

Burnout and Mindfulness Self-Compassion in Nurses of Intensive Care Units

Cross-Sectional Study

■ *Pilar Gracia-Gracia, BSN* ■ *Bárbara Oliván-Blázquez, PhD*

Nursing staff has been identified as one of the main risk groups for the development of burnout. The objective of this study is to analyze the ability of self-compassion mindfulness related to burnout in nurses of intensive care units. The results show that the level of burnout of nursing staff is inversely related to their level of self-compassion.

KEY WORDS: *burnout, ICU, mindfulness, nursing, self-compassion* *Holist Nurs Pract* 2017;31(4):225–233

The burnout syndrome was introduced from a clinical viewpoint by Freudenberger¹ (1974) and developed by Maslach² (1976) with the creation of an assessment tool, the Maslach Burnout Inventory³ (MBI) that measures 3 dimensions: emotional exhaustion, depersonalization, and personal accomplishment.

Burnout involves a psychological risk with negative consequences for both the individuals who suffer and the organizations they work for. It appears before a continued response to work stress and may affect the physical and mental health, as well as the social relationship of affected workers. It is very prevalent among health care professionals and within these, nursing is an occupation with a greater impact on suffering emotional exhaustion due to its unique characteristics⁴⁻⁷: direct contact with the disease and

pain, relationship with problematic patients and relatives, lack of autonomy and authority for decision making, lack of personnel that leads to a work overload, and also shift work.

Some studies with nurses have concluded that the core of burnout is the emotional exhaustion and depersonalization⁸ although other authors have shown a low sense of personal accomplishment produced by a growing disenchantment resulting in a decrease in self-efficacy.^{9,10} The signs of distress and guilty feeling may have consequences on the health of nurses, especially at the psychological level (anxiety and stress),¹¹ increasing the rate of work absenteeism.¹² According to other authors, the issues burdening nursing staff (in terms of workplace, job description, responsibility, unpredictability, and exposure to potentially traumatic situations) are strongly related to the content of their work and their nursing specialty.¹³⁻¹⁶ That is why nursing staff of the intensive care unit (ICU) have been widely analyzed due their exposure to numerous sources of stress^{8,17,18}: technicalization of the work environment, critical events, severity of patients to attend, close contact with death, with pain, and so forth.

Mindfulness is a theoretical construct that comes from the Oriental traditions (Theravada Buddhism) and their recent adaptation to the culture and science in the West. It is the English word to translate “sati,” a term of Pali language denoting awareness, attention, and memory.¹⁹ It describes a state of mind that can be obtained with training, and it consists in being in the present mindfully, without the mind rambling about the future or the past, without judging and without

Author Affiliations: Defense General Hospital, Zaragoza, Spain (Ms Gracia-Gracia); and Departments of Physiology and Nursing (Ms Gracia-Gracia) and Psychology and Sociology (Dr Oliván-Blázquez), University of Zaragoza, Zaragoza, Aragon, Spain.

The authors acknowledge the nursing staff and supervisors of ICUs of General Defense Hospital, Royo Villanova Hospital, Nuestra Señora de Gracia Hospital, and MAZ Hospital, all of them in Zaragoza (Spain).

Pilar Gracia-Gracia is the principal researcher and developed the original idea for the study. The study design was further developed also by Pilar Gracia-Gracia. Bárbara Oliván-Blázquez developed the statistical methods. All authors have read and corrected draft versions and approved the final version. There have not been any previous presentation of these data.

The authors declare that they have no conflicts of interest.

Correspondence: Pilar Gracia-Gracia, BSN, Department of Psychiatry and Nursing, Faculty of Health Sciences, University of Zaragoza, Domingo Miral s/n, 50009 Zaragoza, Spain (mariap.gracia@gmail.com).

DOI: 10.1097/HNP.0000000000000215

feelings of attachment or rejection to what is already happening in that moment. This approach produces energy, clarity of mind, and joyfulness²⁰ in the individual. The mindfulness-based techniques are often considered as part of the “third-generation therapies” that fall upon the need to change the relationship with our inner experience rather than try to eliminate that experience. The most important milestone for the development of such therapies was the founding in 1979 of the Center for Mindfulness at the University of Massachusetts, by Jon-Kabat-Zinn, who wrote the seminal work on “Mindfulness-based stress reduction.”²¹

