

# **Exploring Compassion Fatigue and Burnout** in Healthcare Professionals: A Scoping Review

By Kayla Kaminski, 3<sup>rd</sup> yr Nursing Student, concurrently in the ADN-RN program at Oakland Community College, and the BSN-RN program at University of Michigan, Waterford, Michigan, 48327, USA

This manuscript began as part of a first year nursing course ENG 1520: Composition II at Oakland Community College, November, 2018. Revisions were made during summer session, 2020 and the manuscript was completed in August, 2020.

Corresponding author: Kayla Kaminski, RN-BSN Student: kaylakm@umich.edu

#### **Abstract**

Background: Burnout, which affects 51% of physicians and one-third of nurses in the United States (Reith, 2018), and compassion fatigue, which affects caregivers that are exposed to a secondary trauma (Figley, 1995) frequently co-occur in the healthcare workplace. The purpose of this article is to provide information that will assist nurses and physicians to develop an understanding of compassion fatigue and burnout, and their co-occurence in the workplace.

Methods: Key terms were searched on the Cumulative Index of Nursing & Allied Health Literature (CINAHL) and PubMed databases as part of a scoping review to (a) investigate causative factors that contribute to the onset of compassion fatigue and burnout in healthcare professionals (b) investigate protective factors that prevent or lessen the risk of compassion fatigue and burnout in healthcare professionals (c) determine the effects of compassion fatigue and burnout on healthcare professionals (d) identify diagnostic tools to diagnose compassion fatigue and burnout.

**Results:** Causative factors included chronic stress, critical care and front-line specialties, poor self-efficacy, personality, poor coping skills and lack of social or structural support. Enhancing resilience, mindfulness, self-compassion, structural and social support will reduce the rates of compassion fatigue and burnout among healthcare professionals.

**Conclusion:** Burnout or compassion fatigue are associated with negative physical and mental health effects. Effectively addressing compassion fatigue and burnout will enhance healthcare professional well-being and patient outcomes. More research is needed to determine the financial impact of compassion fatigue and burnout and to reduce workplace stressors.

**Keywords:** nurses, caregivers, doctors, compassion fatigue, burnout

Many nurses and physicians work long, stressful hours exacerbated by a lack of resources. This contributes to the co-occurrence of compassion fatigue and burnout in healthcare professionals. Historically, the concepts of compassion fatigue and burnout have been used interchangeably. While they may present with similar signs and symptoms, they differ in regard to causation. Burnout occurs gradually over time in the presence of multiple stressors which are not limited to caregiving roles. Compassion fatigue, also known as Secondary Traumatic Stress Disorder (STSD), is related to stressors occurring within caregiving roles (Figley, 1995). Compassion fatigue and burnout may predispose an individual to mental illness and physical impairment (Sorenson et al., 2016), and both can negatively impact the ability to provide quality care.

According to El-bar, et al. (2013), "while compassion fatigue had been described as a form of burnout, recent literature argues that these terms reflect related, though distinctly unique concepts and are not mutually exclusive. Compassion fatigue, for example, may coexist with burnout..." (p.2). There is a positive correlation between the rates of compassion fatigue and burnout, and compassion fatigue may contribute to the development of burnout (Sorenson et al., 2016). To compare, however, burnout arises gradually, while compassion fatigue is marked by sudden onset following one's exposure to a secondary trauma. Moreover, while burnout is not primarily caused by compassion fatigue, they may co-occur depending on other workplace factors.

Burnout is a psychological syndrome that occurs in the presence of chronic, workplace stressors and is characterized by three interpersonal components that include emotional exhaustion, cynicism and depersonalization, and lack of accomplishment and/or professional efficacy." (Maslach & Leiter, 2016, p.103). Burnout is the result of job dissatisfaction and perceived powerlessness, which is not limited to care giving roles; healthcare professionals suffering from burnout are likely to feel discouraged and unaccomplished (Figley, 1995). Further, its physical and emotional symptoms directly affect patient care (Sorenson et al., 2016).

