



Is there a Theory – Practice – Ethics gap? A Patient Safety Case Study

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ABSTRACT

This exposé employs a case study to illuminate an ongoing medical dilemma which places a patient's safety at risk. The medical dilemma is one of non-compliance by healthcare professionals and is associated with correct patient identification. Typically, the healthcare academics declare that when clinical practice is inadequate, a "theory-practice gap" is usually responsible. Within this paradigm there is often a gap between theoretical knowledge and its application in practice. Most of the evidence relating to the non-integration of theory and practice makes the assumption that environmental factors are responsible and will affect learning and practice outcomes, hence the "gap". However, it is the author's belief, that to "bridge the gap" between theory and practice an additional component must be considered, called "Ethics". In order to effectively implement practices, such as identifying a patient correctly, the user must deem these practices to be important and relevant to provide safe patient care in their role as healthcare providers. This introduces a new concept which the author refers to as the "theory-practice-ethics gap" and must be considered when reviewing some of the unacceptable outcomes in healthcare practice, such as wrong patient identification.

1. Introduction

The purpose of this exposé is to elicit consideration by healthcare professionals of the possibility of a new paradigm which the author has termed the "theory-practice-ethics gap". The article employs a case study to demonstrate this new paradigm; which is tentatively deemed to be a patient advocacy and patient safety concern (Mortell, 2009, 2012, 2013). The case study that will be reviewed to exhibit this suggested paradigm; involves an authentic patient with coronary artery disease [CAD]; who required an urgent surgical intervention in the form of coronary artery bypass graft surgery [CABGS]. The dilemma which will be reviewed illustrates a situation that placed a patient at risk. It focuses on the fact that health-care professionals are provided with knowledge; organizational policies and procedures [Theory], and are also required to demonstrate competence and organizational compliance [Practice]. Yet, healthcare professionals and providers continue to sponsor an attitude of non-compliance or unethical practices which create medical errors and place the patients' safety at risk (Dixon-Woods, Baker, Charles, et al., 2014; Leape, 1994, 2002, 2015).

2. Background

Patient safety and high quality of care are essential aspects of all healthcare practices. When people are admitted to hospital, they expect to have their illness or disease treated effectively, and to receive safe,

high quality care. They do not expect to be put at risk or be harmed. The primary goal of healthcare is to maximize safety and wellbeing, and so optimize the quality of people's lives (Wilson, 2009; Leape, 1994, 2002, 2015). The Institute of Medicine's [IOM] report 'To Err Is Human: Building a Safer Health System' stated that 98,000 deaths occurred annually in the United States of America [USA] as a result of medical errors (IOM, 2000). Not unique to the USA, European nations also have concerns associated with ongoing medical errors which place patients at risk (Fowler et al., 2008; Classen et al., 2011; Hinno, Partanen, & Vehviläinen-Julkunen, 2011). In the United Kingdom as many as 10% of hospitalized patients may experience a medical error and some may experience multiple errors (Sari et al., 2007). A subsequent study from the USA declared that, 400,000 medical errors and 210,000 deaths were associated with preventable harm in hospitals (James, 2013). A more recent study, estimated that medical errors in England were a contributory factor to approximately 22,000 deaths a year (Wise, 2018).

The IOM report (2000) generated questions about patient safety and an obligation for healthcare providers to deliver high quality, safe healthcare (IOM, 2001, 2012). Over the last 18 years, this commitment has been a strategy and policy target for healthcare organizations around the world. The Joint Commission International (JCI) is one such organization that labors to improve patient safety and quality of health care in the international community. In 2003, the JCI designated accurate patient identification as a National Patient Safety Goal. Each

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year, they publish patient safety goals which assist organizations with standards to improve patient safety (Sammer, 2010; JCI, 2010, 2003, 2015). However, despite the awareness which was created by the IOM report and strategies by organizations such as JCI; patients continue to experience preventable harm and substandard care (Leape, 2015; Dixon-Woods, Baker, Charles, et al., 2014). Alarming, Makary & Daniel (2016), concurred that the medical errors remained prevalent and are considered the third leading cause of death in the USA, after heart disease and cancer.