The meta-analysis suggests that mindfulness-based interventions (MBIs) are effective in treating many psychological and somatic disorders such as anxiety or mood disorders.²² There is clear evidence of the benefit of mindfulness interventions on nursing staff, as in different studies, it has been found that they improve the coping with stress and diminish burnout,²³⁻²⁶ increase relaxation capability and life satisfaction,²⁷ increase self-control,²⁸ decrease ruminative thinking and behavior,^{29,30} and decrease emotional exhaustion and anxiety.³¹ The studies have also shown that mindfulness interventions increase the participant’s self-care, self-confidence, compassion, and self-learning, as well as the spiritual dimension.³² In almost all of these interventions, the methodology proposed by Kabat-Zinn³³ was used. In the same line, other studies show that the increase of concentration provides safer patient care and improved health care treatment.³⁴⁻³⁶

Positive mental states are commonly associated with MBIs.³⁷ These states may include the attitudes on how the situations are approached (acceptance) or the approach taken in interpreting the private experiences (self-compassion). In recent years, one of the positive mental states associated with mindfulness is self-compassion. Suffering is inherent to the human condition. It is an experience shared by all members of our species, throughout the different cultures, along the history of mankind. Helping to alleviate this suffering is the goal of mindfulness; hence, self-compassion and compassion are the key elements to achieve it.

When we talk about compassion, we are talking about the feeling of kindness, care, and understanding for people who feel pain (including us), along with the emerging desire to diminish that suffering, highlighting a recognition of sharing human condition, fragile and imperfect.³⁸ According to Osho,³⁹

compassion naturally derives from understanding; when a person manages to understand another in a deep way, compassion naturally sprouts. From the psychological point of view, one of the definitions most commonly used in psychology is that of Goetz,⁴⁰ who defines it as “the feeling that comes from witnessing the suffering of another and leads to a desire to help.”

Self-compassion was defined in the psychological realm by Kristin Neff⁴¹ as “being affected by and open to the own suffering, without avoiding or disconnecting it, generating the desire to relieve the suffering and heal itself in a friendly way.” It has 3 interrelated components and each one of them has 2 parts, the presence of a construction and its negation: (1) Friendliness with oneself. Be gentle, kind and encouraging when things go wrong in our lives, as opposed to the judgment for oneself; (2) Shared humanity: Pain and suffering are part of the human experience as opposed to the feeling of isolation; and (3) Mindfulness: Weighted and balanced attention rather than overidentification to difficult and uncomfortable thoughts and experiences. There is scientific evidence that self-compassion is associated with well-being, emotional intelligence, social attachment, life satisfaction, feelings of competence, happiness, optimism, and wisdom.^{42,43} A meta-analysis of MacBeth and Gumley⁴⁴ notes that the increase in self-compassion is associated to a significant decrease in the levels of anxiety, depression, and stress.

Nurses provide care to patients and families who are suffering and this is where the emotions are heightened, playing an important role in the relationship and communication between nurses, patients, and families. So mindfulness and compassion are essential components of the care given by nurses, in the same way without self-compassion they may not be willing to be compassionate with patients. According to Bush,⁴⁵ compassion is the fundamental value of care provided by nurses as well as passion, strength, emotion, and hope against disease and despair. However, continually dealing with the physical and emotional needs of others is very stressful, and sometimes it happens that nurses ignore the signs of stress and do not attend to their own emotional needs. This can lead to the insidious onset of “fatigue of compassion,” described as the physical, emotional, and spiritual exhaustion in the care of patients.⁴⁶ In addition, after prolonged exposure to trauma and loss, nurses can start integrating the

suffering of their patients, increasing their stress and emotional pain.

The aim of this study is to investigate the correlation between burnout and the ability of self-compassion mindfulness and establish a predictive model for the occurrence of burnout in nursing staff in ICUs.

METHODOLOGY

Design

This research is an observation-based cross-sectional descriptive study with quantitative and multicentric approach.

Subjects and sample

Inclusion criteria were active nursing staff with a professional experience of 1 year or greater in ICU. Exclusion criteria were the professionals who did not satisfy those requirements.

The study was conducted in 4 adult ICUs of the secondary network of hospitals in the city of Zaragoza (Spain). These hospitals are characterized by polyvalent ICUs and a similar number of beds (between 6 and 10 beds). A sample of 68 nurses was recruited.

Variables and measuring instruments

The variables analyzed in the study were sociodemographic variables, occupational variables, burnout, and compassion.

Sociodemographic variables were gender (male/female), age, personal relationships (steady partner or without partner or unsteady partner), number of children, and educational level (university degree 4 years, university degree 3 years, or assistant health technician).

Occupational variables were years of experience, years of experience in ICU, employment status (permanent, temporal, and others), length of time in the center, performing shift (rotating, morning, evening, night, and others), and number of patients attended to daily (1-2, 2-3, 3-4).

