itzhaki et al., 2015).

Hamama (2019) and Cui (2021) suggest problem focused coping and programs that

reinforce stress management reduce secondary trauma and improve post traumatic

growth scores. Four of the seven articles discuss proactive approaches and

individualized treatment plans will lead to improvements in long term mental health and

can enhance quality of life within nursing (Maben et al., 2022; Okoli, 2020; Zeng et al.,

2022; Yu et al., 2019). Interventions and resources should be allocated that contribute

to coping mechanisms and training (Maben et al., 2022; Okoli, 2020). The

implementation of these changes will increase post traumatic growth enhancing staff

resilience. Improvement of nursing resilience will improve work related stressors and

reduce burnout (Maben, 2022; Itzhaki 2015). Three of seven articles recommend

training and education will reduce stigmatization of seeking mental health resources are

available and improve mental health within the nursing community. (Maben, 2022;

Itzhaki 2015; Hamama 2019; Cui 2021). One study emphasized the negative work-

related factors such as limited staffing, lack of personal protective equipment, increased

patient deaths and impoverished care due to high patient loads during the pandemic

(Maben et al., 2022). The data found supports Orem's Self-Care Deficit Nursing Theory

in the fact that having effective work life balance and creating individualized plans for

treatment has been shown to be effective improving post traumatic growth (Tanaka,

2022).

Discussion

Orem's Self-Care Deficit Nursing Theory regarding help focus this study by

looking into individualized treatment plans, characteristics that nurses possess that

positively and negatively effect post traumatic growth and overall wellbeing. To focus on balancing work, rest, and social interaction to improve nursing wellbeing following trauma and secondary trauma. Traumatic events and stressful work environments affect nurses at all levels, reform needs to be implemented by facilities in how nurses are educated and trained about their mental health (Maben, 2022; Itzhaki 2015). Programs need to be established towards improving nursing education and training regarding nursing mental health by involving national organization to help develop policy and allocate resources to training and educating nurses on mental health care. These programs need to be implemented and resourced locally at the facility level. Nurses who are involved in education and training have shown improved post traumatic growth scores, improved work satisfaction and have rejuvenated their compassion for patient care (Maben, 2022; Itzhaki 2015; Hamama 2019; Cui 2021). Additional strategies and policies should be developed by national certifying boards will help in reduction of the stigma of seeking help for mental health and receiving appropriate treatment (Maben et al., 2022). Nurses involved in traumatic and high stress environments of care will finally be able to receive dedicated support and treatment for mental health conditions (Maben et al., 2022; Okoli, 2020; Zeng et al., 2022; Yu et al., 2019).

Recommendations

Similar programs have been researched on how to improve quality of life. Yilmaz (2020) researched the effectiveness of nursing lead training and intervention programs to improve post traumatic growth scores. These finding suggest that programs, education and training that support nursing coping management skills, will improve quality of life, reduction of stress, reduction of long-term mental health issues and

complications that will lead to improved nursing retention rates and overall improvement of quality of patient care (Okoli et al., 2021; Cui et al., 2021; Hamama et al., 2019; Itzhaki et al., 2015).

Some findings that did not fit the initial hypothesis in the fact that although nurses and physicians experience similar trauma physicians have higher rates of post traumatic growth despite nursing having more perceived support systems in place. Okoli (2020) does suggest that individuals with advanced degree have higher levels of post traumatic growth verses baccalaureate degree and associate degree nurses.

It was hypothesized that nurses who have experienced trauma more frequently and for longer periods would have lower growth scores. Younger nurses showed lower rates of post traumatic growth and increased rates of secondary trauma versus nurses who have been practicing in high stress areas for many years (Cui et al, 2021).

To improve nursing practice routine screening and monitoring for nurses who have experienced trauma in the workplace (Zeng et al, 2022; Maben et al., 2022). Monitoring nurses more closely will allow for more data to be collected on each individual person and allow for measurement of changes in mental health and allow for recommendations of counseling, therapy and educational options that may be available (Zeng et al, 2022; Maben et al., 2022).

Improvements could also be made in adverse event monitoring and reporting to allow for nurses to report symptoms of depression anxiety and post traumatic stress following these events. Assessing for these symptoms earlier in the process may improve outcomes for nurses before long term symptoms have developed (Zeng et al, 2022). More specifically, following physical violence in the work place we must advocate

for nurses who have been assaulted at work to allow for them to report these incidents in a timely manner and have debriefing following these events to improve nursing safety in the workplace (Itzhaki et al., 2015).

