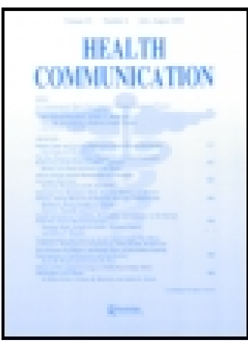

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Disclosing Adverse Events in Clinical Practice: The Delicate Act of Being Open

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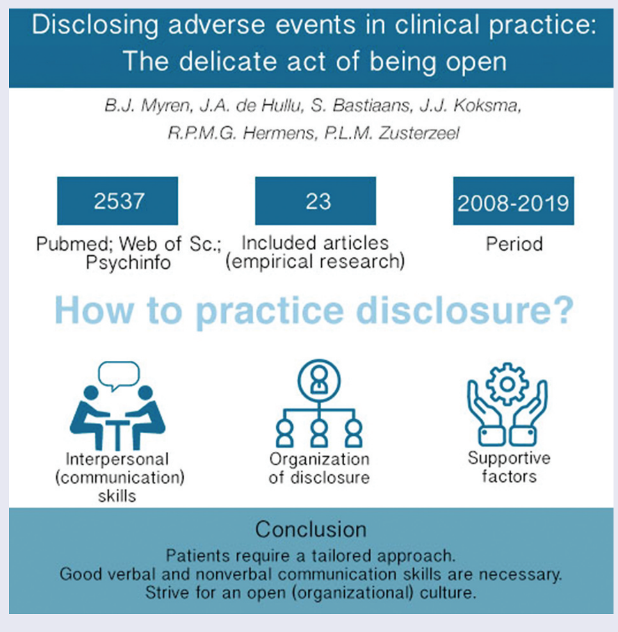
ABSTRACT

Practicing a "safe" disclosure of adverse events remains challenging for healthcare professionals. In addition, knowledge on *how* to deliver a disclosure is still limited. This review focuses on how disclosure communication may be practiced based on the perspectives of patients and healthcare professionals. Empirical studies conducted between September 2008 and October 2019 were included from the databases PubMed, Web of Science and Psychinfo. After full text analysis and quality appraisal this scoping review included a total of 23 studies out of 2537 studies. As a first step, the needs of patients and the challenges of healthcare professionals with the practice of providing an effective disclosure were extracted from the empirical literature. Based on these findings, the review demonstrates that specific disclosure communication strategies on the level of interpersonal skills, organization, and supportive factors may facilitate healthcare professionals to provide optimal disclosure of adverse events. These may be relevant to provide patients with a tailored approach that accompanies their preferences for information and recognition. In conclusion, healthcare professionals may need training in interpersonal (verbal and nonverbal) communication skills. Furthermore, it is important to develop an open (organizational) culture that supports the communication of adverse events and disclosure as a standard practice.



Introduction

The disclosure of adverse events (AE) is seen as an important ethical and patient safety concern (Dingley et al., 2008). Adverse events may be due to medical errors, in which case they may be preventable, or to factors that are not preventable (Rodziewics & Hipskind, 2020). Adverse events are incidents that result from a medical intervention and are responsible for harm to the patient (death, life threatening illness, prolongation of hospital stay, etc.) (Garrouste-Orgeas et al., 2012). The growing awareness for competent disclosure, fueled by the report "To Err is Human: Building a Safer Health System" in 2000 and the patient safety movement (Institute of Medicine Committee on Quality of Health Care in America [IOM], 2000), led to research on why, who, when, and where to disclose (McVeety et al., 2014). As a result, the healthcare environment has been improved, leading to the development of disclosure policies (Australian Commission on Safety and Quality in Healthcare, 2013; Disclosure working group, 2011; National Health Service [NHS], 2015) and support systems for healthcare professionals and patients in hospitals. Organizing

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a “safe” disclosure could lead to a better patient–physician relationship and may even lower the need to file a lawsuit (Robbennolt, 2009). However, knowledge on how to deliver the disclosure is still limited amongst healthcare professionals (O’Connor et al., 2010).

