

RECOGNIZING AND ENHANCING HEALTHCARE SETTINGS' PRESENT RISK MANAGEMENT PROCEDURES

Talal Suliman Alsuwairi, Khalid Ahmed Alamri, Abdullah Oudah Alahmari, Abdulaziz Fayeze Al mared, Adel Abdullah Alshehri, Turki Mohammed Alasmari, Rami A'aydh Albugami, Saeed Mohammad Saeed Alasmari. Abdulrahman Mohammed Binyabis, Fahad Mohammed binyabes, Sara Saad Albadah, Nouraldin ahmed mohammed nabrawi, Hamad Hussain Alyami, Saeed Saad Alasmari, Abdullah Hajras Alotaibi, Saad Salem Mohsan Alasmari

*Corresponding Author: Talal Suliman Alsuwairi
Ministry of Health, Saudi Arabia*

Abstract

In the medical field, a lot of people experience negative outcomes. Hospitals have used risk management to guarantee patient safety. Nonetheless, there is still much space for improvement in the way risk management is now done. Therefore, the goal of this study is to gain a better understanding of risk management procedures in hospital settings and to offer suggestions for their improvement. Risk management literature was examined in order to appreciate and enhance present risk management applications, while a questionnaire survey was developed to learn more about them. The results indicate that while only a small percentage of practitioners and managers concur with the ISO definition of risk, more than 70% view risk management as defining dangers to patients. Moreover, almost 50% of managers and practitioners concur that risk assessment is more crucial than risk mitigation. Participants mostly employed risk matrix approaches, brainstorming, and Failure Mode and Effect Analysis (FMEA) to manage risks. Emphasizing safety culture, staff involvement, safety training, risk reporting systems, and risk management tools could progress risk management practices, according to the questionnaire's results and the literature study.

Keywords: risk management, patient safety, and healthcare.

1. Introduction

The healthcare system is intricate and evolving. Moreover, healthcare personnel experience significant stress. Therefore, ensuring patient safety is difficult (Jun, Ward, & Clarkson, 2010). P. J. Clarkson et al. (2004) estimate that the UK healthcare system encounters 850,000 medical errors per year, leading to 400 fatalities or severe injuries (Donaldson, 2002). Furthermore, it is estimated that more than one million patients in the United States (Kohn, Corrigan, & Donaldson, 2000; Starfield, 2000) and around 42,500 individuals in England and Wales encounter harmful effects each year (Smith, 2007). Furthermore, a study indicates that identical patient safety problems exist globally, not alone in the US and the UK (P. J. Clarkson et al., 2004).

Since the publication of the Institute of Medicine study in 2000, healthcare firms have been pushed to improve their risk management protocols, cultivate a safety culture, and derive lessons from errors (Cagliano, Grimaldi, & Rafele, 2011; Sokol & Neerukonda, 2013). Healthcare organizations have adopted engineering methodologies from safety-focused enterprises (P John Clarkson et al., 2004). Risk management is an engineering application employed by the healthcare sector to ensure patient safety. Initially, risk management in the United States healthcare insurance sector concentrated on financial issues; however, this focus has evolved to encompass safety and quality considerations (Dückers et al., 2009; Youngberg, 2011).

In hospital environments, risk management has been implemented only to a limited extent due to constraints on resources. Researchers have identified deficiencies in risk management systems, namely in risk mitigation (Simsekler, Card, Ruggeri, Ward, & Clarkson, 2015) and risk identification (Simsekler, Card, Ward, & Clarkson, 2015; Simsekler, Card, Ruggeri, Ward, & Clarkson, 2015). Simsekler, Ward, Clark, Card, and Clarkson (2014). Nonetheless, there is insufficient data concerning the actual execution of risk management and variations in understanding. This study seeks to comprehend the viewpoints of managers and practitioners and their ramifications, while also identifying potential areas for enhancement in current risk management methodologies.

2. Method

This research employed a questionnaire and analyzed risk management literature to enhance comprehension of practical and theoretical applications. The questionnaire aimed to evaluate the comprehension of risk management applications among practitioners and managers. The questionnaire was created to be concise to address time limitations in healthcare. The questionnaire of 10 multiple-choice questions (Refer to appendix 1 for the questionnaire template). An electronic questionnaire was developed using an online survey tool, and the survey link was subsequently sent through LinkedIn groups, including those for doctors, managers, risk managers, and patient safety professionals. The questionnaire was also conducted in person at a hospital. Data was collected through online means (170 responses) and in-person interactions (20 responses). Results were obtained from multiple countries, including the United States (68), the United Kingdom (42), and additional nations (80). The gathered data was further categorized according to the respondents' positions to examine variations in attitudes between managers and practitioners. Ultimately, data was examined to enhance the understanding and efficacy of existing risk management strategies.