Limitations

A vast majority of the data collected regarding traumatic events regarding nurses was collected using self-reported surveys. Although we get data directly from those experiencing traumatic events, information that was not asked via questionnaires, omitted, or not explained by individuals participating in the studies may lead to bias in recommendations. Analyzing this data through live interviews will allow for more descriptive information being provided by the participant and adding to the amount of information that nurses found that positively and negatively experienced and affected their post traumatic growth in their own words.

Single unit or facility evaluation could limit a wider range of demographic data to include patient acuity, number of traumatic patients and overall trauma exposure could lead to bias. Rural hospitals versus metropolitan medical centers see a vastly different type and number of traumatic cases daily. Resources available to larger facilities may ease the burden of workload at larger facilities but those individual nurses may see more traumatic cases and deaths as compared to those who are in rural settings. Assessing data from national organizations or certifying boards could help capture data from multiple settings allowing for more feedback regardless of the population served.

In most cases data was collected at a single point in time. One study by Maben (2022) used minimal longitudinal data over the course of 6 months to evaluate both positive and negative changes in post-traumatic growth. To help facilitate change and

evaluate effectiveness of protocols and education put into place further evaluation by completing a longitudinal study of these nurses over more months or years may help assess individual causative factors regarding mental health in nursing professionals along with improved data on effectiveness of treatment regimes.

Conclusion and Implications

Treatment options and supportive care should be established for nursing and medical professionals of all education and experience levels. Policy changes and resources have begun to be allocated for nursing training and education, but resources are limited to support the growing number of nurses who need treatment and supportive care (Maben, 2022; Chen 2020). Hamama (2019) and Chen (2020) suggest innovative approaches to nursing education and training help minimize negative effects of job stressors and lead to effective coping mechanisms at home and in the workplace. Training and education will help alleviate the stigma associated with seeking mental health and lead to a more positive and psychologically safe and supportive work environment (Chen 2020; Maben 2022; Cui, 2020; Hamama, 2018). Individualized and focused treatment plans will help promote mental health, equip nurses with effective coping mechanisms and increase resilience within all aspects of their lives (Okoli, 2020; Cui 2020; Zeng et al., 2022). No specific treatment regiments have been identified but creating an individualized and specific treatment plan based on personal needs of each nurse is recommended (Maben, 2022; Hamama, 2018; Chen, 2020). Advocating for improved support for mental health treatment, reducing the stigma for seeking help and providing resources for nurses in experiencing workplace trauma. Starting with education from new nurses to seasoned nurses is how to foster an improved

environment of care and advancing the nursing profession. (Okoli, 2020; Hamama, 2019).

Table 1

Evidence Synthesis Table

Author	Purpose	Frame-work	Design	Sample	Methods	Findings	Quality Appraisal/ Limitations	Conclusions/ Application
1. Hamama-Raz, 2019	To explore the link between secondary traumatization and post traumatic growth. To examine the link between problem focused coping and emotion focused coping strategies to secondary trauma and post traumatic growth.	None Discussed	Single case qualitative descriptive study.	153 Rehabilitation Nurses in Israel	Self-reported questionnaires regarding personal data, post traumatic growth, secondary traumatization, coping mechanisms and personal negative life events. Secondary Traumatic Stress Scale measured symptoms of PTSD. Post traumatic growth inventory measured positive changes following	Statistically significant correlation between secondary trauma and post traumatic growth. Direct exposure to patient death led to decrease in post-traumatic scoring. Problem focused and emotion focused coping strategies improved post traumatic growth scores.	Single medical facility, within rehabilitation unit in Israel may not be indicative of other facilities. Only cross-sectional analysis, only self-report analysis. Mainly female demographic JBI critical appraisal checklist 8/10	Proactive approaches to reduce stressors and cope with trauma experienced while working and focusing on problem solving and teamwork will reduce secondary trauma. Facilities should implement multidisciplinary teams that inform, educate, and treat nurses to help reduce primary and secondary trauma.