Burnout and compassion

The burnout variable was assessed through the MBI in its classic version for health care professionals MBI-Human Services Survey.⁴⁷ This questionnaire is the most widely used to assess the frequency and intensity of burnout syndrome within the health care

work context. It has high internal consistency and reliability close to 90%. It consists of 22 items, and 3 subscales can be distinguished, the 3 measuring, at the same time, the 3 dimensions that shape the syndrome. (a) Emotional Exhaustion (EE) describing feelings of being overwhelmed and emotionally exhausted by work. This subscale consists of 9 items. The maximum score is 54. (b) Depersonalization (DP) describing an impersonal response and lack of feelings toward the subject that is being attended or serviced. This subscale consists of 5 items: The maximum score is 30. (c) Personal accomplishment at work (PA) describing feelings of competence and successful performance on the job to others. This subscale consists of 8 items. The maximum score is 48. The study used the frequency form. Thus, accordingly, the subjects evaluate each item of the questionnaire with a Likert-type scale in which they indicate how often they have experienced the situation described in the item over the past year. This frequency range has 7 items ranging from 0 “Never” to 6 “Every day.” The individual’s scores are classified by a system of percentiles for each scale. Those who score above the 66th percentile are included in the “high” category, between 33 and 66 percentile in the “medium” category, and below the 33 percentile in the “low” category.⁴⁸ A high score of EE and DP and a low score of PA are considered a burnout profile.

Compassion variable was assessed through Self-Compassion Scale developed by Kristin Neff,⁴⁹ which has been recently validated in Spanish with a high degree of internal consistency.⁵⁰ It consists of 26 items that measure 6 components of self-compassion: (a) Self-kindness can be understood as the way of treating oneself with care and understanding, when a moment of difficulty or suffering appears, recognizing in oneself love, happiness, and affection. It consists of 5 items. The maximum score is 25. (b) Self-judgment is understood as treating oneself in a self-critical and hurtful way while in difficult situations. It involves a sense of hostility and constant demand on oneself or on different aspects of oneself that can be harsh and unforgiving. It consists of 5 items. The maximum score is 25. (c) Common humanity: feeling that mistakes are part of the human condition. It consists of 4 items. The maximum score is 20. (d) Isolation: it is understood as having a sense of separation or disconnection with other people, particularly in times of confusion, fear, imperfection, and weakness. It consists of 4 items. The maximum score is 20. (e) Mindfulness: when something painful happens, it

implies being aware of the current experience with clarity and balance. It consists of 4 items. The maximum score is 20. (f) Overidentification: it's when appears the feeling of sadness, tendency of obsess and looking at everything that is wrong. It consists of 4 items. The maximum score is 20. Finally, these 6 factors are analyzed ending up in 3 subscales. Subscale of self-kindness, which is made of the average score of self-kindness factor and the indirect score of self-judgment factor; subscale of humanity that is the average of the direct score of humanity factor and the indirect score of the isolation factor; and subscale of mindfulness, which is the average of the direct score of mindfulness factor and the indirect score of the overidentification factor.⁵⁰

Data collection

Each participant was provided with a letter of informed consent where the characteristics of this research, the survey of sociodemographic and work variables, and the questionnaires MBI-Human Services Survey and Self-Compassion Scale were described. Prior to the delivery of documentation, an interview with the ICU's nursing supervisors of the different hospitals was agreed to request permission and collaboration. The delivery was carried out in a personalized way through the supervisors, and a few mailboxes were installed for collection at all times, ensuring anonymity and confidentiality of the data collected. The data collection was conducted during the months of January and February 2016.

Data analysis

Having analyzed the normal distribution of the sample, a descriptive analysis of the sample was performed, calculating the mean and standard deviation for each of the quantitative variables, and measures for frequencies and percentages for qualitative variables were used. For the correlational analysis, the Pearson correlation coefficient was used, considering a statistically significant relationship when the *P* value was less than .05.

A multiple regression was carried forward for each of the 3 dimensions of burnout (EE, DP, and PA), including at first sociodemographic variables (gender and age), then work variables (years of professional experience, years of experience in ICU, employment status, work center, seniority in the center, and shift performed), and finally the variables related to the

ability of mindfulness and compassion (self-kindness-self-judgment, humanity-isolation, and mindfulness-overidentification). The strength of the predictive model was calculated using the *R* and *R*², and factors with a significant prediction were considered when the *P* value was less than .05.

Data analysis was performed using SPSS 21.0 statistical package on its 21.0 Windows version.

RESULTS

A total of 89 questionnaires were delivered from which 69 were collected (77.5%), with 1 being excluded because of lack of data. Only 68 were considered in the study.