3. Results

The subsequent sections of this report elucidate the results of the questionnaire. The findings are categorized into three segments: comprehension of risk and risk management, risk management strategy, and utilization of risk management tools.

Risk comprehension and risk management

Figures 1a and 1b illustrate participants' replies to inquiries regarding risk and risk management. Sixty-four percent of practitioners concurred (strongly agree and agree) with the ISO 31000 definition of risk as "the effect of uncertainty on objectives," while seventy-three percent acknowledged that risk management pertains to recognizing potential dangers to patients (refer to figure 1b). While practitioners acknowledged a broader comprehension of risk as delineated by ISO, a greater number concurred on a particular emphasis: "risk management pertains to identifying potential threats to patients." Managers exhibited a uniform perception, with 71 percent concurring with the ISO definition and 78 percent aligning with the idea of risk management. Data analysis revealed a difference between the results from the US and the UK based on respondent geography. UK practitioners unanimously concurred with UK managers regarding the definition of risk management, achieving an agreement rate of 100 percent (78 percent). Nevertheless, the trend in the United States mirrored the overall results. Managers concurred with the proposition more than practitioners, with 95 percent versus 65 percent.

Understanding of risk and risk management

Figures 1a and 1b illustrate participants' replies to inquiries regarding risk and risk management. Sixty-four percent of practitioners concurred (strongly agree and agree) with the ISO 31000 definition of risk as "the effect of uncertainty on objectives," while seventy-three percent acknowledged that risk management pertains to recognizing potential dangers to patients (refer to figure 1b). While practitioners acknowledged a broader comprehension of risk as delineated by ISO, a greater number concurred on a particular emphasis: "risk management pertains to identifying potential threats to patients." Managers exhibited a uniform perception, with 71 percent concurring with the ISO definition and 78 percent aligning with the idea of risk management. Data analysis revealed a difference between the results from the US and the UK based on respondent geography. UK practitioners unanimously concurred with UK managers over the definition of risk management (78 percent). Nonetheless, the trend in the United States mirrored the overall results. Managers concurred with the proposition more than practitioners, with 95 percent versus 65 percent. **‘Risk is the effect of uncertainty on objectives’**

‘Risk management identifies possible threats to patients’