Author	Purpose	Frame-work	Design	Sample	Methods	Findings	Quality Appraisal/ Limitations	Conclusions/ Application
					traumatic events.			Implementing time management strategies, social support, and emotional coping strategies lead to improved post traumatic growth.
2. Zeng, 2022	Prevalence and influencing factors of post traumatic growth among nurses suffering from workplace violence	None Discussed	Cross Sectional Survey	726 nursing professionals from 10 hospitals in China	A self-reported post traumatic grown questionnaire. To collect demographic, work related and lifestyle information. Measurements were completed using Post traumatic Growth inventory (PTGI)	Screening for post traumatic stressors and individualized treatment plans are of most benefit. Imbalances in effort or compassion satisfaction and reward lead to compassion fatigue and increased burnout.	JBI critical appraisal checklist 9/10 No longitudinal data collected. Convenience of participants may affect final data. Data collected from nurses reporting	Eight influencing factors were identified to have the greatest effect on post traumatic growth to include, sleep, scheduling, alcohol intake, number of children at home, work hours per

Author	Purpose	Frame-work	Design	Sample	Methods	Findings	Quality Appraisal/ Limitations	Conclusions/ Application
						Nurses facing work related trauma will have increased negative emotions and lower post traumatic growth scores. Professional nurses exposed to trauma have higher rates of work-related distress, compassion fatigue, reduced work efficiency and lower work and life satisfaction. These factors increase rates of secondary traumatic stress and post-traumatic stress disorder.	workplace violence. Self-report questionnaire may leave out key information about individual and personalized experiences of trauma.	week/day, secondary trauma experiences. Consider improving adverse event reporting and supporting nurses and supporting rights of nurses within the legal system.
3. Chen, 2020	Explore the relationship between nurse work	None Discussed	Quantitative empirical research	553 clinical nurses from 3 different medical	Data collected from structured questionnaire	29% of nurses show high rates of burnout and	JBI critical appraisal checklist 9/10	Programs to reinforce stress management

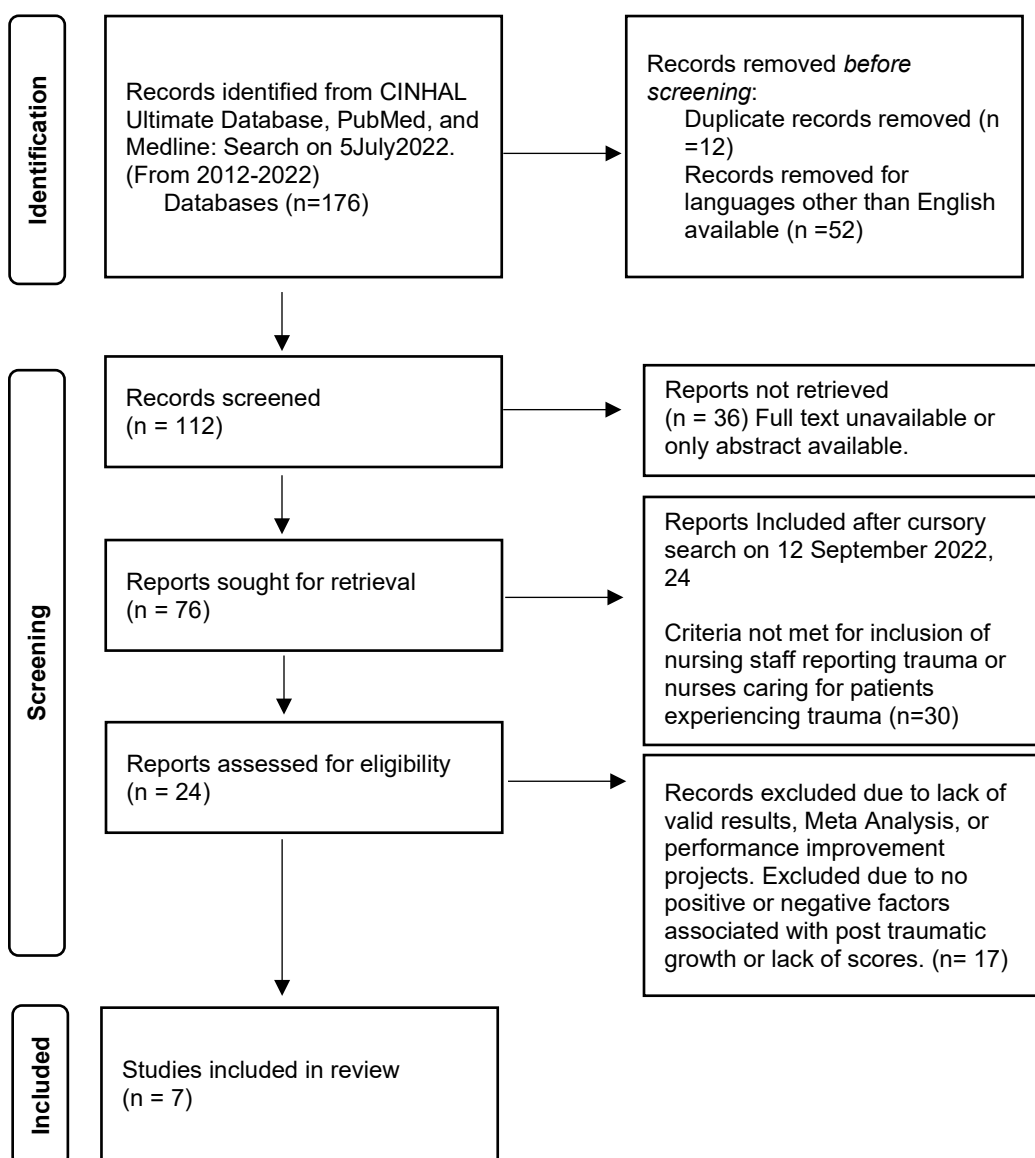| Author	Purpose	Frame-work	Design	Sample	Methods	Findings	Quality Appraisal/ Limitations	Conclusions/ Application
	and life quality. Examine factors related to improvement or reduction of quality of life.			facilities in Taiwan	Compassion satisfaction and fatigue was measured using the Professional Quality of Life scale Personal quality of life was measured using the short form health survey analyzed physical and mental health.	29% are at high risk of post-traumatic stress. Programs that are implemented improved quality of life, intent to stay, job satisfaction and reduced post-traumatic stress.	Data collection from structured questionnaire could lead to self-bias. Single Hospital in central Taiwan. No longitudinal data. No data collected on nursing resignation reasons but could be due to other reasons other than burnout or post traumatic stressors.	improved quality of life, job satisfaction and reduced post-traumatic stress. Learning about fatigue symptoms, understating recovery, and improving work interest. Stress release programs were recommended to reduce burnout. Providing counseling and alternative health measure improve professional