According to Figley (1995), compassion fatigue is another term for Secondary Traumatic Stress Disorder (STSD) or vicarious trauma (Nimmo & Huggard, 2013), which occurs among those who care for traumatized individuals. It is frequently cited as the "cost of caring" (Sorenson et al., 2016) and results in a similar symptomology to Post Traumatic Stress Disorder (PTSD) (Nimmo & Huggard, 2013). Compassion fatigue occurs when a highly empathetic caregiver seeks to help, or provides care, to a person experiencing trauma (Figley, 1995). According to Upton (2018), compassion fatigue is marked by physical, emotional, spiritual and social effects which impact the workplace, negatively impacting a healthcare worker's health, leading to an increased number of sick days and higher turnover rates for the organization (Maslach & Leiter, 2016).

As reported by Shattell and Johnson (2018), practicing compassion and empathy may predispose medical providers to compassion fatigue and burnout. Nursing students are at a unique advantage when they develop a foundational nursing practice that is built upon self-awareness, self-care and resilience which are protective factors against burnout (Shattell & Johnson, 2018) and compassion fatigue (Sorenson et al., 2016). The objective of this scoping review was to review research on compassion fatigue and burnout primarily among nurses and physicians in acute care settings in order to identify and define risk factors, causes, protective

factors, signs and symptoms, diagnostic tools and outcomes.

#### **Methods**

# **Literature Search and Study Selection**

The literature search was conducted using the CINAHL and PubMed databases. The search terms used included, "nurses AND stress", "caregivers AND burnout", "compassion fatigue", "secondary traumatic stress disorder", "nurses AND burnout", "PTSD", and "personality AND stress". The literature search began in September, 2018; the search terms doctors AND burnout were searched and added to the literature review in August, 2020. Full text, peer reviewed articles written in English were selected, with no restrictions placed on date or country of publication. The research selected was qualitative and quantitative in nature, with a mixture of cohort and cross sectional studies in addition to literature reviews, with the exception of an article that was selected from Pulse, a single-blind peer reviewed magazine on British primary care. The corresponding author reviewed the title, methods and abstract, and read each article selected to determine relevance and scope of research or data.

# **Data Analysis**

A scoping review was performed in order to explore and synthesize the available research on compassion fatigue and burnout among healthcare professionals. The primary criteria that guided the research selection included (a) causative factors that contribute to the onset of compassion fatigue and burnout in healthcare professionals (b) protective factors that prevent or lessen the risk of compassion fatigue and burnout in healthcare professionals (c) effects of compassion fatigue and burnout on healthcare professionals (d) diagnostic tools available to diagnose compassion fatigue and burnout in healthcare professionals

## **Summary of the Salient Findings**

# **Diagnostic Tools**

**Burnout.** The most commonly used instrument to diagnose burnout is the Maslach Burnout Inventory (MBI), which was developed in 1981 by two social psychologists, Christina Maslach, Ph.D and Susan E. Jackson, Ph.D (Reith, 2018). The MBI consists of three sub-scales that measure feelings of emotional exhaustion, lack of personal accomplishment and depersonalization based on introspective psychological evaluation (Figley, 1995). The MBI is an accurate and valid assessment tool that measures the frequency with which these feelings and perceptions might appear in an individual, from daily to a few times per year (Bussing, et al., 2017).

Compassion Fatigue. Compassion fatigue is diagnosed by administering the Secondary Traumatic Stress Scale, which measures the prevalence of recurring memories, hyperarousal and avoidance related to a traumatic event (Upton, 2018). Compassion fatigue is similar to Post Traumatic Stress Disorder (PTSD) in that the signs and symptoms involve hyperarousal, avoidance and numbness (Figley, 1995). Exposure to a patient experiencing trauma is an additional diagnostic indicator (El-bar et al., 2013).

## Signs and Symptoms of Compassion Fatigue and Burnout

There are physical and emotional signs and symptoms associated with both compassion fatigue and burnout. Physically, compassion fatigue and burnout may induce an increase in blood

pressure, weight gain, decreased immunity and a predisposition to cardiovascular disease (Upton, 2018). Some may also experience headaches, gastrointestinal issues and insomnia (Sorenson et al., 2016). Emotional symptoms of compassion fatigue and burnout include "mood swings, irritability, depression, poor concentration and judgment" (Sorenson et al., 2016, p. 457). Compassion fatigue and burnout are further associated with feelings of depersonalization (Yoncheng et al., 2018), which involves detachment from oneself, surroundings and people. Depersonalization is described as detachment from the self or environment, which may manifest in the workplace setting as cynical, negative or impersonal behaviors when interacting with patients and co-workers (Reith, 2018).