One of the JCI patient safety goals [Number 1] is too “Identify the patient correctly” (JCI, 2010), and healthcare professionals are repetitively informed about the importance of correct patient identification, with instruction and competence assessments (Okuyama, Martowirono, & Bijnen, 2011). However, despite being provided with instruction [theory] and competence assessments [practice] the medical errors associated with patient identification continue to be commonplace in the healthcare setting (Emergency Care Research Institute, ECRI, 2013, 2015, 2016).

The ECRI reviewed more than 7613 medical errors reported between 2013 and 2015, submitted by 181 healthcare organizations. A majority of 91.4 percent of errors that had the potential to place the patient at risk were discovered before any harm had occurred. In one event, the ECRI report stated that the wrong patient record was accessed, to give another patient clearance for surgery (ECRI, 2016). Approximately 15 percent of the medical errors involved physically identifying the patient, while another 15 percent of events were linked to technological identification errors (ECRI, 2013, 2015, 2016).

In the context of medical errors, the theory-practice gap is often cited as the offending perpetrator (Essani & Ali, 2011; Mahmoud, 2014). Practices which are based on convention, and outdated information are placed in a nonscientific paradigm called the theory-practice gap (Allmark, 1995; Hewison, & Wildman, 1996). Within this paradigm there is often a gap between theoretical knowledge and its application in practice. Most of the evidence associated with the non-integration of theory and practice has the notion that environmental factors are accountable and will affect learning and practice outcomes, hence the “Gap” (Wilson, 2008; Ajani & Moez, 2011; Scully, 2011).

In fact, it is the author's belief, that to “bridge the gap” between “Theory and Practice” an additional factor called “Ethics” is required, and must be considered. [Fig. 1]

Ethics is a moral duty and obligation (Lindsay, 2012; Stern, 2012), and in order to effectively implement new practices, this must be considered when reviewing some of the unacceptable outcomes in

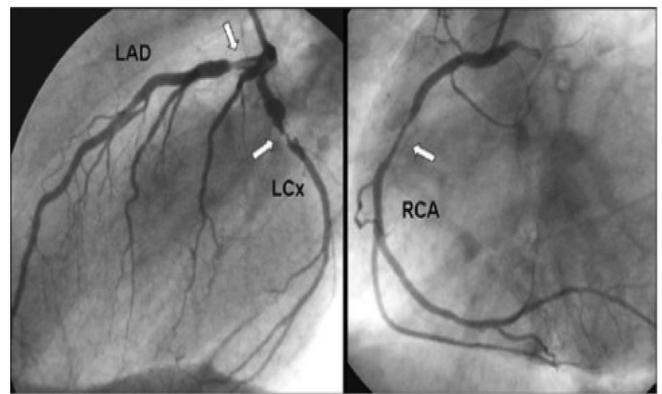


Fig. 2. The obstructed left and right coronary artery sites.

health care practice, (Saver et al., 2015). One such unacceptable practice is incorrect identification of a patient.

In the context of medical errors with patient identification, the theory-practice-ethics gap is a new paradigm to consider (Mortell, 2009, 2012, 2013).

3. Case study

A 48-year-old male patient was referred from a Middle Eastern hospital cardiology clinic to the cardiac surgical clinic with refractory angina pectoris due to CAD, associated with Congestive Heart Failure [CCF]. Subsequent investigations confirmed triple vessel coronary artery disease, which would require open chest surgery and CABGS. The obstructive pathophysiology involved the left anterior descending artery 90%; Left circumflex artery 100%, and right coronary artery 90%. Fig. 2 displaying triple vessel disease with coronary angiogram fluoroscopy.

The unstable angina despite maximal medical management had become progressively worse over a period of 6 months. The patient's 12 lead electrocardiograph [ECG], demonstrated widespread non ST segment elevation myocardial ischemia [NSTEMI] (Fig. 3).