Table 1 shows the sociodemographic and occupational characteristics of the sample and the results of the variables of burnout and compassion. The profile of a typical participant was as follows: it was a woman, of approximately 38 years of age, married or with a steady partner, with nursing degree (3 years) studies, and with a professional experience of 8 years, of whom 7 has been working in the ICU, with temporal contract and rotating shift. Regarding burnout, the typical participant presented low EE, low DP, and high PA, and regarding compassion variable, the participant presented scores above 50% in the 3 analyzed factors (self-kindness-self-judgment, humanity-isolation, and mindfulness-overidentification).

Table 2 shows the results of correlation between the dimensions of burnout syndrome and the ones of the compassion. This table shows a significant inverse correlation between EE and self-kindness and self-judgment (*P* = .005); humanity and isolation (*P* = .001); and mindfulness and overidentification (*P* = .019). There is also a significant inverse correlation between DP and self-kindness and self-judgment (*P* = .07) and humanity and isolation (*P* = .010). It means that nurses who scored higher on the subscales of self-kindness and humanity had a lower score in EE and DP subscale of the MBI-Human Services Survey. Finally, there is a significant direct correlation between PA and self-kindness and self-judgment (*P* = .046) and humanity and isolation (*P* = .013); nurses who scored higher on the subscales of self-kindness and humanity had a higher score in PA subscale.

Related to the predictive model of burnout, Table 3 shows the *R* and *R*² of the model of the dimensions of EE, DP, and PA of burnout, and Table 4 shows the results of the factors that can predict each

TABLE 1. Description of Sociodemographic and Occupational Characteristics, Burnout, and Compassion Variables

| Variables | Professionals, N = 68 |
|-------------------------------------|-----------------------------|
| Sociodemographic variables | |
| Gender | 8.8% males 91.2% females |
| Age | Mean = 38.49 y, SD = 9.26 |
| Personal relationships | |
| Steady partner | 57% |
| Without partner or unsteady partner | 11% |
| Number of children | Mean = 0.97, SD = 1.09 |
| Academics level | |
| University degree 4 y | 10.3% |
| University degree 3 y | 88.2% |
| Assistant health technician | 1.5% |
| Occupational variables | |
| Years of professional experience | Mean = 14.79 y, SD = 8.04 |
| Years of experience in ICU | Mean = 7.88 y, SD = 7.18 |
| Employment status | |
| Permanent | 44.1% |
| Temporal | 52.9% |
| Others | 2.9% |
| Length of time in the center | Mean = 9.70 y, SD = 8.04 |
| Performing shift | |
| Rotating | 83.8% |
| Morning | 2.9% |
| Evening | 1.5% |
| Night | 4.4% |
| Others | 7.4% |
| Number of patients attending daily | |
| 1-2 | 60.3% |
| 2-3 | 36.8% |
| 3-4 | 2.9% |
| Burnout | |
| Emotional exhaustion | Mean = 12.47, SD = 7.06 |
| Depersonalization | Mean = 6.62, SD = 4.12 |
| Personal accomplishment | Mean = 37.78, SD = 7.07 |
| Compassion | |
| Self-kindness-self-judgment | Mean = 15.30, SD = 3.40 |
| Humanity-isolation | Mean = 13.18, SD = 2.36 |
| Mindfulness-overidentification | Mean = 12.38, SD = 2.94 |

Abbreviation: ICU, intensive care unit.

of the dimensions of burnout, in relation to personal, occupational, and compassion variables. Regarding the EE dimension of burnout, significant predictors are the years of overall professional experience and the humanity-isolation factor of compassion. Regarding the DP dimension, the only significant predictive variable is the self-kindness-self-judgment factor of compassion. And finally, with regard to the PA dimension, significant predictors are the years of overall professional experience and the humanity-isolation factor of compassion. It is noteworthy that, as can be seen, the variables related to the compassion-

mindfulness have a negative beta for the EE and DP dimensions and a positive beta for the PA dimension.

DISCUSSION

Already there are studies that show mindful meditation as a tool for healing burnout in critical care nursing,⁵¹ but there are few studies about burnout and self-compassion as one of the positive mental states associated with mindfulness.

In our study, the response rate was of 77.5% similar to the one commonly found in other studies related

TABLE 2. Correlation Between the Dimensions of Burnout Syndrome and the Factors of the Compassion

| Burnout | Self-Kindness- Self-Judgment | Humanity Isolation | Mindfulness Overidentification |
|-------------------------|---------------------------------|--------------------|-----------------------------------|
| Emotional exhaustion | | | |
| Pearson correlation | − 0.341 | − 0.410 | − 0.292 |
| <i>P</i> | .004 | .001 | .016 |
| Depersonalization | | | |
| Pearson correlation | − 0.325 | − 0.295 | − 0.143 |
| <i>P</i> | .007 | .015 | .245 |
| Personal accomplishment | | | |
| Pearson correlation | 0.245 | 0.309 | 0.194 |
| <i>P</i> | .044 | .010 | .112 |