Specific to compassion fatigue is chronic fatigue and sleep problems associated with trauma-related nightmares (Upton, 2018). Furthermore, the symptoms of compassion fatigue which are similar to those of PTSD include persistent arousal, avoidance, difficulty concentrating, loss of pleasure in life and re-experiencing of the traumatic event (Figley, 1995). According to researchers, burnout is characterized by "emotional exhaustion and low personal accomplishment" particularly among workers in healthcare professions (Yoncheng et al., 2018, p. 1). Healthcare workers may be more likely to experience burnout due to the high levels of work stress, heightened workload, and direct patient interactions (El-bar et al., 2013). Subsequently, healthcare professionals may distance themselves emotionally in order to cope. According to Reith (2018), "...over 90% of participants assessed as "burned out" by the MBI also met diagnostic criteria for depression and scored 15 or greater on the Patient Health Questionnaire-9 (PHQ-9)" (p. 4). As a result, careful consideration should be made when differentiating the diagnosis of depression as occurring secondary to burnout or independently from burnout.

The signs and symptoms of compassion fatigue and burnout contribute to suboptimal patient care by affecting patient safety and well-being (El-bar, 2013). Depersonalization culminates in a negative outlook and impersonal attitude towards patients (Büssing et al., 2017). Burnout contributes to absenteeism and decreased work performance (Maslach & Leiter, 2016).

### **Risk Factors and Outcomes**

There are multiple predisposing factors which contribute to the onset of compassion fatigue and burnout in healthcare professionals. Chronic stress, the leading cause of burnout, has long been associated with poor health outcomes, including cognitive deficits that impact decision-making abilities (Shattell & Johnson, 2018). Those with impaired decision-making abilities are more likely to make mistakes at work, leading to poor patient outcomes (Upton, 2018). According to Reith (2018), "the number of major medical errors committed by a surgeon is correlated with the surgeon's degree of burnout...among nurses, higher levels of burnout are associated with higher rates of both patient mortality and...hospital-transmitted infections..." (p. 2). In addition, a stressful work environment and heavy workload are barriers to compassionate care, which may prevent healthcare professionals from practicing empathy and lead to lower levels of patient satisfaction (Büssing et al., 2017). El-bar et al. (2013) concurred that high levels of stress contribute to a loss of compassionate care.

**Specialty type.** Certain specialties are associated with higher levels of stress and are more likely to involve traumatic experiences. For example, there is a positive correlation between acute care settings and compassion fatigue (Upton, 2018). Acute care settings offer highly complex cases and a high intensity, fast paced, work environment, which are risk factors

for compassion fatigue and burnout. Critical care units in particular yield higher rates of compassion fatigue and burnout among its staff when compared to lower intensity medical surgical units (Sorenson et al., 2016). Furthermore, a high level of patient acuity and comorbidity contributes to an increased work burden (Büssing et al., 2017). Higher intensity settings expose healthcare workers to more traumatic experiences increasing their risk for compassion fatigue, while increased workload (Figley, 1995) and front-line care (Reith, 2018) contribute to the development of burnout. Healthcare professionals working in front-line care specialties such as family medicine, emergency medicine, internal medicine and obstetrics/gynecology are also at increased risk for burnout (Reith, 2018).

**Personality and perception.** Among the personality types, some are considered to be more resilient to stressors. In researching the relationship between personality and burnout, Yao et al. (2018) defined personality as "a sum of psychological characteristics in a relatively stable individual, reflecting one's adaptability to the environment...behavior patterns...ways of thinking, and is a product of the interaction with the acquired social environment" (p. 2). The behaviors associated with type A personality include being aggressive, hurried, ambitious, alert and competitive, in addition to having high levels of arousal and strict adherence to deadlines (Janjhua & Chandrakanta, 2012). According to Janjhua and Chandrakanta (2012), "doctors with type A personality were inclined to [experience] more stress...and better performance than type B [personality]...individuals with type A personality are more likely to experience emotional exhaustion and negative perceptions", (p. 110). Worth mentioning, individuals possessing emotional stability, and greater emotional coping skills, are less likely to experience depression or anxiety, and therefore less likely to experience compassion fatigue or burnout (Sorenson et al., 2016; Yao et al., 2018). Meanwhile, self-efficacy refers to "perceived capability to perform a target behaviour," (Williams & Rhodes, 2016, p. 1) which significantly affects a person's sense of self and well-being. Poor self-efficacy is a risk factor for the development of compassion fatigue and burnout (Sorenson et al., 2016). In addition, social isolation and alienation may result in poor coping skills, making it more challenging to overcome traumatic events (Shepard, 2013).

