Breaking the Silence: Exploring Medical Error Disclosure Practices in Pediatric Hematology-Oncology Teams

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ABSTRACT

To examine real-world medical error disclosure practices, perceived barriers, institutional support, and training needs among pediatric hematology-oncology professionals in Saudi Arabia. Cross-sectional survey. Multiple pediatric hematology-oncology centers in Saudi Arabia. A national anonymous survey was distributed via institutional emails, professional networks, and messaging platforms. The questionnaire assessed disclosure frequency, confidence, perceived consequences, institutional policies, and openness to structured training. Descriptive statistics summarized the responses, and subgroup analyses explored associations between demographic variables and disclosure practices. Sixty-three professionals participated, most of whom were physicians with over 10 years of experience. Disclosure practices varied: 43% disclosed on a case-by-case basis, 36.5% followed a harm-based approach, and 11% consistently disclosed all errors. Only 27% reported high confidence in disclosure, while 41% expressed neutrality or low confidence. Common barriers included concerns about family reactions (76%), fear of blame (68%), and uncertainty about what to disclose (65%). Just 25% had received formal training, though 94% supported the need for additional education. Professional role, but not years of experience, was significantly associated with confidence, disclosure frequency, and disclosure depth ($p < 0.05$). Substantial variability exists in medical error disclosure practices in pediatric hematology-oncology across Saudi Arabia. Key barriers and limited training opportunities hinder transparency. Culturally sensitive training programs and institutional protocols are needed to support clinicians and promote consistent disclosure practices.

Keywords: Medical Error Disclosure, Pediatric Hematology-Oncology, Patient Safety, Healthcare Communication, Clinical Ethics

INTRODUCTION

Medical error disclosure is a vital component of patient-centered care and ethical medical practice[1]. Truthfully communicating adverse events to patients and families upholds professional integrity, strengthens trust, and facilitates learning from error[2]. Despite international advocacy for transparency, actual disclosure practices remain inconsistent and are often hindered by institutional ambiguity, emotional burden, and fear of legal repercussions[3].

Pediatric hematology-oncology presents a particularly complex disclosure environment[4]. The high-risk nature of treatment, the emotional vulnerability of patients and families, and the involvement of multidisciplinary teams introduce unique challenges to error communication. In addition, in culturally nuanced settings such as the Middle East, clinicians may face additional uncertainty about what, when, and how to disclose, balancing ethical obligations with culturally sensitive communication norms[5].

While global guidelines emphasize the need for timely, honest, and compassionate disclosure, few studies have explored how these practices are applied in specialized pediatric contexts or in non-Western healthcare systems[6]. There is limited empirical data on how clinician roles, institutional support, and training gaps influence disclosure behavior.

This study aims to explore the current landscape of medical error disclosure among pediatric hematology-oncology professionals in Saudi Arabia. Specifically, it examines real-world practices, perceived barriers, emotional and legal concerns, and the availability of institutional support. The study also assesses confidence levels, training needs, and professional role-based differences in disclosure behavior to inform future interventions and policy development.

METHODS

This cross-sectional, survey-based study targeted healthcare professionals involved in pediatric hematology-oncology care across Saudi Arabia. The study aimed to assess real-world practices and attitudes toward medical error disclosure, as well as to explore perceived barriers, institutional readiness, and training needs.

Eligible participants included physicians, nurses, advanced practice providers, and pharmacists currently practicing in pediatric hematology-oncology settings. The survey was disseminated via institutional emails, professional society networks, and messaging platforms such as WhatsApp. Participation was voluntary, and informed consent was implied upon survey completion. All responses were anonymous to encourage honest and uninhibited reporting.

The instrument, titled *"Breaking the Silence: Survey on Medical Error Disclosure in Pediatric Hematology-Oncology Practice"*, was developed specifically for this study based on a review of existing literature and expert consultation. The questionnaire consisted of five sections: (1) demographics and practice background; (2) frequency and depth of disclosure; (3) confidence and institutional support; (4)

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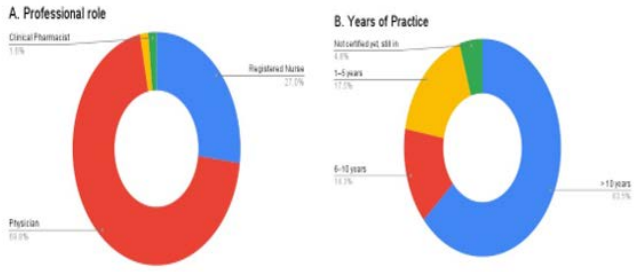

