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The 21st century sonographer: Role ambiguity in communicating an adverse outcome in obstetric ultrasound

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Abstract: *Introduction*: Ultrasound plays an integral role in pregnancy management in Australia. The role of a sonographer as the frontline practitioner is to scan the patient and identify any possible abnormalities, including foetal demise. This study sought the views, experiences and practices of Australian sonographers in communicating an adverse outcome to pregnant patients in different departmental settings in public and private sector practice. *Method*: Ten individual semi-structured interviews were conducted with 9 sonographers from metropolitan Sydney and 1 rural based sonographer. *Results*: The key themes emerging from the interview data were of ambiguity and inconsistency both in understanding the sonographer role and with practice protocols around communication when delivering "bad news" to pregnant patients. Most of the participants had not received any formal training in communication techniques. *Conclusion*: The sonographers wanted more autonomy, but with support and an agreed and consistent approach from their radiologists or sonologists. Practice sites that achieved the best results were those that had the

ABOUT THE AUTHORS

This is the second paper produced from the pilot phase of the project, *Communicating an adverse outcome to pregnant patients: Who's responsible? Who and how does it impact?,* being undertaken by the first author to meet requirements for her doctoral dissertation under the supervision of the two co-authors.

The first paper, "Organisational and professional structures shaping the role of sonographers in obstetric ultrasound", outlined the complex hierarchical structure and framework within which sonographers practice. While that structure identifies the professions and their accrediting bodies, it offers little guidance on how the professions can and should interact and collaborate on achieving professional goals and/or putting into place policies and practice protocols.

The next phase of the project is a national survey of Australian sonographers to collect data on current work practices across a wider range of geographical and departmental settings. A follow-up phase will involve semi-structured interviews with radiologists and obstetrician sonologists, and with patients on their experiences and expectations of an obstetric ultrasound.

PUBLIC INTEREST STATEMENT

Sonographers are the frontline practitioners in diagnosing adverse outcomes in obstetric ultrasound and, with the technologies now available, patient expectations have changed with patients expecting to know the results of their scan instantaneously. This study reports on the views, experiences and practices of Australian sonographers across a range of private and public practice sites. The findings indicate: (1) there is ambiguity and inconsistency both in understanding practice protocols and the sonographer role in delivering an adverse outcome to pregnant patients; (2) most sonographers lack formalised training and also feel unsupported in these situations leading to frustration, stress and burnout.

What is needed to address these concerns and to achieve the best patient-centred care within a supportive environment is collaborative action between professional bodies to establish set policies and practice protocols that clearly state the roles and responsibilities of sonographers, radiologists and obstetrician sonologists.

greatest direct collaboration between the sonographer and the sonologist, which was demonstrated in the obstetrician-sonologist-run practices. Policy reform, improved clarity and standardised protocols are needed to improve practice guidelines for sonographers in communicating adverse outcomes to an expectant mother.

Subjects: Public Health Policy and Practice; Medical Ethics; Obstetrics, Gynecology & Women's Health; Maternal-Fetal Medicine; ObGyn Imaging; Obstetrics; Ultrasonography

Keywords: Sonographer; communication; role; obstetrics; bad news

1. Introduction

Obstetric ultrasound is the gold standard for diagnosing possible foetal abnormalities or life-threatening maternal complications. Conditions potentially detected during a routine ultrasound include miscarriage (estimated 25% of diagnosed pregnancies), trisomy 21 (approximately 1:1100) and congenital heart disease (8 out of 1,000 live births) (Down Syndrome Australia, 2013; Sands, 2016; Wessels & Willems, 2010). Patients in Australia have the option of a minimum of three obstetric ultrasounds (Department of Health, 2016) through a public hospital with no out-of-pocket expenses, or through a private practice with associated costs. A mother has the right to be in control of the obstetric ultrasound and to be kept informed on the status of her unborn child (Stone, 2016). Additionally, there is evidence that an ultrasound helps develop the bond between a mother and her baby (Ji et al., 2005; Pretorius et al., 2001). However, there are potentially moral and ethical decisions imposed on the sonographer about communicating results to a pregnant patient which are different to that of any other type of scan for example a vascular ultrasound. This is due to the psychological and emotional attachment the mother has to the unborn child (Brauer, 2016). While patients today are more knowledgeable due to the accessibility of information about pregnancy and ultrasound diagnostic capabilities through medical and expectant mother/parent websites, this can also increase their anxiety (Healthdirect, 2016; Larsson, 2007; Ultrasoundpaedia, 2016).