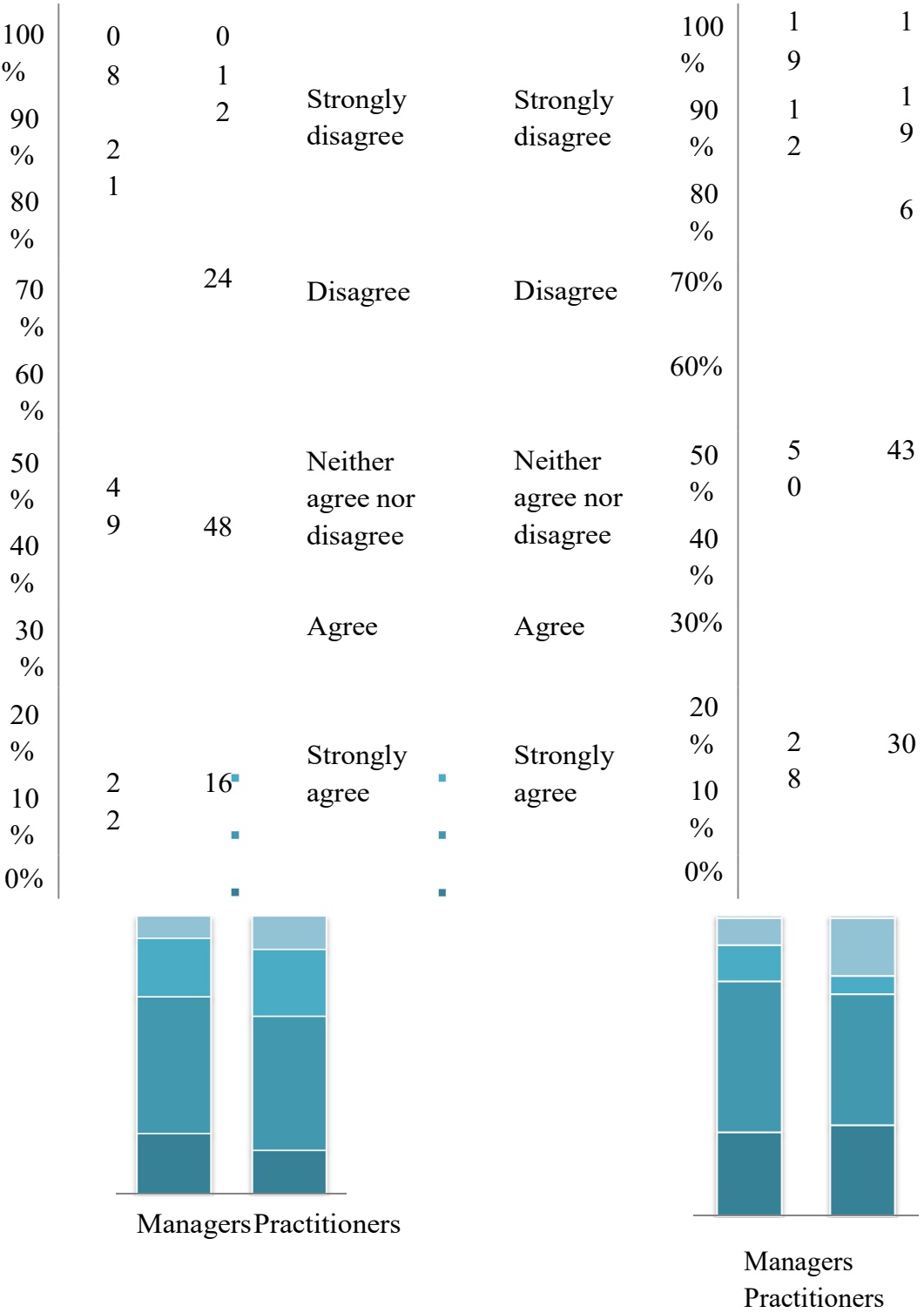


Figure 1a: Risk definition definition

Figure 1b Risk management

Risk management strategy

The question posed was, "To what extent do you concur that risk assessment holds greater significance than risk mitigation?" to understand the priorities of responders. Forty-seven percent of practitioners regarded risk assessment as more significant than risk mitigation, while forty-four percent of managers concurred. While the prioritization of these elements is contentious, risk management is more likely to mitigate risks. When data were analyzed by location, comparable responses emerged from many countries, except for UK managers and practitioners who exhibited a little higher level of agreement. Figure 2 below illustrates the general replies to the provided statement.

**‘Risk assessment is more
important than
risk mitigation’**

- Strongly disagree
- Disagree
- Neither agree nor disagree
- Agree
- Strongly agree

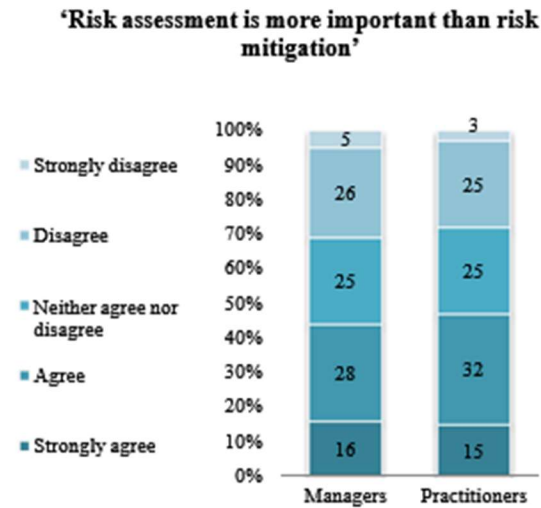


Figure 2 Risk management strategy

Managers Practitioners

Figure 2 Risk management strategy

Use of the risk management techniques

Participants were inquired about the approaches they employ for risk management applications in this study. The data indicate that the predominant tool utilized was Failure Mode Effect Analysis (FMEA). The risk matrix and brainstorming were subsequently employed (refer to figure 3). The data indicated that practitioners hardly utilize tools, except for brainstorming and what-if procedures. It is important to recognize that employing numerous tools does not ensure success. This does not necessarily indicate effective risk management practices. Risk management tools should be employed solely when indispensable.