to the burnout.⁵² Comparison of the mean scores obtained in our average with regard to the benchmark regulatory scores offered by the MBI version adapted for the Spanish population, and the study of occupational nursing population by Gil-Monte and Peiró⁵³ allows us to put our sample at low levels of emotional exhaustion (85.2%) and depersonalization (82.3%) and at high levels of personal fulfillment (80.8%). These results are consistent with the studies of Solano⁵⁴ and Adriaenssens⁵⁵ not coinciding with other studies in which moderate levels of EE and high levels with regard to DP and lack of PA are at work.⁵⁶ It is noteworthy that when the dimensions of burnout among nursing staff of ICUs and hospitalization are compared, the latter score higher on EE.⁵⁷ When levels of burnout in different ICUs are compared, it is in the polyvalent ICU where there are higher levels of EE.⁵⁸

The correlation results lead us to appreciate that nurses in circumstances and moments they perceive as incorrect or hard at work are kind and caring about themselves. If they recognize and realize that there are many people who may be experiencing emotions or thoughts very similar to their own, all with a balanced and fair view, they will feel less exhausted emotionally, developing less attitudes, feelings, and negative and cynical behavior toward patients, thus contributing to the perception of success in their work.

TABLE 3. Predictive Power (*R* and *R*²) of the Model of Burnout

| Burnout Model | <i>R</i> | <i>R</i> ² |
|-------------------------|----------|-----------------------|
| Emotional exhaustion | 0.544 | 0.296 |
| Depersonalization | 0.325 | 0.105 |
| Personal accomplishment | 0.425 | 0.181 |

The lack of statistical significance in the dimensions of DP and PA with mindfulness and overidentification but with statistical significance with self-kindness and humanity leads us to appreciate that for nursing staff, not being so self-critical and without feelings of isolation with the rest of the people is going to help them to make a negative self-assessment with regard to the ability to perform their work and the relations with patients, hence not being as decisive for the overidentification.

In the same vein, the regression results indicate that there are 2 fundamental factors in predicting burnout: the years of experience working in ICUs and variables related to compassion. So, to prevent burnout, as the factor “years of experience in ICUs” is a difficult variable to change, we must focus on the compassion variable. In hospitals and mainly ICU, compassion may be a useful tool to reduce or avoid burnout of ICU’s workers, since it may reduce the EE and DP dimension and increase PA. In fact, in a pilot study⁵⁹ with nurses in a pediatric ICU in the city of Los Angeles where pre- and post (no control group) interventions of mindfulness and self-compassion were performed, similar results were obtained in the correlational analysis of burnout and self-compassion, demonstrating that these interventions are effective in significantly decreasing stress and increasing self care in nurses.

Similarly, in a review of the literature, “Mindfulness, Self-Compassion, and Empathy Among Health Care Professionals,”⁶⁰ there is evidence that training programs in mindfulness-based stress reduction can lead to a significant increase in self-compassion, and increased self-compassion may decrease the perception of stress. Mindfulness allows greater clarity in the development of self-compassion, while self-compassion “clears the way” for care by

TABLE 4. Factors That Can Predict Each of the Dimensions of Burnout, in Relation to Personal, Occupational, and Compassion Variables

| | Emotional Exhaustion | | Depersonalization | | Personal Accomplishment | |
|----------------------------------|----------------------|----------|-------------------|----------|-------------------------|----------|
| | β | <i>P</i> | β | <i>P</i> | β | <i>P</i> |
| Gender | -.002 | .985 | -.040 | .733 | -.107 | .354 |
| Age | .41 | .852 | .063 | .594 | -.039 | .870 |
| Years of professional experience | .319 | .001 | .005 | .967 | -.260 | .010 |
| Years of experience in ICU | .264 | .089 | .131 | .267 | -.073 | .667 |
| Employment status | -.073 | .590 | -.087 | .461 | .003 | .986 |
| Length of time in the center | -.104 | .525 | -.067 | .572 | -.051 | .773 |
| Performing shift | -.108 | .329 | -.011 | .923 | .084 | .484 |
| Self-kindness-self-judgment | -.083 | .575 | -.393 | .007 | .037 | .814 |
| Humanity-isolation | -1.048 | .001 | -.133 | .420 | .782 | .024 |
| Mindfulness-overidentification | .059 | .679 | .167 | .310 | -.099 | .523 |

Abbreviation: ICU, intensive care unit.

reducing interfering care cognitions such as negative rumination.