The most effective and accepted model of care delivery is a patient-centred approach which explicitly centres on the needs of the individual patient (Kitson, Marshall, Bassett, & Zeitz, 2013). The sonographer's role in communicating an adverse outcome to pregnant patients is stressful and requires sensitivity similar to that of other occupations such as doctors, nurses and police officers (de Leo, Anile, & Ziliotto, 2015). Doctors and nurses communicate to a patient to inform them about their life-threatening or life-ending illness in a similar way to police communicating with families about the death or injury of a family member (Lawrence, 2010). In such professional settings, there are protocols to follow, however in the sonographer context the line of authority and protocols can be less defined and ambiguous (Thomas, O'Loughlin, & Clarke, 2016). Guerra, Miriesse and Baião (2011) showed sonographers communicate to patients with no prior knowledge of their disposition or history, and yet they are the starting point of the grieving process for patients upon hearing the adverse outcome.

Patients have described their experiences with health professionals as a feeling of "falling through the cracks" and feeling "lost" because of poor communication (Olson & Bialocerkowski, 2014). The delivery of "bad news" has been studied extensively in medical practice and nursing (Brown et al., 2009; Rosenbaum, Ferguson, & Lobas, 2004; Shaw, Brown, & Dunn, 2013; Warnock, 2014), however there is little evidence in Australia on the effects and implications of sonographer communication in obstetrics, even though the approach and empathy shown by the sonographer may have a profound effect on a patient (Morse, 2011; NSW Government, 2013).

Sonographers often feel unsupported and in a conflicted position as they are not the reporting practitioner, and concealing information is difficult and stressful because patients expect or demand to know the result of their scan immediately (Simpson & Bor, 2001). Evidence suggests this sort of pressure leads to burnout and compassion fatigue among sonographers (Craig, 1985; Lee Blume, 2002; Menezes, Hodgson, Sahhar, & Metcalfe, 2013; Simpson & Bor, 2001; Singh et al., 2016). In some cases the possibility of a formal complaint or litigation is also a potential stressor (Marshall, 2010).

2. Aim

This study sought the views, experiences and practices of Australian sonographers in communicating an adverse outcome to pregnant patients, and the roles and responsibilities of sonographers in different departmental settings in public and private sector practice with two specific aims: (1) to explore the variations in the sonographer's role in communicating to a pregnant patient (2) to consider the implications of the findings for individual sonographers and the health system with a particular focus on the limitations or absence of models of communication protocols and policies.

3. Method

3.1. Approach

This qualitative study was conducted as a pilot to inform a larger project that will include a national survey of Australian sonographers. Ten individual semi-structured interviews were conducted with sonographers to explore their current personal and organisational views and experiences around communicating an adverse outcome to pregnant patients. Interviews continued until saturation of ideas and themes was reached. The participants were predominantly in metropolitan Sydney, with one rural based sonographer, and all were qualified sonographers accredited by the Australian sonographers Accreditation Registry (ASAR). The primary researcher is a practising sonographer.

3.2. Sampling/recruitment

Participants responded by email to a flyer distributed at an Australasian Sonographers Association (ASA) monthly educational meeting in Sydney. Participants who performed ultrasounds on obstetric patients were accepted from public and private practice settings.

3.3. Interview protocol and analysis

For this study, the guiding questions included:

- Are there protocols in place for communicating "bad news" to pregnant patients?
- Do these vary across different practice settings?
- Do these vary with different radiologists/sonologists?
- What are the views of sonographers on the roles and requirements of sonographer practice?
- Are there support mechanisms available to sonographers?
- What impact does communicating adverse outcomes have on sonographers?

All participants gave permission for interviews to be audio-taped. Themes were identified initially through manual analysis of transcriptions. The transcripts were then coded and analysed using NVivo10 software. A basic coding tree and definitions were developed and refined during regular meetings of the researchers. Additional manual analysis identified illustrative quotations which are incorporated in the text and others are represented thematically in a table format.

4. Results and discussion

As summarised in Table 1 participants were representative of sonographers by gender, practice sites and experience levels. There were three male and seven female participants which closely reflects the gender bias in this profession: male sonographers account for 25% of practitioners in Australia (Australian Sonographer Accreditation Registry, 2012).