Figure 1. Demographic Characteristics of Responders

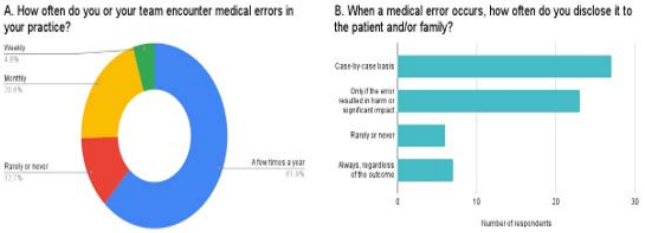

Figure 2. Frequency of Medical Errors and Disclosure Practices

perceived consequences and barriers; and (5) openness to training and structured interventions. The survey included a combination of multiple-choice questions, Likert scale items, and yes/no responses.

The survey was administered via Google Forms and remained open for three weeks. Collected data were exported to Microsoft Excel and analyzed using descriptive statistics (frequencies and percentages) for all categorical variables. Chi-square (χ^2) tests were used to examine associations between years of clinical experience (≤10 years vs. >10 years) and key disclosure-related variables, including confidence in disclosure, frequency of disclosure, and awareness of institutional protocols. In addition, further Chi-square analyses were conducted to evaluate the association between respondents' primary professional role and these same variables, as well as the amount of information typically disclosed. A p-value of <0.05 was considered statistically significant.

This study was approved by the Institutional Review Board of King Abdulaziz University Hospital, Jeddah, Saudi Arabia. All data were handled confidentially, with access restricted to the principal investigator and study team. As this was an anonymous survey targeting healthcare professionals, informed consent was implied through voluntary participation. The study was conducted in accordance with the principles of the Declaration of Helsinki and applicable local regulations.

RESULTS

A total of 63 healthcare professionals responded to the survey. Most respondents were physicians (approximately 70%), followed by nurses (27%), advanced practice providers (1.6%), and clinical pharmacists (1.6%). The majority (64%) reported over 10 years of experience, and 84% were currently working at an oncology center, with most employed in governmental institutions, as shown in Figure 1.

Regarding the frequency of encountering medical errors, 62% stated they experience such events a few times per year. When medical errors occur, disclosure practices varied: 43% disclosed on a case-by-case basis, 36.5% only if the error resulted in harm or significant impact, 11% consistently disclosed regardless of the outcome, and 9.5% reported rarely or never disclosing, as shown in Figure 2.

In terms of disclosure content, 49% reported disclosing only essential information, 17.5% tailored the disclosure based on family dynamics or context, and 19% shared full details, including the error's nature, cause, and consequences. Additionally, 14% indicated they do not typically participate in disclosure discussions, as shown in Figure 3A.

Confidence in disclosing medical errors varied considerably. Only 27% reported feeling very confident, while 32% were somewhat confident. Notably, 41% expressed either neutrality or a lack of confidence, including 27% who felt neutral and 14% who reported not feeling confident. These findings highlight substantial variation in perceived preparedness for navigating error disclosure conversations, as shown in Figure 3B.

Institutional support for error disclosure appeared inconsistent rather than universally absent. While 40% of respondents indicated that formal guidelines or protocols were available and that they followed them regularly, an additional 22% acknowledged the existence of such guidelines but were unfamiliar with their specifics. In contrast, 14% reported that no formal guidelines were in place, and 24% were unsure whether such policies existed, as shown in Figure 4.

Concerns about the consequences of disclosure were prominent. Most respondents believed that disclosure increases the emotional burden on

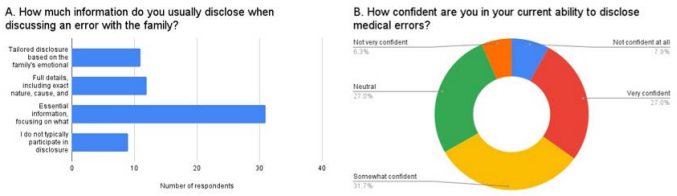

Figure 3. Extent of Information shared and practitioner Confidence during Medical error Disclosure