**Substance use.** Healthcare professionals may engage with maladaptive coping strategies to deal with stress. This can include employing negative coping measures, such as self-medicating with drugs or alcohol (Büssing et al., 2017; Shepard, 2013). The findings of Kaffash's (2017) survey of 816 physicians found that one in nine physicians relied on alcohol to deal with work stress, while six percent turned to the use of prescription drugs. According to Ipser and Stein (2012), antidepressant medications may be administered to treat STSD symptoms characteristic of compassion fatigue. Benzodiazepines can also be taken to reduce work related anxiety (Kaffash, 2017). Dependence on pharmacological therapy to cope with mental health issues related to compassion fatigue and burnout mask symptoms, and fail to address the underlying causes.

## **Protective Factors**

**Skill Building.** Fortunately, there are many ways to reduce the risks of developing compassion fatigue and burnout among healthcare professionals. Self-compassion is one such strategy, which utilizes self-kindness and mindfulness skills or tools (Shattell & Johnson, 2018). Self-kindness reduces the self-criticism and negative thought distortions associated with chronic stress, anxiety, and depression (Shattell & Johnson, 2018). Greater self-compassion is associated with reduced levels of anxiety and depression (Delaney, 2018), while resilience building is

directly associated with reduced rates of compassion fatigue (Sorenson et al., 2016). Furthermore, self-compassion helps to prevent or lessen the severity of perceived stress, emotional exhaustion and burnout (Shattell & Johnson, 2018). Delaney (2018) noted that enhanced coping skills lessen the degree to which stress is perceived or experienced physically and emotionally.

Delaney (2018) explained that "mindfulness involves a balanced awareness of negative thoughts and feelings...[while] compassion...includes...kindness [to one-self]" (p. 2). According to Reimer (2013), findings from a study demonstrated that connectedness, meaningful work, mindfulness and positive enthusiasm were protective factors against compassion fatigue. In another study, a weekly training program, spanning eight weeks, taught mindfulness practices, such as meditation, which enabled nurses to effectively cope with stress (Delaney, 2018). As a result of this program, nurses were more self-aware of their thoughts, perceptions and feelings in response to workplace stressors. In addition, a separate study attempted to enhance meaningfulness when working in end of life care. To do so, staff utilized a journal in which they wrote down memories of the patient (Reimer, 2013). Consequently, the unit's Press-Ganey patient-satisfaction scores were consistently in the mid-90's and exceeded the national average of Magnet hospital scores (Reimer, 2013).

Overall, self-compassion, connectedness and mindfulness enhance interpersonal relationships (Shattell & Johnson, 2018), while resilience training is associated with reduced rates of compassion fatigue (Sorenson et al., 2016) and self-compassion is associated with reduced rates of burnout (Shattell & Johnson, 2018). The Schwazer's General Self Efficacy (GSE) Scale demonstrated that healthcare professionals were less likely to develop depression, exhaustion and helplessness in the presence of strong self-efficacy (Yao et al., 2018). Furthermore, self-efficacy is a protective variable which facilitates a more adaptive and healthy response to stressful or traumatic situations (Büssing et al., 2017). Self-efficacy can be enhanced through education, team-work and self-care (Sorenson et al., 2016); this would improve coping strategies and responses to stressful situations, while enhancing overall resilience. Furthermore, enhanced self-compassion may lessen the dependence on pharmacological therapy to cope, thus reducing medication costs for the employee and insurance company (often hospital reimbursed), while reducing the risk of addiction.

**Structural and social support.** Strong social support systems are associated with feelings of safety and security which serve as a protective factor against compassion fatigue and burn out. These social support systems may also facilitate the likelihood of partaking in self-care practices. Strong interpersonal and family relationships are also associated with stronger coping skills (Figley, 1995).