The core element of disclosure is open communication. Open communication has been defined as a relationship where both parties experience the other as a willing and receptive listener without negative or nonaccepting responses (Redding, 1972). Goldsmith framed open communication as an ideology that people refer to within their own lives and relationships (Goldsmith & Domann-Scholz, 2013). The healthcare context challenges open communication, due to power relations, the use of strong biomedical language, or different knowledge and values that can interfere with the interpretation of what has been said (Charles et al., 2000; Martin, 2015). Therefore in situations such as the delivery of bad news, or end-of-life communication, the importance of effective communication is stressed for it can negatively affect the patient–physician relationship and may lead to misunderstandings (Amati & Hannawa, 2015). The interaction between patient and physician during disclosure in case of an AE may require specific communication skills and work environment (World Health Organisation [WHO], 2009; Wu et al., 2013).

Despite the fact that healthcare professionals agree that open communication is important and the patient should be given honest information after an AE (Mira Solves et al., 2017), not all AEs are fully and/or honestly disclosed (Gallagher et al., 2006; Hickson et al., 1992). This may be related to the effect the AE can have on the involved physician in terms of a fear of litigation, trauma as the second victim, or other barriers to engage in transparency (O’Connor et al., 2010; O’Dowd, 2015; Pellegrini, 2018; Perez et al., 2014). In order to foster openness and honesty, the term “open disclosure” has been adopted into different policies and guidelines such as Open Disclosure Standard in Australia, the UK, and Canada (Harrison et al., 2017). However, recent research suggests a need to understand how healthcare professionals should interact and which skills or contextual factors, are important to foster open communication.

In the context of surgical care, surgeons are generally the healthcare professionals who have the task of disclosing AEs to the patient (Bell et al., 2011; Lipira & Gallagher, 2014). Surgeons are often unprepared and during the regularly organized morbidity and mortality meetings (M&MM) AEs are in general discussed amongst staff members, excluding the patient. These meetings often focus on technical or individual points of improvement, while the causes of AE can also lie in communication errors, team or system failures (Lingard et al., 2004; Thompson & Prior, 1992; De Vos, Hamming et al., 2017). In effect, these traditional M&MMs do not provide surgeons with the proper communication tools to practice disclosure and discuss the AE with the patient (Chan et al., 2005). In the current healthcare era where open communication and person-centered care are prioritized it would be beneficial for physicians to acquire skills in order to foster effective communication about AEs with the patient.

Therefore, this scoping review aims to describe which interpersonal and contextual factors are relevant to how disclosure communication may be practiced. The first step in formulating how disclosure communication may be practiced, is to understand the perspectives and experiences of patients and healthcare professionals with disclosure. This review selected empirical papers on the perspectives of patients and healthcare professionals with the communication of adverse events in a clinical setting.

Materials and methods

Research design

We performed a scoping review which is a technique to map relevant literature raised from a broad theme, representing different study designs (Arksey & O’Malley, 2003). The items of the PRISMA checklist were included and used during the literature review process (Moher et al., 2009).

Databases and search criteria

Although research on different aspects of the disclosure process slowly started since the report in 1999 “To Err is Human” (IOM, 2000), we focused on the most recent literature of the past decade: between September 2008 and October 2019. The databases PubMed, Web of Science and Psychinfo were used to identify studies on disclosure communication.

The search was executed using the broad terms “adverse event,” “disclosure,” and “patient,” or “physician perspective.” The search term “adverse event” included, medical error and near miss. See appendix for an overview of the used MESH terms. An information specialist of the medical library assisted in the online search. Google scholar was consulted to explore other relevant articles, citing the research included from the primary databases. Additional literature was found by handsearching after consulting the references of the included articles.

The inclusion and exclusion criteria were assessed in an iterative process during the selection of studies. During this iterative process it was possible to add or remove criteria that were unknown at the start of the review. The included original studies all referred to interpersonal aspects of disclosure of AE related to the interaction or communication between patient and healthcare professional. Studies that describe contextual factors that influence communication strategies during disclosure were also included. Only studies originated from Western countries in Dutch or English-language with available PDF were included.

The excluded articles focused on internal reporting, public reporting, or reporting to professional or regulatory organizations, disclosing errors among team members and the impact of testing a framework, method or training of disclosure. Furthermore, personal accounts, reviews, letters, editorials, opinion pieces, and commentaries were excluded. In case of multiple included studies by the same author, the quality and overlap of data was verified and excluded when similar data was used.