Those who work in the health care field know that being able to “endure the suffering of others” is essential. Care is one of the components of the compassion⁶¹ and the action of care has the potential to alleviate the suffering of an individual,⁶² hence it is so important that nurses are self-compassive so they can be compassionate as well with patients later on, but to date, few studies have focused on the self-compassion of nurses and fewer still have considered their relationship with the self-care of nurses and the attention to patients. Therefore, we believe that it is appropriate to carry out investigations to discuss on a broader view about the compassionate care, the assessment of the primacy of self-compassion and self-care, to support the compassionate care of nurses to patients.

In this complex world where technology is so present, changing at a dizzying pace, it is easy to lose sight of the human factor in health care. Hence, the introduction of these interventions can help keep in mind our goal of patient care that is “alleviate their suffering” both in the physical and mental spheres.

Somehow the great impact that the introduction of mindfulness in the fields of health, education, business and sport is having on the Western world, is due, at least partly, to the wearing of our own modern and western sociocultural paradigm which is crying out for renewal.

Our finding should be interpreted with caution because it presents some limitations. The first limitation is that we have not analyzed other variables such as emotional intelligence or personality factors,

but there are no consistent research findings on the direction of the relationship among emotional intelligence, mindfulness, and compassion.⁶³ Second, it is debatable whether the results of this study have been influenced by the fact that the settings were ICUs of hospitals in the secondary network and if the same study in ICUs of tertiary network ICUs (with all specialties and high technology) would yield the same results. This issue can be raised in a future study. Another limitation of this study is the sample size, but low significant values obtained both of the correlation and regression analysis indicate that mindfulness and compassion are variables to consider in the treatment or prevention of burnout of nurses of ICUs. The next future line of research will be conducting a program of mindfulness and self-compassion in ICU’s nursing staff to prevent burnout and in turn measuring the effects that this intervention generates in patient care.

CONCLUSIONS

The study results show the correlation between burnout and the ability of mindfulness self-compassion in nursing staff in ICUs. The compassion variables have also demonstrated a predictive role in the outcome of the burnout. The next step demonstrated that programs of mindfulness intervention and self-compassion help nurses to reduce the perceived stress and the emotional strain that is produced through daily contact with serious illness and may improve their personal well-being and in turn prevent the development of burnout.