On clinical examination, he was anxious, had a pulse rate of 110 beats per minute; a blood pressure [BP] 130/80 mmHg; Shortness of breath with a respiratory rate of 28 breaths per minute; a SpO2 of 92% on room air. Audible crackles on auscultation throughout bilateral lung fields. Chest x-ray confirmed cardiomegaly, CCF with interstitial edema [Fig. 4]. His angina pectoris was stated to be a constant ache, substernal in location, with a degree of left arm numbness and “pain” with a numerical value of 5 to 10/10 depending on his physical activity or psychological demands.

The patient was to have CABGS as a definitive intervention to circumvent his coronary lesions. On the day of the scheduled surgery, a patient was collected from the cardiology ward and transferred to the operating room. The following pre-operative procedures and insertions were performed in the anesthetic department:

- IV Sedation administered in preparation for a general anesthetic
- Two peripheral 18 gauge intravenous cannulas [PIV]
- A triple lumen central venous catheter [CVC] into the left jugular vein
- A pulmonary artery catheter [PAC] into the right jugular vein
- A right radial arterial catheter for BP monitoring and blood sampling
- An indwelling urinary catheter with core temperature sensing
- A oral-gastric tube [OGT]
- An oral tracheal tube [ETT]
- Preparation for cardio-pulmonary bypass
- Continuous ECG monitoring
- Continuous pulse-oximetry

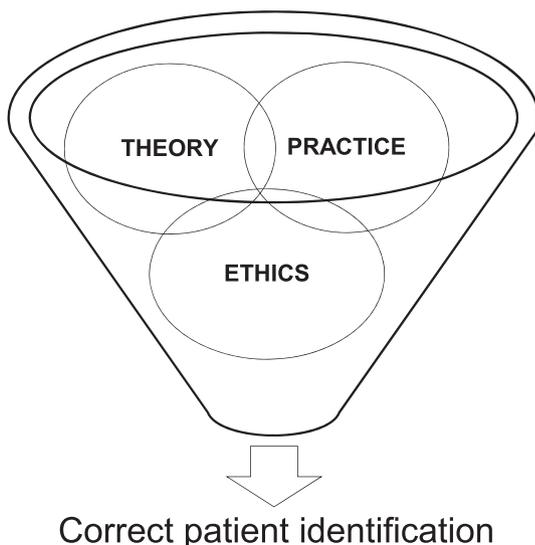


Fig. 1. A theory, practice and ethics model for positive clinical outcomes.

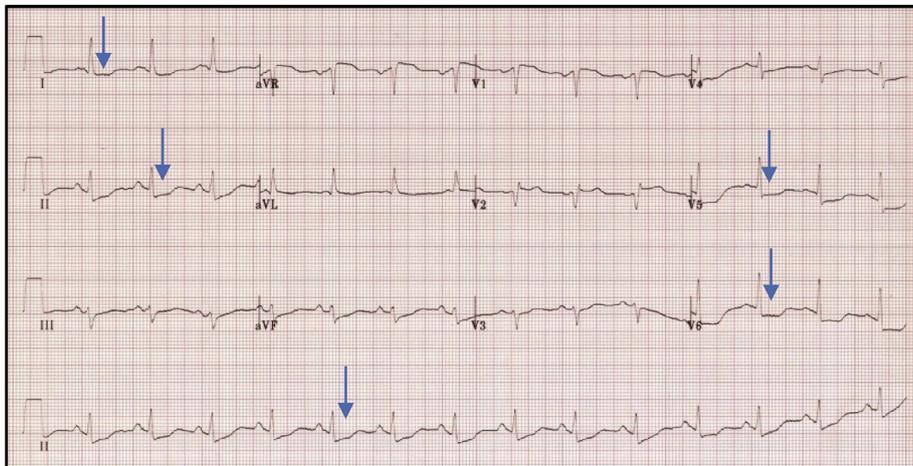


Fig. 3. 12 Lead ECG revealing an extensive NSTEMI.