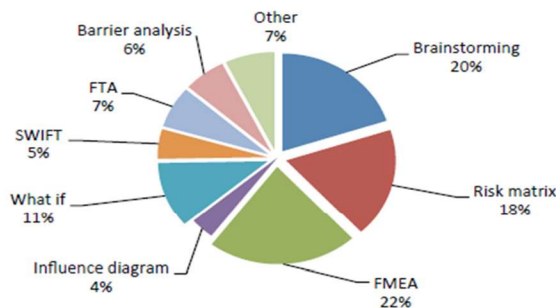


Figure 3 Risk assessment techniques used by respondents

1. Discussion

Managers and practitioners possessed somewhat divergent general perceptions of risk and risk management. Moreover, it was shown that healthcare personnel emphasize risk assessment rather than risk mitigation. This may result from external authorities promoting risk assessment. Consequently, healthcare personnel may have cultivated a collective comprehension of the number of risks evaluated, facilitating significantly improved risk management. The optimal risk assessment aims to mitigate risks. Effective risk management strategies necessitate a balance between these two elements. It is unsurprising that managers are more inclined than practitioners to employ risk management strategies, suggesting that front-line personnel are not entirely involved in risk management activities. FMEA is the predominant technique among these tools. This phenomenon can be elucidated by the Department of Veterans Affairs' formulation of Healthcare Failure Mode and Effect Analysis (HFMEA) (DeRosier, Stalhandske, Bagian, & Nudell, 2002) and the extensive array of publications present in the literature (Lu, Teng, Zhou, Wen, & Bi, 2013; Manger, Paxton, Pawlicki, & Kim, 2015; Perks, Stanic, Stern, & et al., 2012; Shebl, Franklin, & Barber, 2012). Analysis of results by respondent location reveals that UK respondents have distinct trends compared to respondents from other nations. Divergent outcomes among countries may be attributed to varying healthcare systems and various degrees of influence exerted by national authorities on healthcare institutions.

Recommendations for enhancing risk management practices encompass fostering a safety culture (Al-Assaf, Bumpus, Carter, & Dixon, 2003), promoting staff engagement in risk management activities (Khatri, Brown, & Hicks, 2009), delivering safety training (Mackert, Ball, & Lopez, 2011), and advocating for the utilization of risk management reporting systems and tools. Although safety culture is crucial for promoting the involvement of all healthcare personnel in risk management, the tendency to assign blame significantly hinders its implementation (P. J. Clarkson et al., 2004; Muralidhar, Taneja, & Ramesh, 2012). Healthcare professionals should not fear making errors, and colleagues ought to assist one another in rectifying these mistakes. This comprehension is prevalent in the aviation sector. Cabin staff commit many faults throughout flights, although any individual who identifies the mistake rectifies the issue (Firth-Cozens, 2001). Consequently, crew teams avert errors from escalating into disastrous incidents. Poor teamwork exacerbates errors, whereas effective teams mitigate errors by aiding and rectifying one another's mistakes (Lester & Tritter, 2001; Wiegmann, ElBardissi, Dearani, Daly, & Sundt, 2007).

Delivering safety training is a crucial element that can enhance risk management practices, especially for practitioners (Mackert et al., 2011). A study inquired of 40 practitioners whether they had undergone training in risk management or patient safety, and the findings indicated that none had (Arfanis & Smith, 2012).

All practitioners are mandated to document risks in their local risk register systems. Consequently,

healthcare organizations want to educate their personnel to enhance their involvement in risk management practices.

Moreover, to motivate healthcare businesses to deliver good training, authorities want to establish safety training regulations.

Incident or risk reporting systems can enhance existing practices (Barach & Small, 2000). Incident reporting serves as a fundamental source for delineating risk. Nevertheless, studies indicate that only 22-83 percent of occurrences are reported (Parkes, Pyer, Wray, & Taylor, 2014; Pietro, 2000). The significant disparity in projected incident reports indicates a problematic reporting culture.