Quality assessment and synthesis of the studies

The literature was selected and interpreted by BM and SB. The inclusion and exclusion criteria were first assessed separately

by title and abstract selection using the open software Rayyan QCRI (Ouzzani et al., 2016). The reasons for the researchers to include or exclude studies were described in the program. Upon agreement, studies were included for full text screening based on the including and excluding criteria (see an overview of the selection procedure in figure 1). The quality of the literature was assessed with the Critical Appraisal Skill Program (CASP) Checklist for qualitative research and the Axial tool of the British Medical Journal (BMJ) was used for cross sectional observational studies and surveys (Critical Appraisal Skill Programme [CASP], 2018; Downes et al., 2016).

Data synthesis was performed in Windows Excel, where conclusions drawn from the empirical evidence of the studies were extracted and reframed into main categories. As a first step to outline how disclosure may be practiced more effectively, the perceived and experienced needs of patients and challenges of healthcare professionals were categorized. The main categories to frame the patients' needs and the healthcare professional's challenges were based on previous studies and different guidelines. This resulted in seven important stages of disclosure (Mazor et al., 2004; Schwappach & Koeck, 2004; Vincent et al., 1994). These stages were: pre-disclosure and preparation, notify the patient of the error, explain what happened, apologize, acceptance of responsibility, description of steps to be taken to alleviate harm and better the situation, and assurance of an investigation to prevent recurrence and learn from them.

Based on the results of this first step in the analysis we framed the data into new categories of skills and contextual factors that are important for the practice of openly communicating a disclosure.

Results

Article retrieval

The total unique records retrieved from the databases was 2537. The title/abstract and full text screening were performed with the inclusion and exclusion criteria leading to 22 eligible studies. In addition, seven records were identified through hand searching of the reference list. Finally, 29 studies were eligible for quality appraisal of which 6 were excluded because of a lack of empirical evidence, unclear aims or goal of the study, or lack of reflection on the development of the study. In total 23 studies were included in the review, as shown in figure 1.

Studies included in review

The included studies employed diverse study types: (a) simulation study with video vignettes (b) surveys with written vignettes (c) survey with personal experiences (d) interview studies and focus group studies, and (e) case studies. See Table 1 for an overview of the different study designs. The survey and simulation study results were interpreted and analyzed statistically while interviews and focus group studies were analyzed using (thematic) content analysis. The authors had diverse backgrounds ranging from communication science and psychology, ethics, medicine, law, and policy in the field of safety and quality of care. One study based their results on how surgeons described their experiences of disclosure, instead of studying how healthcare professionals act (Elwy et al., 2016). Two authors were both the primary author in respectively six and four studies: Hannawa (Hannawa, 2011, 2014, 2017, 2019; Hannawa & Frankel, 2018; Hannawa et al., 2016) and Iedema (Iedema & Allen, 2012; Iedema et al., 2011, 2009, 2008). Hannawa performed different studies that build on the validation of the Medical Error Disclosure Competence (MEDC) model (Hannawa, 2019; Hannawa & Frankel, 2018). Four studies evaluated disclosure communication in a context where Open Disclosure policy was implemented (Harrison et al., 2017; Iedema et al., 2011, 2009, 2008). The number of participants ranged between 1 and 721, of which fourteen studies involved patients and family members, eight studies involved healthcare professionals (surgeons, nurses, and clinicians) and one study used psychology students to score communication behavior of healthcare professionals.

General outcomes

All the included studies approached disclosure as an interaction in which specific communication competences were needed due to the complexity of healthcare and the associated problems around AEs. A study from 2019 showed that disclosure remains rare: one in four patients experienced an AE in the past five years, but only a third received a disclosure. These were AEs not only in a hospital setting, but also private practice, dentistry, and pharmacy. The physician who committed the AE was involved during half of the disclosures (Hannawa, 2019). AEs in these studies were referred to as: (harmful) medical error, healthcare/patient safety incidents, injured by healthcare and (un) avoidable adverse event.

Table 2 presents the needs of patients and the challenges healthcare professionals face within the different stages of disclosure. Studies show that the disclosure gap still exists because patients' expectations of disclosure are not met.