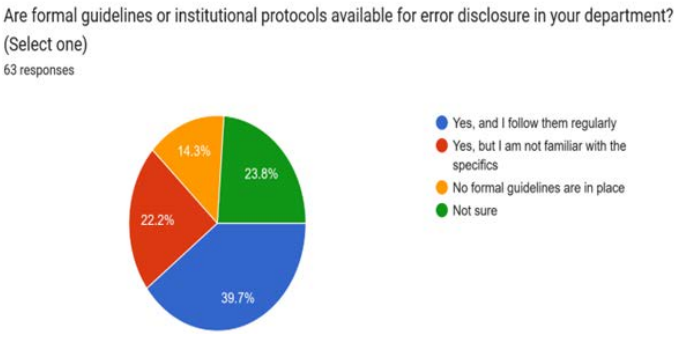

Figure 4. Self-Reported Availability of Institutional Error-Disclosure Protocols

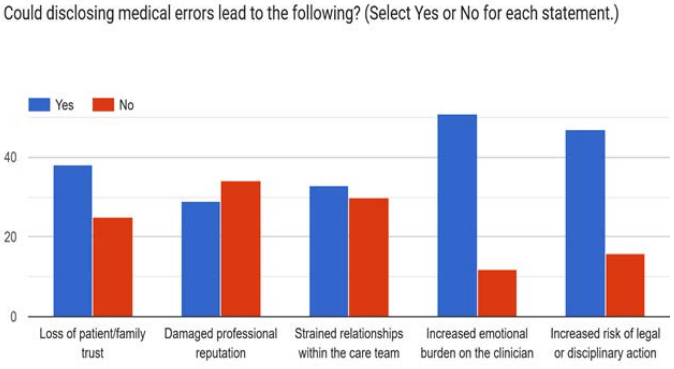

Figure 5. Perceived Risks or Negative Consequences of Disclosure

clinicians (81%), carries legal or disciplinary risks (74%), and may lead to loss of patient/family trust (60%). More than half also felt it could strain care team relationships (52%) or damage professional reputation (46%), as shown in Figure 5.

Barriers to disclosure were widely acknowledged. The most frequently cited obstacles were concern about the family's emotional or cultural reaction (76%), lack of institutional support or clear policies (70%), and cultural concerns about admitting mistakes (70%). Additionally, 68% reported fear of blame or punishment, and 65% expressed uncertainty about what or how much to disclose. Language or communication challenges were also identified by 48% of participants.

Training on error disclosure appeared to be limited. Only 25% of respondents reported having received formal training on how to disclose medical errors. However, there was overwhelming recognition of its value: 94% agreed that additional training would improve their confidence and skills. This strong consensus underscores the need for structured educational interventions to support clinicians in navigating these difficult conversations.

Finally, there was strong support for system-level solutions. Nearly all participants endorsed structured disclosure protocols (95%) and favored simulation-based workshops, team-based training, peer mentoring, and communication skills development (all >90%). Access to legal or ethical consultation was also widely endorsed as a necessary support.

Statistical association

Chi-square analyses were conducted to explore potential associations between years of professional experience (≤10 years vs. >10 years) and three key disclosure-related variables: confidence in error disclosure, frequency of disclosure, and awareness of institutional protocols. No statistically significant associations were found between experience level and confidence in disclosing errors ($\chi^2 = 1.59$, $p = 0.451$), frequency of disclosure ($\chi^2 = 4.12$, $p = 0.127$), or reported awareness of formal disclosure protocols ($\chi^2 = 0.53$, $p = 0.466$). These findings suggest that clinician experience may not be a primary determinant of attitudes or behaviors related to error disclosure in pediatric hematology-oncology settings.

In contrast, chi-square analyses revealed statistically significant associations between respondents' primary professional roles and several disclosure-related variables. These included confidence in disclosing errors ($\chi^2 = 15.57$, $p = 0.016$), frequency of disclosure ($\chi^2 = 17.63$, $p = 0.007$), and content of information disclosed ($\chi^2 = 25.89$, $p = 0.002$). However, no significant association was found between primary role and awareness of institutional protocols ($\chi^2 = 9.99$, $p = 0.351$). These findings suggest that professional role may shape individual disclosure behaviors and confidence more than familiarity with existing institutional policies.

DISCUSSION

This study offers valuable insights into the current state of medical error disclosure within pediatric hematology-oncology settings in Saudi Arabia. The findings reveal substantial variability in both the frequency and depth of disclosure. While some clinicians consistently disclose errors, most reported doing so on a case-by-case basis or only when harm occurred. Furthermore, disclosure content was often limited to essential facts, with relatively few participants sharing comprehensive details. These patterns reflect an underlying hesitancy and highlight the complex interplay between clinician intent, institutional culture, and perceived preparedness.