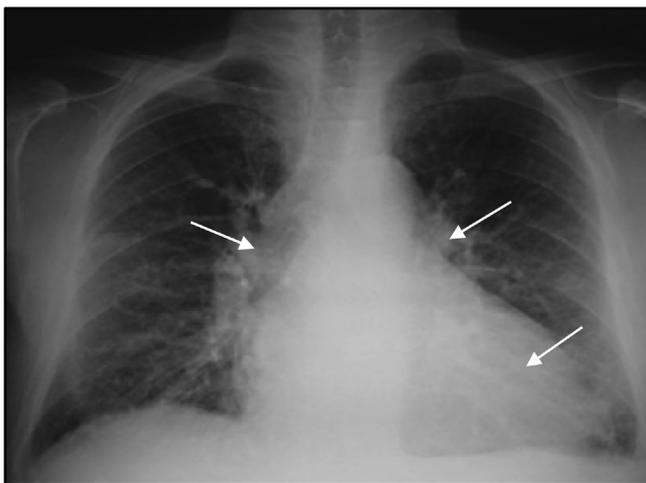


Fig. 4. CXR revealing CCF and interstitial pulmonary edema.

- Continuous end-tidal carbon-dioxide monitoring

Before commencing the surgery, the 4th and final patient verification “TIME OUT”, was performed according to hospital policy and the Joint Commission International’s patient safety goal [Number 4]. “Ensure right site; right patient; right procedure–surgery” (JCI, 2010). This was done in the presence of the consultant surgeon, who with disbelief stated that this was the wrong patient and that this patient was not for the scheduled surgical procedure of CABGS. Thank God, the surgery was subsequently cancelled and the patient was returned to the Intensive Care Unit [ICU] to recuperate.

4. Discussion

As a professional healthcare provider identifying a patient correctly prior to any procedure is an unchanging responsibility, whether the procedure is minor or major. Typically, before any medical procedure, the patient’s full name and medical record number (MRN) must be verified for accuracy. Correct identification of a patient is a standard healthcare practice, which ensures patient safety and prevents potential harm (JCI, 2010). There are no routine medical procedures in healthcare, every intervention could place the patient at risk and in harms way.

This case study involved a patient who was incorrectly identified and taken to the operating room for cardiac surgery, a major procedure. This surgery would involve opening the chest cavity, commencing

cardiopulmonary bypass, harvesting the saphenous vein and radial arteries for CABGs and numerous other invasive interventions previously mentioned. Employing; the Joint Commission International’s patient safety goal; “Ensure right site; right patient; right procedure–surgery” (JCI, 2010) or the equivalent depending on the organization’s policy (ECRI, 2016). All patients must be afforded a safe systematic organizational process to be identified correctly before any procedure. Correct patient identification is a practice which all healthcare providers, have been informed and instructed on, with subsequent compliance being validated. The patient in this case study went through four stages of an organizational system of verification which was intended to identify them correctly before the procedure. However, he was the wrong patient and was only identified by the consultant surgeon on the fourth and final verification before the surgery.

Whatever you want to call them, medical errors, faults, slips, non-compliance, ethics, they all abandoned the organizational policy and procedure which would ensure patient safety. These failures occurred at multiple trust levels, which included the ward nurse, the anesthetic team, and the surgical team [Fig. 5]. This potentially fatal near miss was only recognized by the consultant surgeon at “Time out” with the patient on the operation table. In an idyllic world, healthcare would happen in a highly reliable system where no one is hurt and everyone gets the care they need. But, in reality, patients continue to be harmed with the experts opting out by stating that “we’re all human” and, of course, to “Err is Human” (Fowler et al., 2008; Classen et al., 2011; Hinno et al., 2011; James, 2013; Wise, 2018). The *Swiss cheese model* [Reason, 1990] compares human systems to layered slices of Swiss cheese, which are stacked side by side. In the *Swiss cheese model*, an organization’s defenses against failure are modeled as a series of barriers, represented as slices of cheese. The holes in the slices represent weaknesses in individual parts of the system and are continually varying in size and position across the slices. The system produces failures when a hole in each slice momentarily aligns, permitting “a trajectory of accident opportunity”, so that a hazard passes through holes in all of the slices, leading to a failure (Stranks, 2007). Although the *Swiss cheese model* is respected and considered to be a useful method of relating concepts (Reason, 1990, 1995, 2000), it has been subject to criticism that it is used too broadly [Euro-control, 2006].