Consequently, promoting effective reporting is essential for enhancing risk management practices by incorporating incident experiences into the risk management process. It is important to recognize that numerous inadequately reported incidents do not aid the risk management process. Both low and high rates of reporting present significant issues that require attention (Macrae, 2008). A more effective balance must be achieved between the reporting of excessive and insufficient risks to management. Numerous risk management tools exist to aid in incident prevention, risk mitigation, and safety assurance. This study found that practitioners exhibit a low tendency to utilize risk assessment tools. The lack of implementation can be attributed to factors such as healthcare staff time allocation, knowledge levels, and fears of exposure regarding mistakes (Carroll, 2009; Eidesen, Sollid, & Aven, 2009; Spedding & Rose, 2008). Another issue is that hospitals employ a standardized risk assessment tool across various risks and processes, which may prove inadequate at times. Healthcare organizations gain advantages from risk management tools by engaging staff across all levels in the appropriate application and selection of risk assessment techniques, such as FMEA, FTA, ETA, and HRA. This study has several limitations that should be acknowledged. Risk management practices exhibit variability across different countries. Hospital types and wards may exhibit differing levels of understanding regarding risk management. The effectiveness of identical risk management practices may be diminished. Additionally, questionnaires may be biased as respondents might prioritize providing accurate answers over disclosing their genuine experiences and knowledge. This study provides an overview of risk management practices by emphasizing general issues.

2. Conclusion

Risk management serves to enhance patient safety by mitigating adverse events; however, existing practices in this domain are inadequate. This study identifies several issues: varying perceptions of risk management, healthcare staff prioritizing risk assessment over risk mitigation, and a deficiency in the use of risk management tools, especially among practitioners. There exists considerable potential for enhancement in risk management practices. Suggested interventions

include safety culture enhancement, staff training, and appropriate utilization of risk management tools. Further research is necessary to implement the proposed interventions in a hospital environment.

References

- Al-Assaf, A. F., Bumpus, L. J., Carter, D., & Dixon, S. B. (2003). Preventing errors in healthcare: a call for action. *Hospital Topics*, 81(3), 5–12.
- Arfanis, K., & Smith, A. (2012). Informal risk assessment strategies in health care staff: an unrecognized source of resilience. *Journal of Evaluation in Clinical Practice*, 18, 1140–1146.
- Barach, P., & Small, S. (2000). Reporting and preventing medical mishaps: lessons from non-medical near miss reporting systems. *British Medical Journal*, 320(7237), 759–763.
- Cagliano, A. C., Grimaldi, S., & Rafele, C. (2011). A systemic methodology for risk management in healthcare sector. *Safety Science*, 49(5), 695–708.
- Card, A. J., Simsekler, M. C. E., Clark, M., Ward, J. R., & Clarkson, P. J. (2014). Use of the Generating Options for Active Risk Control (GO-ARC) Technique can lead to more robust risk control options. *The International Journal of Risk & Safety in Medicine*, 26(4), 199–211.
- Carroll, R. L. (2009). *Risk management handbook for health care organisations*. (R. Carroll, Ed.) (Student Ed). San Francisco: Jossey-Bass.
- Clarkson, P. J., Buckle, P., Coleman, R., Stubbs, D., Ward, J. R., Jarrett, J., ... Bound, J. (2004). Design for patient safety: a review of the effectiveness of design in the UK health service. In *7th Biennial Conference on Engineering Systems Design and Analysis*. Manchester: ESDA.
- DeRosier, J., Stalhandske, E., Bagian, J. P., & Nudell, T. (2002). Using health care failure mode and effect analysis: the VA National Center for patient safety's prospective risk analysis system. *The Joint Commission Journal on Quality Improvement*, 28(5), 248–267.
- Donaldson, L. (2002). An organisation with a memory. *Clinical Medicine*, 2, 452–457.
- Dückers, M., Faber, M., Cruijsberg, J., Grol, R., Schoonhoven, L., & Wensing, M. (2009). *Safety and risk management in hospitals*. London.
- Eidesen, K., Sollid, S. J. M., & Aven, T. (2009). Risk assessment in critical care medicine: a tool to assess patient safety. *Journal of Risk Research*, 12(3-4), 281–294.
- Firth-Cozens, J. (2001). Cultures for improving patient safety through learning: the role of teamwork. *Quality in Health Care*, 10((Suppl II)), ii26–i31.
- Jun, G. thomas, Ward, J., & Clarkson, P. J. (2010). Systems modelling approaches to the design of safe healthcare delivery: ease of use and usefulness perceived by healthcare workers. *Ergonomics*, 53, 829–847.