In the stage prior to disclosure patients need constant communication, informal discussions and a well prepared disclosure. On a more specific interpersonal level, studies describe the importance of sincerity, openness, and nonverbal communication. Next to that, patients prefer healthcare professionals to be specific about what actions will be taken to alleviate harm and to see how professionals learned from the event. Most research shows an apology is required by patients, preferably as soon as possible. One study concluded patients prefer an "other focused apology" where acknowledgment, remorse and reparation is included. Patients' pursuit of a lawsuit does not change after a verbal apology (Allan et al., 2015). However, when the apology is inadequate it could lead to a distance and the relationship may deteriorate. The disclosure may be performed by meeting the patients' needs and focus on reconciliation in order to heal relationships, instead of (only) reaching a (financial) resolution (Hannawa, 2011, 2019; Hannawa et al., 2016; Moore & Mello, 2017). Moreover, when the disclosure is effective and patients perceive the error as understandable, they will experience it as enhancing the relationship (Hannawa & Frankel, 2018; Mazor et al., 2009).

Table 1. Included articles and its characteristics based on year of publication.

Author	Type of study design	Participants	Data collection approach
Iedema et al. (2008)	Interview study	23 patients and family members involved in adverse event and incident disclosure	23 semi-structured, open-ended interviews
Iedema et al. (2009)	Interview study	131 healthcare staff from across 21 hospitals (anesthetist, registered nurse, patient liaison officer, midwife nurse, nurse manager, director health service)	131 semi-structured interviews, in-depth (45 min to 120 min)
Shannon et al. (2009)	Focus group study (n = 11)	96 registered nurses	Recording of 11 focus groups
Mazor et al. (2009)	Interview study	17 patients and family members that experienced an AE	Semi-structured phone interview
Wu et al. (2009)	Video vignettes. 5 variations based on apology and acceptance of responsibility, three types of adverse events ((1) missed mammogram, (2) chemotherapy overdose, (3) delay in surgical therapy)	200 volunteers from general community	Survey (likert-scale)
Hannawa (2011)	Simulation study. Hypothetical disclosure to a standardized female and male patient	30 attending physicians	Video recording of 60 disclosures and coded and rated on Likert-scale. Apology and general communication skills rated.
Iedema et al. (2011)	Interview study (retrospective) (n = 100)	39 patients and 80 family members who were involved in high severity healthcare incidents (leading to death, permanent disability, or long term harm) and incident disclosure	119 semi-structured in-depth interviews
Iedema and Allen (2012)	Case study. Replicated single-case approach. Evaluation of incident disclosure experience	1 wife of the patient	One in-depth interview (video recorded, 150 min).
Mazor et al. (2013)	Interview study	78 patients who believed that something had gone wrong during cancer care	78 in-depth interviews
Hannawa (2014)	Video vignettes. 2 variations: (1) verbally effective and nonverbally involved error disclosure. (2) verbally effective but nonverbally uninvolved error disclosure. 7 effectiveness criteria: presence of apology, sincerity of apology, physician's remorse, explanation of error, severity of error), fault attributions, intentions to switch doctors	216 hospital outpatients	Survey (ikert-scale)
Allan et al. (2015)	Video scenarios with components of (1) basic self-focused apology (admission, regret, restitution) (2) complex other focused apology (basic and acknowledgment, remorse, reparation)	247 community members	Survey (ikert-scale)
Watson et al. (2015)	Study 1: 8 videos of effective (n = 4) and ineffective (n = 4) disclosure rated by psychology students (n = 80) Study 2: discourse analysis of transcripts from 8 recordings (immediate topic repetition, topic consistency other, topic consistency self)	8 recordings of clinicians performing open disclosure to an actor in a training program	Study 1: Survey Study 2: Discursis analytic technique
Leone et al. (2015)	Simulated encounter with a patient/family member while communicating: clear responsibility error, or shared responsibility error. Coded for mentioning of term 'error' and apology	38 clinicians	Simulations were coded with Roter Interaction Analysis System (RIAS)
Elwy et al. (2016)	Reports of disclosure of adverse events surgeons experienced themselves, within 30 days of the original surgery	67 surgeons, representing each of the 12 surgical specialties	Web-based survey
Hannawa et al. (2016)	Video vignettes. 3 variations: (1) high nonverbal involvement (2) low nonverbal involvement (3) written vignette without nonverbal information	318 outpatients	Online survey with forgiveness-related self-report measures.
Carrillo et al. (2017)	Retrospective study based on analysis of data collected in 2014	1087 front-line healthcare professionals from hospitals and primary care	Web-based survey
Hannawa (2017)	Focus group (n = 10) in 5 hospitals. Test communication science model for disclosure communication	63 patients	Focus group recording
Harrison et al. (2017)	Interview study	13 doctors and 22 nurses in range of levels and specialties from hospitals and primary care	35 semi-structured interviews
Mira et al. (2017)	Focus group/Metaplan (n = 1)	15 medical professionals an 12 nurses (13 worked in hospitals)	Focus group recording