This case study illustrates how medical errors will continue within the *Swiss cheese model* despite having a precise system in place [Fig. 5]. The case study also demonstrates that there is a ‘theory-practice-ethics gap’, when healthcare providers, are ratified by their profession and prepared by their employing organization to provide ethical care which has been fortified with the relevant theory and practice (Mortell, 2009, 2012, 2013).

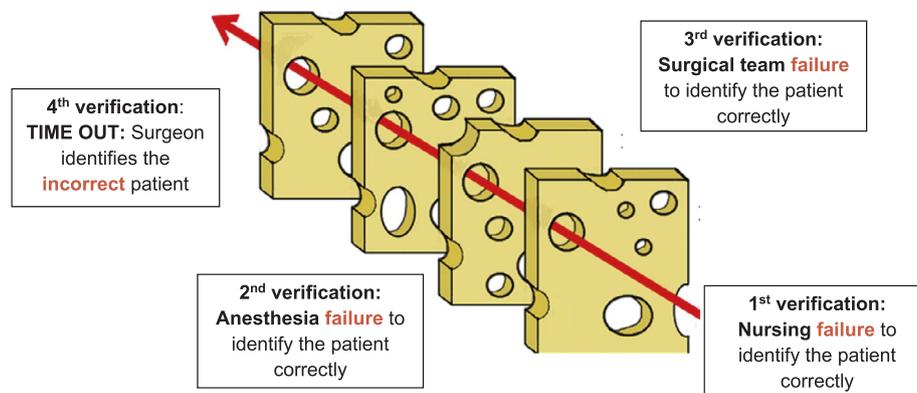


Fig. 5. The Swiss cheese model [Reason, 1990] applied to this case study.

5. Conclusion

This case study focused on two issues which relate to patient safety, the first was an ongoing medical dilemma, which involved correct patient identification. The second, an issue which revealed a potential conflict of professional ethics within a new paradigm called the *theory-practice-ethics gap*. (Mortell, 2009, 2012, 2013). This paradigm, acknowledges that all healthcare professionals are provided with theoretical knowledge and practical skills to practice competently and safely, yet continue to be ethically non-compliant for correct procedure. Non-compliance to the authorized organizational policy and procedure for clinical practice creates an ethical dilemma. Without adherence to organizational policy to identify the patient correctly [full name and MRN] by the healthcare professionals involved, the operative consequences and complications for this patient may have been serious. It also serves as a prudent reminder that everything we do to or for the patient has potential complications associated with it. Ultimately the goal of all professional healthcare providers is to provide safe, evidence-based quality care because all patients regardless of their religion, race, culture, age or gender are entitled to safe, quality care. Health care dynamics are complex and involve care processes which include sophisticated technologies and therapeutic interventions. With an enlarging global population and longer life expectancy, the frequent occurrences of medical errors, such as incorrect patient identification remain as a patient safety issue. Endeavors must be made to encourage healthcare professional ethics and have them reflect on their moral duty, to provide safe, quality patient care within health care organizations. Only by creating a culture of ethical care can we hope to decrease a potential ‘theory-practice-ethics gap’. (Mortell, 2009, 2012, 2013).

Author’s note

For this type of case study, formal consent was not required, as it does not identify the organization or individuals involved.

Declaration of interests

The author declared no potential conflicts of interest with respect to authorship, and/or publication of this article.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ijans.2018.12.002>.