Coworkers and managers play an important role in facilitating a safe and supportive workplace as poor management in the workplace is associated with an increased incidence of compassion fatigue due to poor social support (Sorenson et al., 2016). Furthermore, educational interventions that emphasize open communication, positive relationships and team building among employees decrease the risk for developing compassion fatigue and burnout in healthcare professionals (Upton, 2018). According to Upton (2018) "the support of other members of staff at all levels, particularly those who are experienced, to share thoughts, emotions and concerns" (p. 22) enhanced feelings of support, as self-reported by acute medical care nurses. Furthermore, healthcare professionals must commit to protective strategies that involve socialization such as

exercise, interacting with family and friends, and leisurely travel (Shepard, 2013).

Front-line physicians and nurses are often overworked and overburdened with responsibility; therefore, organizations must seek to understand compassion fatigue in order to provide a work environment which facilitates teamwork and support (El-bar et al., 2013). Hospital-sponsored team-building activities that emphasize communication, resilience and compassion can lower rates of compassion fatigue and burnout (Büssing et al., 2017). As a result, this may lower rates of turnover and absenteeism, and improve health outcomes for healthcare professionals. Furthermore, adjustments in the work environment to enhance employee support will reduce the likelihood of medical errors and enhance patient safety. This in turn will protect the organization in terms of liability, employee retention, and expenses pertaining to medical leaves and / or substance-use recovery (Reith, 2018).

#### Limitations

The study limitations include a lack of information available specific to rates of compassion fatigue and burnout within all specialties of acute care. Further research which quantifies the rates of compassion fatigue and burnout within community health and extended care facility settings is needed. Presently the majority of research has been limited to hospital or outpatient settings. Most participants within the studies located within this review were physicians or nurses. As a result, the findings lack diversity in healthcare professional roles. Another limitation was a lack of available data that explicitly addressed the financial impact of compassion fatigue and burnout in healthcare. Financial motives may entice employers to address workplace concerns, such as workload, patient complexity, and lack of team support, to reduce risks associated with compassion fatigue and burnout. Additional studies could also explore the effectiveness of interventions on the economic status of healthcare systems and healthcare professionals, and also towards improved quality care for patients.

## **Conclusion**

Reducing the rates of compassion fatigue and burnout among healthcare professionals will simultaneously contribute to improved patient outcomes and enhanced healthcare professional well-being. Healthcare professionals exposed to unaddressed compassion fatigue and burnout may eventually leave the profession (Sorenson et al., 2016), which negatively impacts the team atmosphere and compromises patient outcomes (Upton, 2018). Enhancing structural support by hospital staff and administration is necessary to implement effective interventions to combat compassion fatigue and burnout (Upton, 2018). The underlying causes of chronic stress in a workplace should be identified by administrators. For example, workplace stress and perceived work burden leads to the development of compassion fatigue and burnout among healthcare professionals (Upton, 2018). In addition, individuals and workplaces should address self-efficacy and coping skills (Delaney, 2018) as protective factors to improve health outcomes for staff.

Moreover, because poor coping skills and a lack of social or structural support contribute to the development of compassion fatigue and burnout, it is important for hospitals and healthcare professionals to foster a compassionate and team-oriented atmosphere, which will protect the well-being of patients and staff alike (Büssing et al., 2017). Additionally, increased levels of mindfulness and self-compassion contribute to greater patient satisfaction (Reimer, 2013). Healthcare organizations that address compassion fatigue and burnout in healthcare professionals will decrease their reliance on anxiety, depression and insomnia medication, as

these are prescribed for conditions that may occur secondary to compassion fatigue and burnout in the workplace (Kaffash, 2017). Furthermore, enhanced self-compassion will decrease the risk for depression and substance abuse, which could otherwise result in missed work or medical errors (Upton, 2018) that carry legal implications. Healthcare professionals must rally together to advocate for personal self-care and improved working conditions, which may encourage healthcare systems to implement new policies or interventions to protect against compassion fatigue and burnout, leading to decreased turnover rates, decreased medical errors, decreased employee medical expenses, improved healthcare professional well-being and enhanced patient outcomes.