Following analysis of the 10 participant transcriptions, the key themes emerging from the interview data were of ambiguity and inconsistency both in understanding the sonographer role and with

Table 1. Participant demographic

Participant	Gender	Age	Days	Practice setting	Policy /Protocol*	Years Scanning	Formal Training**
1	male	40–50	5	private radiology	No	20	No
2	female	60–70	3	private radiology	No	25	No
3	female	30–40	5	public hospital radiology and obstetric	Yes informal	6	No
4	male	40–50	5	private radiology	No	15	No. But informal training within an obstetrics practice previously worked in
5	female	40–50	2	private radiology	No	17	No
6	female	40–50	4	private radiology	No	23	No
7	female	50–60	5	both private radiology and obstetrician run	Not in radiologyYes private obstetric	30	Within obstetrics practice currently works in part time
8	male	40–50	5	private radiology	No	20	No
9	female	40–50	5	private obstetrician run	Yes	25	Yes
10	female	30–40	3	public tertiary	No	17	Yes at another tertiary public hospital.

*Formal Training is any formalised training in breaking bad news.

**Policy/Protocol—refers to the existence of a formal written protocol or policy in the department.

practice protocols around communication when delivering "bad news" to patients. Unstated assumptions and ad hoc communication practices caused stress and confusion for sonographers, with almost all the participants confirming that they had not received any formal training in communication techniques or what was expected of them in such circumstances. Rather, there was a reliance on informal, tacit knowledge being passed on by more experienced sonographers. Sonographers working in general radiology practices felt more stressed and less supported than sonographers working in obstetrician-sonologist-run departments.

4.1. Ambiguity around the Sonographer's role

Sonographers believed that there is ambiguity among all stakeholders (radiologists, sonologists, referrers and patients) on the role of a sonographer in communicating with a pregnant patient. This was frustrating and stressful for sonographers, as they felt vulnerable and poorly recognised for the important role they play in not only diagnosing the patient's condition, but also being the frontline practitioner in communicating findings to the patient.

One sonographer emphasised that the inference that sonographers are little more than "technicians" is inaccurate and unfair, as they are the radiologist/sonologist's "eyes" and are expected to diagnose and, in most cases, communicate any findings:

> [Working in general radiology] you very much still are a technician… a trusted technician, but you're still a technician … there's a different mindset here [private obstetric] … you work as a team … there's a trust that we will handle our patients with great care and there's a trust that we will work together … for the best outcome for the patient. (Female, private obstetric)

Sonographers feel they have taken on more responsibility over the past ten years in patient communication; that is, many radiologists have delegated this responsibility to them. One participant commented: "I remember that the doctors (radiologists) would all be willing to come into the room and check things and say to the patient 'This is what we saw' (Female, general radiology). Most of

the sonographers would prefer the radiologists to be more involved, particularly when communicating adverse findings directly to the patient. The sonographers felt there is a lack of understanding and lack of recognition by general practice radiologists of their role in communicating with patients, and they felt unsupported. As one participant commented: "I have worked in places where you don't have a backup" (Male, general radiology).

There were differing opinions on what sonographers thought should be part of their role. Some sonographers expected the radiologist/sonologist to "step up" and impart the results if there was bad news, while others believed it was "their call" and "judgement" and part of a sonographer's role. Ultimately, they felt that their central role with the patient was not recognised by radiologists and associated professional bodies (Thomas et al., 2016).

Several participants expressed frustration with the pressures they experienced, as they believed in a private general radiology practice there is a need to increase patient numbers at the expense of patient care. In contrast, the sonographers in an obstetrician-run setting felt recognised and appreciated by the obstetrician sonologists. One participant stated, "I like that back up, I rely on the obstetrician" (Female, public tertiary referral hospital).

Consistent with Marshall's (2010) findings, many sonographers felt "professionally vulnerable" to litigation. This was due to what they saw as the increase in responsibility combined with a lack of training in communicating adverse outcomes.

The desire to gain a patient's trust is important, and sonographers felt they would be betraying that trust if they were not open and honest in their communication. In support of Brauer's (2016) statements on understanding the patient's needs, all participants talked about maintaining "fairness" to the patient by not concealing information (see Section A, Table 2 for participants' comments).

4.2. Ambiguity and inconsistency in policy and protocols

Most sonographers stated that there was policy ambiguity at departmental and professional levels about communication with the patient in the obstetric setting, with constantly changing parameters around responsibility and expectations. A strong contributing factor was what they saw as the increasing autonomy in their relationships with the patient and radiologist or sonologist.