(*Continued*)

Table 1. (Continued).

Author	Type of study design	Participants	Data collection approach
Moore and Mello (2017)	Interview study	56 patients and 6 family members, 12 district health boards administrators, 5 lawyers specializing in accident compensation corporation (ACC) claims and 3 ACC staff	82 semi-structured interviews, key informant interviews
Hannawa and Frankel (2018)	Video vignettes (n = 16) including high/low apology, high/low non-verbal skills and high/low interpersonal adaptability. Context: high severity and low severity	721 current or former patients (treated within the past 3 years)	Survey
Hannawa (2019)	Questions (n = 23) about an experience of a disclosure of a medical error focusing on: skills, adequacy and effectiveness (elements of the MEDC model)	193 patients who experienced an error disclosure during the past five years	Web-based survey
Jones et al. (2019)	Focus groups following simulation training	26 nurses, 24 pharmacists, 41 physicians	Focus group recording

Table 2. Elements and stages of disclosure: patients' needs and healthcare professionals' challenges.

Elements of disclosure	Pre-disclosure and preparation	Notify patient of the error	Explanation of what happened	Apology (sincere)	Acceptance of responsibility and accountability	Description of steps to be taken to alleviate harm and better the situation	Assurance of an investigation to prevent recurrence and learn from them
Patients: **needs and expectations**	Informal discussions, constant communication (Harrison et al., 2017; Iedema et al., 2008, Iedema et al., 2009) More and open communication after a non-preventable AE (Mazor et al., 2009) Expect well prepared healthcare professional(s) (Iedema et al., 2011)	Be forthcoming about errors and AE (Mazor et al., 2009)	Tailored amount of information (Hannawa, 2017) The explanation is not just for emotional needs, but also to be informed (Mazor et al., 2009, p. 2013) Adequate nonverbal involved disclosure: may enhance the relationship (Hannawa, 2014, Hannawa, 2019)	Sincere, honest, full apology (Hannawa, 2019; Iedema et al., 2009; Wu et al., 2009) Nonverbal involvement shows sincerity (Hannawa, 2014) Important: > Face to face > Acknowledgment > 'Bad apology' can do harm (Hannawa, 2019; Moore & Mello, 2017) > Share pain (Iedema et al., 2009) Apology with admission and explanation (Hannawa, 2017; Mazor et al., 2013) Verbal apology is not enough, can be misinterpreted (Hannawa, 2019; Hannawa & Frankel, 2018)	Admit to repeated communication failures, inappropriate behavior and assume responsibility of error (Hannawa, 2017; Iedema & Allen, 2012) Acknowledgment of responsibility for event or error (Jones et al., 2019; Mazor et al., 2013)	Action should be congruent with words of apology and caring (Mazor et al., 2013) Expect follow-up and tangible support (Iedema et al., 2008, Iedema et al., 2011) Expect relational recognition, maintaining relationship and reparation as priority (Hannawa, 2017) Patient expected input when time was ripe for closure (Iedema et al., 2011)	Respond when patients or family members are concerned with preventing recurrences (Mazor et al., 2013; Moore & Mello, 2017) Action and information of clinician learning and improvement process (Iedema et al., 2011; Mazor et al., 2013) Reassurance that competent care of patient is top priority (Mazor et al., 2009)
Healthcare professionals: **challenges**	Which information should be recorded in patient clinical history (Mira et al., 2017) Whether disclosure should be made on incidents without damage (Mira et al., 2017) Moral distress when not included in disclosure discussions (nurse) Disclose promptly, as soon as possible, and not too informal (Hannawa, 2017; Iedema et al., 2008; Mira et al., 2017) Prior knowledge of, or experience with, litigation cases (Carrillo et al., 2017; Harrison et al., 2017)	UAE: no barriers or relevant difficulties (Mira et al., 2017) AAE: reason to avoid disclosure when litigation is likely (Mira et al., 2017) More difficult when negatively affected by AE (surgeon) (Elwy et al., 2016) Only half of the disclosures were attended by the clinician(s) who committed the error (Hannawa, 2019) Fear of lawsuit increased when organization did not usually inform patients (Carrillo et al., 2017)	To discuss whether event was preventable (surgeon) (Elwy et al., 2016) One-on-one setting: difficult to speak for someone else and provide factual information (Jones et al., 2019)	Fearful of litigation when implications of giving an apology are not always clear (Leone et al., 2015) Fear of losing professional reputation and lack of support (Carrillo et al., 2017) Challenging communication item (surgeons) (Elwy et al., 2016) Unclear when apology should be offered (depends on AE) (Mira et al., 2017)	Nurses are more fearful of punitive action (Harrison et al., 2017) Clear responsibility of the AE: physician communicated more patient-centered, emotional and attentive (Carrillo et al., 2017)		Challenging to discuss how recurrences of event could be prevented (surgeon) (Elwy et al., 2016; Hannawa, 2011)