REFERENCES

- Freudenberger HJ. Staff Burnout. *J Soc Issues*. 1974;30:159-165.
- Maslach C. Burned out. *Hum Behav*. 1976;5:16-22.
- Maslach C, Jackson SE. *Maslach Burn-out Inventory*. Palo Alto, CA: Consulting Psychologists Press; 1986.
- Grau A, Suñer R, García M. Burnout syndrome in health workers and relationship with personal and environmental factors. *Gac Sanit*. 2005;19(6):463-470.
- Molina JM, Avalos F, Giménez I. Burnout in nursing hospital care. *Enferm Clin*. 2005;15:275-282.
- Gelsema T, Van der Doef M, Maes S, Janssen M, Akerboom S, Verhoeven C. A longitudinal study of job stress in the nursing profession: causes and consequences. *J Nurs Manage*. 2006;14:289-299.
- Hasselhorn H, Tackenberg P, Muller B. *Working Conditions and Intent to Leave the Profession Among Nursing Staff in Europe*. Stockholm, Sweden: National Institute for Working Life; 2003.
- Bakker AB, Le Blanc PM, Schaufeli WB. Burnout contagion among intensive care nurses. *J Adv Nurs*. 2005;51(3):276-287.
- McGrath A, Reid N, Boore J. Occupational stress in nursing. *Int J Nurs Stud*. 2003;40(5):555-565.
- Piko BF. Burnout, role conflict, job satisfaction and psychosocial health among Hungarian health care staff: a questionnaire survey. *Int J Nurs Stud*. 2006;43(3):311-318.
- Leiter MP. Perception of risk: an organizational model of occupational risk, burnout, and physical symptoms. *Anxiety Stress Coping*. 2005;18(2):131-144.
- Gil-Monte PR, Garcia-Juesas JA. Effects of labor overload and self-efficacy on burnout syndrome at work. A longitudinal study in nursing. *Revista Mexicana de Psicología*. 2008;25(2):329-337.
- Browning L, Ryan C, Thomas S, Greenberg M, Rolniak S. Nursing specialty and burnout. *Psychol Health Med*. 2007;12:248-254.
- Ergun F, Oran N, Bender C. Quality of life of oncology nurses. *Cancer Nurs*. 2005;28:193-199.
- Eriksen W. Practice area and work demands in nurses' aides: a cross-sectional study. *BMJ Public Health*. 2006;6:97.
- Mealer L, Burnham E, Goode C, Rothbaum B, Moss M. The prevalence and impact of post traumatic stress disorder and burnout in nurses. *Depress Anxiety*. 2009;26:1118-1126.
- Ríos MI, Peñalver F, Godoy C. Burnout and perceived health in intensive care nurses. *Enfermería Intensiva*. 2008;19(4):169-178.
- Ríos-Risquez MI, Sánchez-Meca J, Godoy-Fernández C. Hardy personality, self-efficacy, and general health in nursing professionals of intensive and emergency. *Psicothema*. 2010;22(4):600-605.
- Siegel RD, Germer CK, Olendzki A. Mindfulness: what is it? where did it come from? In: Didonna F, ed. *Clinical Handbook of Mindfulness*. New York, NY: Springer; 2009:17-35.
- Brown K, Ryan R. The benefits of being present: mindfulness and its role in psychological well being. *J Pers Social Psychol*. 2003;84:822-848.
- Kabat-Zinn J. *Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain, and Illness*. New York, NY: Dell; 1990.
- Hofmann SG, Sawyer AT, Witt AA. The effect of mindfulness-based therapy on anxiety and depression: a meta-analytic review. *J Consult Clin Psychol*. 2010;78:169-183.
- Cohen-Katz J, Wiley SD, Capuano T, Baker DM, Shapiro S. The effects of mindfulness-based stress reduction on nurse stress and burnout: a quantitative and qualitative study. *Holist Nurs Pract*. 2004;18(6):302-308.
- Cohen-Katz J, Wiley SD, Capuano T, Baker DM, Kimmel S, Shapir S. The effects of mindfulness-based stress reduction on nurse stress and burnout, part II: a quantitative and qualitative study. *Holist Nurs Pract*. 2005;19(1):26-35.
- Cohen-Katz J, Wiley S, Capuano T, Baker DM, Deitrick L, Shapiro S. The effects of mindfulness-based stress reduction on nurse stress and burnout: a qualitative and quantitative study, part III. *Holist Nurs Pract*. 2005;19(2):78-86.
- Lichtenberg P, Hartman S, Bushardt SC. Rekindling the flame: using mindfulness to end nursing burnout. *Nurs Manage*. 2013;44(11):24-29.
- Mackenzie CS, Poulin PA, Seidman-Carlson R. A brief mindfulness-based stress reduction intervention for nurses and nurse aides. *Appl Nurs Res*. 2006;19(2):105-109.
- Scheick DM. Developing self-aware mindfulness to manage countertransference in the nurse-client relationship: an evaluation and developmental study. *J Prof Nurs*. 2011;27(2):114-123.
- Martín A, García J. The mindfulness-based stress reduction program (MBSR) reduces stress-related psychological distress in healthcare professionals. *Span J Psychol*. 2010;13(2):897-905.
- Kang YS, Choi SY, Ryu E. The effectiveness of a stress coping program based on mindfulness meditation on the stress, anxiety, and depression experienced by nursing students in Korea. *Nurse Educ Today*. 2009;29(5):538-543.
- Chen Y, Yang X, Wang L, Zhang X. A randomized controlled trial of the effects of brief mindfulness meditation on anxiety symptoms and systolic blood pressure in Chinese nursing students. *Nurse Educ Today*. 2013;33(10):1166-1172. doi:10.1016/j.nedt.2012.11.014.
- Smith SA. Mindfulness-based stress reduction: an intervention to enhance the effectiveness of nurses' coping with work-related stress. *Int J Nurs Knowl*. 2014;25(2):119-130. doi: 10.1111/2047-3095.12025.
- Kabat-Zinn J. *Wherever You Go, There You Are: Mindfulness Meditation in Everyday Life*. New York, NY: Hyperion; 1994.
- Beddoe AE, Murphy SO. Does mindfulness decrease stress and foster empathy among nursing students? *J Nurs Educ*. 2004;43(7):305-312.
- Irving J, Dobkin P, Park J. Cultivating mindfulness in health care professionals: a review of empirical studies of mindfulness-based stress reduction. *Complement Ther Clin Pract*. 2009;15:61-66.
- Shapiro S, Thakur S, Sousa S. *Mindfulness for Health Care Professionals and Therapists in Training*. Mindfulness for health care professionals and therapists in training. In: Baer RA, ed. *Mindfulness-Based Treatment Approaches*. 2nd ed. Cambridge, MA: Academic Press; 2014:319-345.
- Fredrickson BL, Cohn MA, Coffey KA, Pek J, Finkel SM. Open hearts builds lives: positive emotions, induced through loving-kindness meditation, build consequential personal resources. *J Pers Soc Psychol*. 2008;95:1045-1062.
- Germer CK, Siegel RD. *Wisdom and Compassion in Psychotherapy: Deepening Mindfulness in Clinical Practice*. New York, NY: Guilford Press; 2012.
- Osho. *Compassion. The Ultimate Flowering of Love*. Barcelona, Spain: Grijalbo; 2007.
- Goetz JL, Keltner D, Simon-Thomas E. Compassion: an evolution analysis and empirical review. *Psychol Bull*. 2010;136(3):351-374.
- Neff KD. Self-compassion: an alternative conceptualization of a healthy attitude toward oneself. *Self Identity*. 2003;2:85-102. doi:10.1080/15298860309032.
- Neff K. The science of self-compassion. In: Germer C, Siegel R eds. *Compassion and Wisdom in Psychotherapy*. New York, NY: Guilford Press; 2012:79-92.
- Barnard LK, Curry JF. Self-compassion: conceptualizations, correlates, & interventions. *Rev Gen Psychol*. 2011;15(4):289-303.
- MacBeth A, Gumley A. Exploring compassion: a meta-analysis of the association between self-compassion and psychopathology. *Clin Psychol Rev*. 2012;32:545-552.
- Bush N. Compassion fatigue: are you at risk? *Oncol Nurs Forum*. 2009;36:24-28.
- Lombardo B, Eyre C. Compassion fatigue: a nurse's primer. *Online J Issues Nurs*. 2011;16(3):856-867.
- Seisdedos N. *MBI Maslach Burnout Inventory: Manual*. Madrid, Spain: T E A Ediciones; 1997:5-28.