References

Allmark, P. (1995). A classical view of the theory-practice gap in nursing. *JAN*, 22(1),

- 18–23. <https://doi.org/10.1046/j.1365-2648.1995.22010018.x>.
- Ajani, K., & Moez, S. (2011). Gap between knowledge and practice in nursing. *Procedia Social and Behavioral Sciences*, 15, 3927–3931. <https://doi.org/10.1016/j.sbspro.2011.04.396>.
- Classen, D. C., Resar, R., Griffin, F., Federico, F., Frankel, T., Kimmel, N., Whittington, J. C., Frankel, A., Seger, A., & James, B. C. (2011). ‘Global trigger tool’ shows that adverse events in hospitals may be ten times greater than previously measured. *Health Affairs Millwood*, 30(4), 581–589. <https://doi.org/10.1377/hlthaff.2011.0190>.
- Dixon-Woods, M., Baker, R., Charles, K., et al. (2014). Culture and Behavior in the English National Health Service: Overview of lessons from a large multi-method study. *BMJ Qual Saf*, 23, 106–115. <https://doi.org/10.1136/bmjqs-2013-001947>.
- Essani, R. R., & Ali, T. S. (2011). Knowledge and Practice Gaps among Pediatric Nurses at a Tertiary Care Hospital Karachi, Pakistan. *ISRN Pediatrics*. <https://doi.org/10.5402/2011/460818>.
- Euro control (2006) Revisiting the Swiss Cheese Model of Accidents, Euro control. October 2006. Accessed, June 18, 2018.
- ECRI (2016) Patient identification errors report, Emergency Care Research Institute June 2016, Accessed, June 18, 2018.
- ECRI (2015) Partnership for Health IT Patient Safety. <https://www.ecri.org/resource-center/Pages/HITPartnership.aspx>. Accessed, June 18, 2018.
- ECRI (2013) Healthcare risk, quality, and safety guidance: clinical alarms. <https://www.ecri.org/components/HRC/Pages/CritCare5.aspx>. Accessed, June 18, 2018.
- Fowler, F., Epstein, A., Weingart, S., Annas, C., Bolcic-Jankovic, D., Clarridge, B., et al. (2008). Adverse events during hospitalization: Results of a patient survey. *Joint Commission Journal of Quality & Patient Safety*, 34(10), 583–590.
- Hinno, S., Partanen, P., & Vehviläinen-Julkunen, K. (2011). Hospital nurses’ work environment, quality of care provided and career plans. *International Nursing Review*, 58(2), 255–262. <https://doi.org/10.1111/j.1466-7657.2010.00851.x>.
- Hewison, A., & Wildman, S. (1996). The theory-practice gap in nursing: a new dimension. *Journal of Advanced Nursing*, 24(4), 754–761 Accessed, June 18, 2018.
- Institute of Medicine (IOM) (2000). *To Err Is Human: Building a Safer Health System*. Washington DC: National Academy Press.
- Institute of Medicine (IOM) (2001). *Crossing the Quality Chasm: A New Health System for the 21st Century*. Washington, DC: National Academy Press.
- Institute of Medicine (IOM) (2012). *Health IT and Patient Safety: Building Safer Systems for Better Care*. Washington, DC: National Academies Press.
- James, J. T. (2013). A new, evidence-based estimate of patient harms associated with hospital care. *Journal of Patient Safety*, 9(3), 122–128. <https://doi.org/10.1097/PTS.0b013e3182948a69>.
- JCI (2003) The Joint Commission patient safety, <http://www.jointcommission.org/patient-safety>. Accessed, June 20, 2018.
- JCI (2010) National patient safety goals. The joint Commission, retrieved from <http://www.jointcommission.org/patient-safety/national-patient-safety-goals/Nov-3-2010>. Accessed, June 20, 2018.
- JCI (2015) Joint Commission improving patient and worker safety <http://www.jointcommission.org/assets/1/18/TJCIImprovingPatientAndWorkerSafety-Monograph.pdf>. Accessed, June 20, 2018.
- Leape, L. L. (1994). Error in medicine. *JAMA*, 272, 1851–1857. <https://doi.org/10.1001/jama.1994.03520230061039>.
- Leape, L. L. (2002). Reporting of adverse events. *New England Journal of Medicine*, 347, 1633–1638.
- Leape, L. L. (2015). Hospital readmissions following surgery turning complications into treasures. *Journal of the American Medical Association*, 313(5), 467–468. <https://doi.org/10.1001/jama.2014.18614.3>.
- Linsley, A. C. (2012). Moral Obligation. *Ethics Forum: Moral Obligation college-ethics.blogspot.com/2012/05/moral-obligation.htm*.
- Mahmoud, M. H. (2014). Practical learning and theory practice gap as perceived by nursing students. *International Journal of Current Research*, 6(2), 5083–5093. Accessed, May 10, 2018 <http://www.journalcra.com>.
- Makary, M., & Daniel, M. (2016). Medical error—the third leading cause of death in the US. *BMJ*, 353–358. <https://doi.org/10.1136/bmj.i2139>.
- Mortell, M. (2009). a Resuscitation Dilemma - Theory Practice Ethics. Is there a theory practice ethics gap? *Journal of the Saudi Heart Association*, 21(1), 149–152. <https://doi.org/10.1016/j.jsha.2009.06.002>.