#### References

- Büssing, A., Falkenberg, Z., Schoppe, C., Recchia, D. R., & Poier, D. (2017). Work stress associated cool down reactions among nurses and hospital physicians and their relation to burnout symptoms. *BMC Health Services Research*, *17*(1). <a href="https://doi.org/10.1186/s12913-017-2445-3">https://doi.org/10.1186/s12913-017-2445-3</a>
- Delaney, M. C. (2018). Caring for the caregivers: Evaluation of the effect of an eight-week pilot mindful self-compassion (MSC) training program on nurses' compassion fatigue and resilience. *PLOS One*, *13*(11). <a href="https://doi.org/10.1371/journal.pone.0207261">https://doi.org/10.1371/journal.pone.0207261</a>
- El-bar, N., Levy, A., Wald, H.S., Biderman, A. (2013). Compassion fatigue, burnout and compassion satisfaction among family physicians in the Negev area a cross-sectional study. *Israel Journal of Health Policy Research*, *2* (31). https://doi.org/10.1186/2045-4015-2-31
- Figley, C. R. (1995). Compassion fatigue as secondary traumatic stress disorder: An overview. In C. R. Figley (Ed.), *Brunner/Mazel psychological stress series, No. 23. Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized* (pp. 1–20). New York, NY: Routledge.
- Ipser, J. C., & Stein, D. J. (2012). Evidence-based pharmacotherapy of Post-Traumatic Stress Disorder (PTSD). *International Journal of Neuropsychopharmacology*, *15*(6), 825–840. https://doi.org/10.1017/S1461145711001209
- Janjhua, Y., & Chandrakanta (2012). Behavior of personality type toward stress and job performance: A study of healthcare professionals. *Journal of Family Medicine and Primary Care*, 1(2), 109–113. https://doi.org/10.4103/2249-4863.104969
- Kaffash, J. (2017, November 1). *Revealed: One in seven GPs turns to alcohol and drugs to cope.* Pulse. Retrieved from, <a href="http://www.pulsetoday.co.uk/revealed-one-in-seven-gps-turns-to-alcohol-and-drugs-to-cope/20035569.article">http://www.pulsetoday.co.uk/revealed-one-in-seven-gps-turns-to-alcohol-and-drugs-to-cope/20035569.article</a>
- Maslach, C., & Leiter, M. P. (2016). Understanding the burnout experience: recent research and its implications for psychiatry. *World Psychiatry: Official Journal of the World*

- Psychiatric Association (WPA), 15(2), 103–111. https://doi.org/10.1002/wps.20311
- Nimmo, A., & Huggard, P. (2013). A Systematic review of the measurement of compassion fatigue, vicarious trauma, and secondary traumatic stress in physicians. *Australasian Journal of Disaster & Trauma Studies*, 2013(1), 37–44. https://doi.org/10.1007/s41542-019-00045-1
- Reimer, N. (2013). Creating moments that matter: Strategies to combat compassion fatigue. *Clinical Journal of Oncology Nursing*, *17*(6), 581–582. https://doi.org/10.1188/13.CJON.581-582
- Reith, T. P. (2018). Burnout in United States healthcare professionals: A narrative review. *Cureus*, 10(12). https://doi.org/10.7759/cureus.3681
- Shattell, M., & Johnson, A. (2018). Mindful self-compassion: How it can enhance resilience. *Journal of Psychosocial Nursing and Mental Health Services*, *56*(1), 15–17. <a href="https://doi.org/10.3928/02793695-20171219-01">https://doi.org/10.3928/02793695-20171219-01</a>
- Shepard, B. C. (2013). Between harm reduction, loss and wellness: on the occupational hazards of work. *Harm Reduction Journal*, 10(5), 1–17. https://doi.org/10.1186/1477-7517-10-5
- Sorenson, C., Bolick, B., Wright, K., & Hamilton, R. (2016). Understanding compassion fatigue in healthcare providers: A review of current literature. *Journal of Nursing Scholarship*, 48(5), 456–465. https://doi.org/10.1111/jnu.12229
- Upton, K. V. (2018). An investigation into compassion fatigue and self-compassion in acute medical care hospital nurses: A mixed methods study. *Journal of Compassionate Health Care*, 5(7), 1–27. https://doi.org/10.1186/s40639-018-0050-x
- Yao, Y., Zhao, S., Gao, X., An, Z., Wang, S., Li, H., Li, Y., Gao, L., Lu, L., & Dong, Z. (2018). General self-efficacy modifies the effect of stress on burnout in nurses with different personality types. *BMC Health Services Research*, *18*(667), 1–9. <a href="https://doi.org/10.1186/s12913-018-3478-y">https://doi.org/10.1186/s12913-018-3478-y</a>