- Khatri, N., Brown, G., & Hicks, L. (2009). From a blame culture to a just culture in health care. *Health Care Management Review*, 34, 312–322.
- Kohn, L. T., Corrigan, J. M., & Donaldson, M. S. (2000). *To err is human*. Washington, DC: National Academy Press.
- Lester, H., & Tritter, J. Q. (2001). Medical error: A discussion of the medical construction of error and suggestions for reforms of medical education to decrease error. *Medical Education*, 35, 855–861.
- Lu, Y., Teng, F., Zhou, J., Wen, A., & Bi, Y. (2013). Failure mode and effect analysis in blood transfusion: a proactive tool to reduce risks. *Transfusion*, 53, 3080–3087.
- Mackert, M., Ball, J., & Lopez, N. (2011). Health literacy awareness training for healthcare workers: improving knowledge and intentions to use clear communication techniques. *Patient Education and Counseling*, 85(3), e225–e228.
- Macrae, C. (2008). Learning from patient safety incidents: creating participative risk regulation in healthcare. *Health, Risk & Society*, 10(1), 53–67.
- Manger, R. P., Paxton, A. B., Pawlicki, T., & Kim, G.-Y. (2015). Failure mode and effects analysis and fault tree analysis of surface image guided cranial radiosurgery. *Medical Physics*, 42(5), 2449–2461.
- Muralidhar, S., Taneja, A., & Ramesh, V. (2012). Patient safety culture-perception of health care workers in a tertiary care hospital. *The International Journal of Risk & Safety in Medicine*, 24, 191–9.
- Parkes, J. H., Pyer, M., Wray, P., & Taylor, J. (2014). Partners in projects: preparing for public involvement in health and social care research. *Health Policy*, 117(3), 399–408.
- Perks, J., Stanic, S., Stern, R., & et al. (2012). Failure mode and effect analysis for delivery of lung stereotactic body radiation therapy. *International Journal of Radiation Oncology Biology Physics*, 83(4), 1324–1329.
- Pietro, D. A. (2000). Detecting and reporting medical errors: why the dilemma? *BMJ*, 320, 794–796.
- Shebl, N., Franklin, B., & Barber, N. (2012). Failure mode and effect analysis outputs: are they valid? *BMC Health Service Research*, 12, 150–159.
- Simsekler, M. C. E., Card, A. J., Ward, J. R., & Clarkson, P. J. (2015). Trust-Level Risk Identification Guidance in the NHS East of England. *The International Journal of Risk & Safety in Medicine*, 27(2), 67–76.
- Simsekler, M. C. E., Card, A. J., Ruggeri, K., Ward, J. R., & Clarkson, P. J. (2015). A comparison of the methods used to support risk identification for patient safety in one UK NHS foundation trust. *Clinical Risk*, 21(2-3), 37–46.
- Smith, I. (2007). *Building a World Class NHS*. New York: Palgrave Macmillan.
- Sokol, P. E., & Neerukonda, K. V. (2013). Safety risks in the ambulatory setting. *American Society for Healthcare Risk Management*, 32(3), 21–25.
- Spedding, L., & Rose, A. (2008). *Business risk management handbook*. Oxford: CIMA.

Position in the hospital/ country:

To what extent do you agree with the following statements:

1) Risk is the effect of uncertainty on objectives

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

2) Risk management is about identifying possible threats to patients

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

3) Risk management involves ensuring that the hospital works efficiently

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

4) Risk management aims to ensure that the healthcare provided is good value for money.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

5) Identifying a large number of risks makes the system safer and better.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

6) Risk assessment is more important than risk mitigation.

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

7) Risk is efficiently managed in my ~~organization~~

☐ Strongly agree ☐ Agree ☐ Neither agree nor disagree ☐ Disagree ☐ Strongly disagree

Could you please answer the following questions?

8) When thinking about risk, my primary focus is on the needs of:

☐ An individual patient ☐ A group of patients (e.g. ward) ☐ The hospital as a whole ☐ The local community ☐ The NHS ☐ Other

If other, could you please specify?

9) Which technique do you use for risk management

- | | | | |
|--|--|----------------------------------|---|
| ☐ Brainstorming | ☐ FMEA | ☐ What If | ☐ FTA |
| ☐ Likelihood Impact
Grid (Risk Matrix) | ☐ Influence Diagram | ☐ SWIFT | ☐ Barrier Analysis |

10) When tracking risks, I formally review risks at a frequency of:

- | | | | |
|---|--|---|--|
| ☐ Once per day | ☐ Once per week | ☐ Once per month | ☐ Once per year |
| ☐ Every few days | ☐ Every few weeks | ☐ Every few months | ☐ Every few years |