48. Gil-Monte PR, Peiro JM. Validez factorial del Maslach Burnout Inventory en una muestra multiocupacional. *Psicothema*. 1999;11(3):679-689.
49. Neff KD. Development and validation of a scale to measure self-compassion. *Self Identity*. 2003;2:223-250.
50. Garcia-Campayo J, Navarro-Gil, Andrés E, Montero-Marin J, López-Artal L, Demarzo MM. Validation of the Spanish versions of the long (26 items) and short (12 items) forms of the Self-Compassion Scale (SCS). *Health Qual Life Outcomes*. 2014;12:4. doi: 10.1186/1477-7525-12-4.
51. Davies WR. Mindful meditation: healing burnout in critical care nursing. *Holist Nurs Pract*. 2008;22(1):32-36. doi:10.1097/01.HNP.0000306326.56955.14.
52. Ríos-Risqueza MI, Godoy Fernández C, Peñalver Hernández F, et al. Comparative study of burnout in nurses of intensive care and emergency. *Enferm Intensiva*. 2008;19(1):2-13.
53. Gil-Monte PR, Peiró JM. Comparative study of regulatory and differential criteria for the diagnosis of burnout syndrome according to the MBI-HSS in Spain. *Revista de psicología del trabajo y de las organizaciones*. 2000;16:135-492.
54. Solano MC, Hernández P, Vizcaya MF, Reig A. Burnout syndrome in nursing professionals of critical care units. *Enfermería Intensiva*. 2002;13(1):9-16.
55. Adriaenssens J, De Gucht V, Maes S. Determinants and prevalence of burnout in emergency nurses: a systematic review of 25 years of research. *Int J Nurs Stud*. 2015;52(2) 649-661.
56. Fuentelsaz C, Moreno T, Gómez T, González E. Work environment, satisfaction and burnout of nurses in critical care units and hospitalization units. *Enfermería Intensiva*. 2013;24(3):104-112.
57. Santana L, Hernandez E, Eugenio P, Sanchez M, Pérez R, Falcón R. Burnout syndrome among nurses and auxiliary staff of intensive care unit and hospital departments. *Enfermería Clin*. 2009;19(1): 31-34.
58. Frade MJ, Vinagre R, Zaragoza I, et al. Burnout syndrome in several intensive care units. *Enfermería Intensiva*. 2009;20(4):131-140.
59. Gauthier T, Meyer RML, Grefe D, Jeffrey I. An on-the-job mindfulness-based intervention for pediatric ICU nurses: a pilot. *J Pediatr Nurs*. 2015;30:402-409.
60. Raab K. Mindfulness, self-compassion, and empathy among health care professionals: a review of the literature. *J Health Care Chaplain*. 2014;20(3):95-108.
61. Wollenburg K. Leadership with conscience, compassion, and commitment. *Am J Health Syst Pharm*. 2004;61:1785-1791.
62. Kret DD. The qualities of a compassionate nurse according to the perceptions of medical-surgical patients. *Medsurg Nurs*. 2011;20: 29-36.
63. Lamothe M, Rondeau É, Malboeuf-Hurtubise C, Duval M, Sultan S. Outcomes of MBSR or MBSR-based interventions in health care providers: a systematic review with a focus on empathy and emotional competencies. *Complement Ther Med*. 2016;24:19-28. doi:10.1016/j.ctim.2015.11.001.