Legend: AE: Adverse Event; UAE: Unavoidable Adverse Event; AAE: Avoidable Adverse Event

Studies on the experiences of healthcare professionals with disclosure communication mainly focused on the challenges or barriers they face. Healthcare professionals did not experience barriers or relevant difficulties when they needed to disclose an unavoidable AE (UAE). When there was a clear responsibility of the AE, the physician communicated more patient-centered, emotional and attentive (Leone et al., 2015). Studies indicated that surgeons experienced challenges to disclosure when they were negatively affected by the AE, and/or the event was avoidable, or when a punitive culture exists (Carrillo et al., 2017; Elwy et al., 2016; Mira et al., 2017). Other challenges arose during the pre-disclosure stage, such as which type of information should be recorded and whether disclosure should be made on incidents without physical damage to the patient. Nurses may feel distress while carrying for the patient when an AE has not been fully disclosed to the patient yet. In general, team disclosures were valued more as it provided moral and informational support for healthcare professionals (Jones et al., 2019). An individual setting was appreciated by professionals because it may provide a higher chance of establishing a relationship. The current practice of disclosure showed that taking responsibility and providing a sincere apology can be difficult. The Open Disclosure policy offered opportunities to learn about how to prevent an AE from occurring again.

The overview presented in Table 2 shows what both patients and healthcare professionals needs and challenges are in order to effectively practice disclosure. Based on these findings, we will outline strategies on how to practice a safe and effective disclosure.

Table 3. Disclosure strategies for healthcare professionals*.

Themes	Sub-themes
Interpersonal skills	Communication • Shared dialogue • Avoid medical jargon • Positive nonverbal use (e.g., eye contact, sincerity) • Active involvement of patients • Do not avoid delicate issues • Be respectful • Reflexivity Adaptability • Ability to change your view • Adopt words, concepts and perspective of patients • Let the patient (partly) be in control of topics • Interpersonal adaptability Tailored approach • Be familiar with patient history • Be aware of patients' needs • Consider the individual impact Create space to show emotions and ensure emotional debrief Take patient serious, acknowledge what happened "Other focused apology" • Include acknowledgment, remorse, reparation Invest in the relationship, focus on reconciliation
Organization	Include the whole team (staff originally involved, nurses/trained nurse managers) Invite care companion or neutral third party Avoid corridors and secure privacy Disclose promptly, as soon as possible Support patients to report errors Show actions and evidence of clinician learning Take action and reassure that competent care of the patient is top priority
Supportive factors	Culture of openness Presence of role models and guidance, leadership by example Guidelines and support on an organizational and institutional level Positive past experiences of disclosure Training for healthcare professionals and system learning

*The strategies described in this table are based on the meta-analysis.