Few participants were aware of, or followed any formalised policy. Two participants who worked in private obstetric-only practices held in-house meetings to discuss ways to communicate bad news to a pregnant patient, and had an "unwritten" and open communication policy, which was encouraged by the obstetric sonologists. The other eight participants stated that, rather than any formal protocol, it would depend on the radiologist/sonologist with whom they were working on the day. Most sonographers indicated that no open discussion had taken place in their department, but there was an unspoken protocol that, according to one participant, "was almost purposively grey" (Male, private general radiology), so no-one had to take ownership.

Ultimately, sonographers learned through experience and adapted to the radiologist/sonologist working on the day. Tacit knowledge was the result of "unofficial" and "implied" protocols passed down through more experienced colleagues: "It's just developed on the job" (Male, private radiology). This ambiguity around communication protocols was frustrating for the sonographers, and some perceived this as a lack of trust by individual radiologists or sonologists.

Consistent with Simpson and Bor's (2001) findings, participants acknowledged that formal training with structured guidelines and policies would reduce the anxiety they felt when faced with having open communication with the patient. One participant commented: "We're lacking in it (training) ... something has to be written down ... because we have a lot of young sonographers with much less

Table 2. Participants' comments

Section A Ambiguity around the sonographer's role
"When I started training we were not allowed to tell the patient anything, many years ago." (Female general radiology)
"Radiologists have to be involved, and they need to be willing to step it up and be willing to come in the room and they need to give the news…" (Male general radiology)
"…this is a role of the sonographer, so it needs to be recognised not just by our own professional bodies but by the bodies that govern the industry" (male general radiology)
"I think it's a sonographer's call these days. I think we should use our experience and own judgment." (Female, general radiology)
"Our bosses (obstetricians) prefer us to actually communicate with the patient if we have an adverse finding then and there." (Female, private obstetric)
"…so we know what the expectations are. And it's not dependent on who's on, on the day. This is the rule; this is what you do…I think it's the best thing for the patient." (Male, general radiology)
"…Technically it's outside the scope of a sonographer's role…. sonographers aren't technically supposed to give out information about scan results." (Male, general radiology)
"…I think it's part of the role…recognition of that role, recognition is important." (Male, private radiology)
Section B Quotes for ambiguity in policy and protocol
"…there's nothing that I know of that is set in stone about how to handle it. It varies from doctor to doctor." (Male, general radiology)
"We don't have a written protocol it is very much dependent on the sonographer's style" (female, private obstetric)
"We have the ability to say nothing if we don't want to say anything. We also have the ability to disclose everything if we feel comfortable" (female general radiology)
"I've never actually seen the protocol. I think it's a bit of an unwritten one…" (Female, private radiology)
"The only training we had was when we were a student, a few workshops we may have done about breaking bad news but sort of informal really, pretty much on the job or shadowing a sonographer." (Male, general radiology)
Section C Quotes for sonographer stress
"…your heart rate does go up as you are plucking up the courage to say…" (Male, general radiology)
"I think it's quite stressful…….I used to feel very guilty." (Female, obstetric public)
"It is uncomfortable and probably sadness. Cause again we are Mothers, and we feel that pain…" (Female, general radiology)
"…you try not to get emotional, but you do…" (Female, public obstetric)
"Quite often you get a tear in the eye" (Female, general radiology)
"…some sonographers I think do struggle afterwards. We've had plenty of female sonographers come out and get teary and have to compose themselves to return back to the room." (Male, general radiology)
"…it would affect me emotionally, I use to get anxious for them, and I'd worry that I'd miss stuff." (Female, public obstetric)
"Now…… I know that I have all the skills to support that patient in any way that they need." (Female, public obstetric)
"…sometimes I'm under a bit of pressure where I work because the doctors know I've had more experience than they have."(Male, general radiology)
"[Patients are] looking at the internet. Everybody's well informed and educated…" (Female, general radiology)
"…to say 'I am sorry' and 'I am so sorry for your loss' to actually not be afraid to touch, put your hand on the patient and look them in the eye. It's difficult." (Female, public obstetric)
"I think for patients' I think they need to know that someone's still going to help them…" (Female, public obstetric)

experience … that's why there should be a written protocol" (Male, general radiology). They believed the professional bodies needed to be more involved and take leadership in this area, emphasising the need for direction and a structure in place for all sonographers and for students. This supports the research by Thomas et al. (2016) that there is not a definitive line of authority on policy-making, with no formalised structure in place under the current framework for obstetric ultrasound (see Section B, Table 2 for participants' comments).