- Mortell, M. (2012). Theory Practice Ethics. Is there a theory practice ethics gap? *BJN*, (2) 1, 149–152. <https://doi.org/10.12968/bjon.2012.21.17.1011>.
- Mortell, M. (2013). Theory Practice Ethics. Is there a theory practice ethics gap? *Journal of the Saudi Heart Association*, 25(3), 203–208. <https://doi.org/10.1016/j.jsha.2013.04.003>.
- Okuyama, A., Martowirono, K., & Bijnen, B. (2011). Assessing the patient safety competencies of healthcare professionals: A systematic review. *BMJ Qual. Saf.* 20(11), 991–1000. <https://doi.org/10.1136/bmjqs-2011-000148>.
- Reason, J. (1990) *Human Error*. Cambridge University Press, UK. IOM. Committee on identifying and preventing medication errors, Washington, Dc: The National Academic Press 2006.
- Reason, J. (1995). A System Approach to Organizational Error. *Ergonomics*, 38, 1708–1721. <https://doi.org/10.1080/00140139508925221>.
- Reason, J. (2000). Human error: Models and management. *British Medical Journal*, 320(7237), 768–770. <https://doi.org/10.1136/bmj.320.7237.768>.
- Sammer, C. E., Lykens, K., Singh, K. P., Mains, D. A., & Lackan, N. A. (2010). What is a patient safety culture: A review of the literature. *Journal of Nursing Scholarship*, 42, 156–165. <https://doi.org/10.1111/j.1547-5069.2009.01330.x>.
- Sari, A., Sheldon, T., Cracknell, A., Turnbull, A., Dobson, Y., & Grant, C. (2007). Extent, nature and consequences of adverse events: Results of a retrospective case note review in a large NHS hospital. *Qual Saf Health Care*, 16(6), 434–439. <https://doi.org/10.1136/qshc.2006.021154>.
- Saver, B. S., Martin, S. A., Adler, R. A., Candib, L. M., Deligiannidis, K., Golding, J., et al. (2015). Care that Matters: Quality Measurement and Health Care. *PLoS Medicine*, 12(11), e1001902.
- Scully, N. J. (2011). The theory-practice gap and skill acquisition: An issue for nursing education. *Collegian*, 18(2), 93–98. <https://doi.org/10.1016/j.colegn.2010.04.002>.
- Stern, R. (2012). *Understanding Moral Obligation: Kant, Hegel, Kierkegaard*, Cambridge University Press, 2012, 277, ISBN 9781107012073.
- Stranks, J. (2007). *Human Factors and Behavioral Safety*. Butterworth-Heinemann. pp. 130–131. ISBN 9780750681551.
- Wilson, J. (2008). Bridging the theory practice gap. *Australian Nursing Journal*, 16(4), 25–26. https://researchonline.nd.edu.au/nursing_article/5/.
- Wilson, V. (2009). *Introduction to nursing, midwifery and person-centred care*. In J. Dempsey, J. French, S. Hillege, & V. Wilson (Eds.). *Fundamentals of Nursing & Midwifery: a person-centred approach to care*. Philadelphia: Lippincott.
- Wise, J. (2018). *BMJ*, 2018, 360. <https://doi.org/10.1136/bmj.k903> Cite this as: *BMJ* 2018; 360:k903.