Interpersonal skills, organization, and supportive factors

The empirical data from the studies in this review may inform the practice of disclosure communication on three levels: interpersonal skills, organization, and supportive factors (contextual factors). (Table 3)

The interpersonal skills are related to the soft skills of healthcare professionals. A (continuous) dialogue and a tailored approach in disclosure communication is important. Interpersonal adaptability can be practiced by using similar words as the patient and to talk about the topics the patient wishes to talk about (Watson et al., 2015). It is important for healthcare professionals to be aware of their role during disclosure and practice reflexivity. Healthcare professionals should be aware of how they say something because patients can interpret or experience the disclosure conversation differently from what has been actually said.

The context in which disclosure is being practiced may have an impact on whether healthcare professionals feel comfortable and able to practice open disclosure, and whether healthcare professionals are motivated to practice disclosure regularly. In terms of the organization of disclosure in a healthcare setting, the whole team may be involved during disclosure to provide all the necessary information, and care companions or a neutral third party may be invited to provide support for the patient. For example, nurses play an important role in emotional support at the ward, but do not always feel free to speak openly during disclosure (Harrison et al., 2017; Jones et al., 2019; Shannon et al., 2009). They need more support from physicians, as well as their (nurse) manager for improvement. Furthermore, healthcare professional should take action and support the patient to report errors. However, healthcare professionals need training in how to provide a disclosure that satisfies patients and supports them in overcoming any challenges or fears. Supportive factors that seem important to achieve the latter are, for example, learning tools and guidelines that are provided on an organizational and institutional level (Hannawa & Frankel, 2018; Iedema et al., 2011, 2008; Mira et al., 2017; Moore & Mello, 2017). Other supportive factors are related to personal past experiences of healthcare professionals (Elwy et al., 2016). Negative experiences may impact whether or not professionals feel comfortable enough to disclose the AE to the patient, and therefore may influence the openness within the organizational culture (Carrillo et al., 2017). The presence of role models and leadership by example also seem to be important to support a culture of transparency to practice open disclosure. Shannon (2009) suggests a role for nurse managers in that process. However, changing or influencing a (organizational) culture is complex and it takes time. A barrier to move toward an open culture may be a punitive culture, or negative consequences, when acting ethically and inform patients (Carrillo et al., 2017). The MEDC guideline Hannawa (Hannawa, 2019) outlines provide a clear overview of aspects that can be assessed, taught and learned by

healthcare professionals, such as adapting their communication to the expressed needs of patients during the disclosure instead of referring to a standardized message.

Discussion

This review gives an overview of what is important for patients and healthcare professionals when communicating a disclosure. Disclosure communication in an open and transparent way can only be practiced when healthcare professionals require skills on an interpersonal level and consider contextual factors, described in this review in a list with points that deserve attention. Patients need a tailored approach that accompanies their preferences for information and recognition, and to express their emotions and concerns. However, full and timely disclosure with the right skills remains challenging for both healthcare professionals and patients. This is related to the disclosure gap between patient and healthcare professional that still exists. The context wherein disclosure is practiced needs to provide the right climate, access, and support to communicate disclosure effectively. There is a clear need to train professionals with proper interpersonal skills, work toward an open organizational culture that supports open disclosure and obtain organizational or managerial support such as clear guidelines and role models. Team disclosure, a care companion and the involvement of nurses is important to reach better disclosure and satisfied patients after disclosure.

Although the ethical and moral obligation to disclose errors is acknowledged in current medicine, the reasons for not disclosing an AE cannot only be sought in a fear of litigation or loss of professional reputation (O'Dowd, 2015). For a long time AE's were not disclosed because it can have possible negative impact on patients' emotional well-being, especially when complete recovery after a severe AE appeared to be impossible (Carrillo et al., 2017; Han et al., 2017). The AE can also impact the professional as a second victim on a psychological or emotional level, making it difficult to openly communicate a disclosure (Bohnen et al., 2019; Coughlan et al., 2017). In addition, when professionals do practice disclosure it is important they know how to do it. Studies show that a poorly executed disclosure can have repercussions for the patient's wellbeing. When professionals attain such a skillset and become aware of what is important for an effective disclosure – it may support them in overcoming their fear of being sued (Huntington & Kuhn, 2003).