Author	Purpose	Frame-work	Design	Sample	Methods	Findings	Quality Appraisal/ Limitations	Conclusions/ Application
								quality of life for nurses.
								Management at unit and institutional level to promote and cultivate nursing mental health and improve work satisfaction.
								Policy and education implemented at facility and unit level help alleviate stressors associated with work related trauma.
4. Cui, 2020.	Explore post traumatic growth in frontline nurses during	None Discussed	Cross Sectional Survey	176 Frontline nurses assessed in China.	Online survey that includes open and close ended questions to capture data.	56.3% of nurses had lower post traumatic growth scores	JBI critical appraisal 8/10 Response bias due to responders having more	Although short term post-traumatic stress showed mild to moderate

Author	Purpose	Frame-work	Design	Sample	Methods	Findings	Quality Appraisal/ Limitations	Conclusions/ Application
	COVID-19 pandemic				Post traumatic growth was measured using the Post traumatic growth inventory.	that are lower than average. Regression was noted in nurses who had more years working, increased awareness of risk. Intervention and training during the pandemic were main influencing factors for post traumatic growth. Nurses who received psychological intervention and training had higher levels of post traumatic growth. Younger nurses were	positive opinions about post traumatic growth. Influential information regarding coping styles, social support was not considered during this study. Single data collection, longitudinal study may help assess long term effects of prolonged stress and trauma within the workplace.	effects. Long-term stress effects need to be assessed. Implementation and psychological interventions and training will help strengthen long term effects of job-related trauma.

Author	Purpose	Frame-work	Design	Sample	Methods	Findings	Quality Appraisal/ Limitations	Conclusions/ Application
						affected more by post traumatic stressors resulting in more rumination and lower post traumatic growth scores.		
5. Hamama, 2019	Examine differences between nurses and physicians regarding burnout, secondary traumatic stress, and perceived social support.	No theoretical framework listed	Cross Sectional Survey	235 healthcare providers in China, 158 physicians, 76 nurses.	Self-reported questionnaire and analysis of work-related variable regarding stress to examine significant differences between physicians and nursing stressors and resilience.