4.3. Sonographer stress

There was constant reference to work pressures and stress with many participants recognising emotional burnout and guilt personally and observing this in other colleagues. This is particularly associated with the emotional work involved in scanning a pregnant patient, and acknowledging the mother's anxiety about the possibility that their baby may have an abnormality. Comments

included: "In foetal medicine I feel more pressured" (Female, tertiary public hospital obstetric department), and "It's a very emotionally draining job, and I think it's more emotionally draining than you realise" (Female, private obstetric practice). This supports and confirms similarities to the experiences of doctors when giving bad news (Shaw et al., 2013).

Sonographers felt a heavy burden of responsibility to the patient. The sonographer-patient interaction is an emotional environment with the potential for extreme highs and lows, particularly in the obstetric setting as the mother has a strong bond and emotional ties to the foetus that draws the sonographer into a closeness and perceived moral obligation to the mother. This supports Brauer's (2016) statements on the importance of being a supportive and professional "friend" foremost, rather than an elite expert complying with professional ethics codes. Sonographers want to do the right thing by their patient by keeping them informed during the scan with the aim of building the patient's trust.

The responsibility of diagnosing a possible abnormality in the scan causes anxiety because of the turmoil of deciding whether to communicate this adverse outcome to the patient. This supports Singh et al.'s (2016) research on the increased risk of occupational burnout in sonographers due to their role being emotionally draining and imposing a psychological burden, which has led to some sonographers seeking counselling outside of their workplace. As one participant stated about a colleague: "He had to take time off. He had a breakdown" (Male, private general radiology practice).

Patients' expectations of the sonographer were felt to have also increased over recent years with the increase in patient knowledge mainly due to information obtained through the internet. All participants stated that patients expect to know the result instantaneously, which puts pressure on them: "There's a lot of pressure on you to tell them what's going on" (Female, both private radiology and private obstetric practice). As highlighted in Simpson and Bor's (2001) research, the sonographers experienced a lot of psychological distress. Some participants in this study felt a sense of guilt if there was an adverse finding as if it were their fault. One sonographer stated that there was a "need to create a bubble to protect you" (Female, private obstetric practice) from any emotional stress. This was important if a sonographer wanted to be able to sustain a long-term involvement in obstetric ultrasound. The "bubble" came with experience, as most sonographers did not have any formal training on how to deal with such a situation. Rather than formal support to help with emotional burnout, they tended to use each other in informal debriefing sessions to discuss difficult cases, however there was no extra time given during work hours to do this. The public hospital system does have an employee assistance program which one sonographer had used for other personal reasons. Sonographers who worked in a tertiary referral public hospital felt that working in a multidisciplinary team with geneticists and having access to midwives and counsellors made for a more supportive environment and helped to reduce their stress levels (see Section C, Table 2 for participants' comments).

5. Conclusion

There are complex challenges in providing high-quality care in obstetric sonography. The modern patient with the accessibility to information via technology has changed the working parameters and expectations of the sonographer role, and this needs to be addressed to ensure the best outcome for both the patient and the sonographer. The major finding from this study is the existence of sonographer stress due to a lack of formal recognition, support or protocols. Practice sites that achieved the best results were those that had the greatest direct collaboration between the sonographer and the sonologist, which was demonstrated in the obstetrician-sonologist-run practices. Policy reform, improved clarity and standardised protocols are needed to improve practice guidelines for sonographers in communicating adverse outcomes to an expectant mother. All participants acknowledged that the topic of patient communication had not been well addressed by practitioners themselves or professional bodies. The sonographers wanted more autonomy, but with support and an agreed and consistent approach from their radiologists or sonologists, no matter whom they are working with on the day.

The authors acknowledge that the study was limited to metropolitan Sydney with the exception of one rural sonographer and the voluntary nature of participation had the potential for more motivated or stressed sonographers to volunteer. A strength of the research is it allowed candid contributions by all participants through individual semi-structured interviews.

Further evidence will be gained through a second phase of the study which will include a national survey to ensure that all sonographers will be represented from more varied geographical locations, department sizes, and individual backgrounds.

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The authors declare no competing interest.

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