The majority of studied literature advised that healthcare professionals should be trained in disclosure communication even though medical communication has been given a larger role in today's medical education (Choudhary & Gupta, 2015; Crimmins et al., 2018). A growing amount of literature describes how training of disclosure communication can be achieved. The debriefing method, originated in the military, has been incorporated in simulated training and in daily practice for surgeons (Brindle et al., 2018). Guidelines have been developed to support physicians in handling disclosure, such as the "Mistake Disclosure Management Plan" beneficial in the early stages to prepare for disclosure (Petronio et al., 2013). Other studies suggest that during such educational endeavors it is important to provide a context where mistakes can be made and a learning culture is promoted (Dyre et al., 2017). This indicates that it is important to teach students how to embrace error from the start of their medical training and this may be integrated into the curriculum (Conn, 2018).

An open culture is important to install disclosure as a standard practice. Literature on safety culture refers to the perceptions of members of the organization on what safety in healthcare means, and the organizational commitment to reach safe care on all levels of the organization (Lark et al., 2018; Price & Forrest, 2016). This indicates that it is also part of the role of managers and people in a supervisory position to establish a safety culture. An open (organizational) culture may function in a similar way. Such role models can provide leadership by example and can influence the open communication or safety behavior of healthcare professionals (Harrison et al., 2017). Professionals in leadership positions may refrain from a punitive culture and support the idea of a "just culture" to encourage open and honest communication. Aspects of a just culture are learning from mistakes without asking the question of guilt; coaching instead of punishing; and create clarity about the often unclear boundaries between acceptable and unacceptable behavior and who determines this (Dekker, 2016; De Vos, den Dijker et al., 2017).

A strength of the review is the focus on recent studies, that increasingly focus on *how* a disclosure should be performed. It provides an overview of the different stages of disclosure and what is known within these specific stages. Furthermore, the review benefitted from the multidisciplinary research team (healthcare professionals and social scientists) to interpret the literature. This study also holds a few limitations, such as the amount of abstracts (n = 44) and full texts (n = 4), which were not located or were written in a foreign language. The methodologies of the included studies are simulations, vignettes or prior experiences, all to reenact a real-life situation. This is related to the challenges of studying a disclosure, because doing research on interactional behavior of healthcare professionals could affect patients. The studies with simulated patients or actors might have gotten different results in real-life situations. The studies that used descriptions of prior experiences of communication, may have lost important details of that interaction. Research showed that the human recall of communication behavior, or whom they communicated with, can be quite weak (Bernard et al., 1982). On the other hand, events that trigger strong emotions may positively support the memory (Tyng et al., 2017).

This review supports a context in which leading figures function as an example of open communication, in order to develop a strong practice of disclosure in a healthcare setting. This can only be achieved if the institution provides training of disclosure communication skills of healthcare professionals as well. In addition, it is important that healthcare professionals are aware of the interpersonal skills and contextual factors that may facilitate open communication, for example, when suggesting involvement patients at an M&MM to discuss AE together (Lipira & Gallagher, 2014). Further research is needed that observes "real-life" interactions of trained healthcare professionals and patients.

In addition, a study that focuses on how people learn how to master disclosure skills might be relevant in order to understand how disclosure communication skills can be taught more effectively. The results of the review are useful for the practice and development of a training module for healthcare professionals.

More attention is needed on an interpersonal, and contextual level to make disclosure a standard practice in clinical care and bridge the disclosure gap between healthcare professionals and patients. This review resulted in a list with points that may be considered by healthcare professionals. Both in the delivery of bad news and during disclosure it is important to use appropriate (non)verbal language, show empathy, use comprehensive language and listen carefully. In both deliveries physicians may experience a fear of being blamed, or of the patient's reactions. However, the main differences are the emphasis on a proper physical space when delivering bad news and giving hope (Ferreira da Silveira et al., 2017; Witt & Jankowska, 2018). Only one article in our literature review specifically mentioned the importance of space to secure privacy during disclosure (Mira et al., 2017). The empirical research on disclosure focuses on providing an effective apology and how to prevent an AE from happening again in the future (Hannawa, 2019; Iedema et al., 2009; Wu et al., 2009). Both could be seen as a way of giving hope, however, giving hope is not mentioned as an element of disclosure communication. Active involvement of patients and a continuous dialogue after an AE might be beneficial to provide a tailored approach and meet the patients' needs. The practice of open communication, and eventually a culture of openness, may be possible when training in disclosure communication is offered and professionals feel comfortable to talk openly about AEs.

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The authors have nothing to declare.

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Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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