Burnout was assess utilizing the Maslach Burnout Inventory. | No significant difference, both experience secondary trauma. Nurses have higher perceived support but no resolute advocates or support systems regarding work related stressors. | JBI critical appraisal 8/10

Self-report may lead to result bias, only single study was completed, longitudinal data may be beneficial when assessing trends. | No significant difference in nurses or physicians, both groups would benefit from dedicated resources to reduce burnout and secondary stress/trauma.

Organizational support to mitigate secondary trauma is needed. Reenforce |

Author	Purpose	Frame-work	Design	Sample	Methods	Findings	Quality Appraisal/ Limitations	Conclusions/ Application
					Secondary Traumatic Stress Scale (STSS) was measured secondary trauma. Multidimensional Scale of Perceived Social Support (MSPSS) measured support.			culture supportive of negative reactions of trauma and secondary trauma.
6. Maben, 2022	Interview study examined the impacts of the pandemic on frontline nursing staff's psychosocial and emotional wellbeing.	No Framework discussed	Longitudinal and qualitative interview	27 nurses from the United Kingdom completed narrative analysis in July and again in December in	Cross Sectional and longitudinal analysis	Continue to have stigma of nurses seeking psychological help, evaluation, and treatment	JBI critical appraisal 8/10 Limited quota of 27 nurses. Quotas for ethnic minorities Social care and student groups were also not considered.	Policy implementation at local and national level to allocate resources for mental health screening and treatment.

Author	Purpose	Frame-work	Design	Sample	Methods	Findings	Quality Appraisal/ Limitations	Conclusions/ Application
7. Itzhaki, 2015	Evaluate life satisfaction, job stress, and post traumatic growth following physical violence.	None Discussed	Descriptive Cross-sectional analysis	230 mental health nurses in the Israel	Descriptive Cross-sectional analysis	Resilience effect job and life satisfaction. Increased resilience improves post traumatic growth scores.	JBI critical appraisal 9/10 Limited demographic and workplace location data regarding physical violence as cause for work related stressors.	Interventions that contribute to post traumatic growth and staff resilience reduce job stress, burnout and improve nursing quality of live.

Figure 1

Flow Diagram for systematic review

Identification	Records identified from CINHAL Ultimate Database, PubMed, and Medline: Search on 5July2022. (From 2012-2022) Databases (n=176)	Records removed *before screening*: Duplicate records removed (n =12) Records removed for languages other than English available (n =52)
Screening	Records screened (n = 112)	Reports not retrieved (n = 36) Full text unavailable or only abstract available.
	Reports sought for retrieval (n = 76)	Reports Included after cursory search on 12 September 2022, 24 Criteria not met for inclusion of nursing staff reporting trauma or nurses caring for patients experiencing trauma (n=30)
	Reports assessed for eligibility (n = 24)	Records excluded due to lack of valid results, Meta Analysis, or performance improvement projects. Excluded due to no positive or negative factors associated with post traumatic growth or lack of scores. (n= 17)
Included	Studies included in review (n = 7)	

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Appendix A

JBI CRITICAL APPRAISAL CHECKLIST FOR QUALITATIVE RESEARCH

Reviewer_____

Date_____

Author_____Year_____   Record

Number_____

	Yes	No	Unclear	Not applicable
1. Is there congruity between the stated philosophical perspective and the research methodology?	☐	☐	☐	☐
2. Is there congruity between the research methodology and the research question or objectives?	☐	☐	☐	☐
3. Is there congruity between the research methodology and the methods used to collect data?	☐	☐	☐	☐
4. Is there congruity between the research methodology and the representation and analysis of data?	☐	☐	☐	☐
5. Is there congruity between the research methodology and the interpretation of results?	☐	☐	☐	☐
6. Is there a statement locating the researcher culturally or theoretically?	☐	☐	☐	☐
7. Is the influence of the researcher on the research, and vice- versa, addressed?	☐	☐	☐	☐
8. Are participants, and their voices, adequately represented?	☐	☐	☐	☐
9. Is the research ethical according to current criteria or, for recent studies, and is there evidence of ethical approval by an appropriate body?	☐	☐	☐	☐
10. Do the conclusions drawn in the research report flow from the analysis, or interpretation, of the data?	☐	☐	☐	☐

Overall appraisal: Include   ☐   Exclude   ☐   Seek further info ☐

Comments

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