A notable observation is the limited proportion of respondents who consistently disclose errors regardless of impact (11%) and those who provide full details (19%). Instead, many respondents opted to tailor their communication or restrict it to what they deemed essential. This behavior likely reflects concerns about potential professional consequences, ambiguity in disclosure standards, and cultural sensitivity when engaging with families, factors echoed in the global literature on disclosure in high-stakes pediatric fields[7].

Clinician confidence emerged as a central issue, with fewer than one-third reporting high confidence in disclosing errors. Nearly half reported feeling neutral or unconfident, which may reflect insufficient training and limited institutional guidance. Indeed, while 40% of respondents reported that formal protocols were both available and followed, a combined 60% were either unfamiliar with existing policies, unaware of them, or stated that no formal guidelines existed. This institutional ambiguity likely contributes to clinician uncertainty and variability in practice.

The emotional, professional, and legal consequences of disclosure were strongly endorsed as barriers. A majority of respondents identified increased emotional burden (81%), legal or disciplinary risk (74%), and loss of trust (60%) as significant concerns. Additionally, more than half feared intra-team conflict or reputational damage. These concerns were compounded by reported barriers such as fear of blame, uncertainty about disclosure content, cultural concerns about admitting mistakes, and communication challenges, underscoring the multifaceted nature of disclosure hesitancy.

Statistical analyses provided further insight into the drivers of this variability. Interestingly, years of clinical experience were not significantly associated with confidence, frequency, or awareness of disclosure protocols. This suggests that experience alone does not equate to confidence or consistency in disclosure practices. In contrast, the primary professional role was significantly associated with several key behaviors. Physicians were more likely than nurses, pharmacists, or advanced practice providers to report higher confidence, more frequent disclosure, and more detailed communication. These differences point to role-based training gaps and underscore the need for targeted, interdisciplinary approaches.

Despite these challenges, the findings point to a strong desire for improvement. Only 25% of respondents reported having received formal disclosure training, yet 94% believed that additional training would enhance their skills and confidence. Nearly all participants endorsed the importance of structured protocols (95%) and favored strategies such as simulation-based workshops, team-based training, peer mentoring, and access to legal or ethical consultation.

This study has several limitations. First, the response rate was approximately 25%, which, while comparable to other surveys in specialized clinical settings, may limit generalizability. Respondents may represent a more engaged or motivated subset of the broader pediatric hematology-oncology workforce. Second, all data were self-reported, introducing potential recall bias and social desirability bias, particularly in areas such as confidence and disclosure behavior. Third, although the sample included a range of professional roles and institutions, it may not fully capture the diversity of practice environments across Saudi Arabia. Finally, the cross-sectional design provides a snapshot of current practices but does not allow for assessment of trends over time or causal relationships.

Future Directions and Implementation

Several action points emerge from this study to bridge the gap between ethical standards and current practice. First, healthcare institutions

should prioritize the development and dissemination of clear, standardized protocols for medical error disclosure tailored to pediatric and cultural contexts. These protocols should outline steps for initial disclosure, documentation, and follow-up[1].

Second, simulation-based training and team-based communication exercises should be integrated into routine professional development. These can build confidence, clarify expectations, and prepare clinicians for high-stakes conversations[2]. Third, peer mentoring and structured debriefing systems can offer emotional support and promote reflective learning after adverse events[8].

Fourth, clinicians considering disclosure must have readily available access to legal and ethical consultation. This support can help mitigate fear and uphold patient rights and institutional responsibilities[3]. Lastly, all training and protocols should be culturally sensitive, addressing common concerns around language, emotional tone, and family engagement[9].

By implementing these strategies, institutions can create an environment where disclosure is not only encouraged but also supported through practical, emotional, and systemic resources. Such reforms are essential for fostering a culture of transparency, patient trust, and continuous learning in pediatric oncology.

CONCLUSION

Medical error disclosure practices in pediatric hematology-oncology in Saudi Arabia show considerable variability in frequency, depth, and content. Barriers such as fear of blame, legal concerns, cultural sensitivities, and unclear institutional protocols hinder consistent transparency. Professional role, rather than years of experience, appears to influence disclosure confidence and behavior, highlighting the need for targeted, interdisciplinary interventions. Establishing clear, culturally sensitive institutional guidelines, expanding simulation-based and team-based training, and ensuring access to legal and ethical support are critical to fostering a culture of openness and trust.

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Competing Interest: None

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