RESEARCH ARTICLES

'Emotional roller coaster': Fertility nurses' stressors, wellbeing, burnout and work engagement through a mixed methods investigation

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ABSTRACT

Objective: This study set out to examine the stressors and mental health of Australian Fertility Nurses who form a crucial part of the fertility journey.

Design/Methods: A mixed-methods approach was used to examine the stressors of 74 fertility nurses and their mental health outcomes. Open-ended qualitative questions were used to capture stressors and responses were analysed using Reflexive Thematic Analysis. Quantitative surveys were used to measure nurses' distress, wellbeing, and work engagement and statistical analysis was used to compare these results with normative data and comparison samples.

Results: The qualitative analysis indicated Fertility Nurses face a myriad of stressors, which were grouped under the themes of Interpersonal Stressors, Organisational Stressors, and Emotional Burdens. Fertility Nurses struggled with high workloads and conflicts with patients and other staff. They also faced difficulties in managing the painful discussions often present with unsuccessful fertility treatments. These stressors are reflected in the quantitative results which show that Fertility Nurses experience high levels of burnout and low levels of wellbeing and workplace engagement. Some of these outcomes were worse than other healthcare populations.

Conclusions: The study offers an insight into Fertility Nurses' experiences – capturing the views of an under-researched group. The results have implications for Fertility Nurses, their patients, fertility clinics, and the wider sector, as nurses are central to patient experiences and successful treatment.

Keywords: Nursing, IVF, Mental Health, Stress, Engagement

What is already known about the topic?

- The stress of fertility treatment for patients is well documented, but less is known about the stressors faced by the Fertility Nurses who care for patients.
- Existing qualitative research points to possible stressors for Fertility Nurses relating to organisational pressures, emotional burdens, and interpersonal conflict.
- Much remains unknown regarding stressors for Fertility Nurses as most studies focus on just one source of stress and there is no quantitative data available relating to Fertility Nurse mental health.

What this paper adds

- We use a mixed methods approach to examine the unique mental health implications and stressors of Fertility Nurses – providing the first quantitative data with this under-researched group.
- Thematic analysis reveals Fertility Nurses face a wide range of stressors which fall under the themes of interpersonal stressors, organisational stressors, and emotional burdens. Quantitative results show high levels of burnout and low levels of wellbeing and workplace vigour.
- The results have important implications for Fertility Nurses and clinics, with flow-on implications for fertility patients.

'Some days it can be an emotional roller coaster with a change in emotions every hour.'
(Participant 14, IVF Nurse Coordinator)

'It is both stressful and very unsatisfying to not be able to give patients the level of care and attention we feel they deserve'.
(Participant 28, IVF Nurse)

INTRODUCTION

Fertility treatment can be a complex and emotionally taxing journey for couples. Doctors and embryologists play critical roles, however, it is the Fertility Nurse who often serves as the linchpin for the whole process – providing the essential care, emotional support, and coordination needed by patients.[1,2] The Fertility Nurse is often the only staff member involved in patient care throughout the whole IVF cycle and their role is continually expanding and changing to meet the needs of couples and advancements in the field.[2–4] Nurses now undertake a wide range of medical roles formerly undertaken by medical officers, including initial consultations, ultrasound scanning, ovulation induction, intrauterine inseminations, administration of medication, sperm preparation and pregnancy tests.[5,6] They are also the primary contact point with patients – providing information, detailed planning, accurate documentation, and emotional support.[2] Although Fertility Nurses play a critical role in the management of infertility, there is little research documenting their specific stressors and mental health challenges.

MENTAL HEALTH OF FERTILITY NURSES

Most studies on the mental health of nurses focus on hospital nurses and there are few studies on Fertility Nurses; a distinct group who operate in unique circumstances.[2] While the stress of fertility treatment for patients is well documented,[1] less is known about the stressors faced by Fertility Nurses.

Stressors

Existing research points to a range of possible stressors for Fertility Nurses relating to organisational pressures, emotional burdens, and interpersonal conflict. Organisational pressures have increased for Fertility Nurses as their role expands to match the rapid advancement of fertility treatment, without necessarily receiving appropriate training[5–7]. This can lead to work overload and time pressures.[8] These stressors are exacerbated by the heightened emotional context of fertility treatment.

The crisis invoked by infertility is rated equally to cancer and the death of a family member on the Life Events Scale.[1,9] Unlike most doctors and technicians, nurses often care for patients over an extended time, and must frequently deliver bad news to patients when treatment is unsuccessful.[10] Consequently, staff are often required to deal with negative emotional reactions from patients and past research indicates nurses can feel like co-passengers on a roller coaster ride of highs and lows.[2,8] There is also conflict with 'difficult patients' which can lead to intense feelings, lower job satisfaction, and higher burnout.[1,11] Despite this, many staff in fertility clinics report they feel inadequately trained to deal with patient complaints.[12]

Fertility Nurses have extensive contact with both patients and doctors and are often expected to hold together the multiple components of treatments.[13] Nurses may experience problems with colleagues as power imbalances are commonly documented between doctors and nurses in hospitals.[14] These imbalances may be further exacerbated in fertility clinics where doctors are also their direct manager or clinic owner. However, there is scarce research on such organisational stressors.

CONSEQUENCES OF WORKPLACE STRESSORS

Workplace stress among Fertility Nurses can negatively impact the quality of work and the patient experience. For example, past research indicates that many Fertility Nurses use noncaring (emotional distancing) to cope with the intense emotions associated with their work.[15] Initially, this defence mechanism may be effective but is unlikely to meet the needs of the patient who typically seeks positive relationships with sensitive and respectful staff.[15–18] Despite this, some patients indicate that nursing staff focus only on practical care.[19] This is unfortunate as patient-focused care is associated with higher pregnancy success rates,[12] lower patient distress, and decisions to continue treatment.[1]

The stressors faced by Fertility Nurses may also affect them on a personal level. Demands and pressures in healthcare often translate into frustration, burnout and low wellbeing.[20]

We found no studies measuring these issues among Fertility Nurses, but one study within private IVF centres in Vietnam found that nurses experienced the highest levels of occupational stress when compared to doctors and IVF technicians.[21] This finding suggests high stress among Fertility Nurses and the current study further investigates the mental health outcomes of burnout, work engagement, and wellbeing.

Building knowledge on the mental health and stressors of Fertility Nurses is a key step toward improving their working life and wellbeing. This is important for nurses, and also for their patients, as poor mental health among healthcare staff can have detrimental effects on patient outcomes.[22,23] There are also organisational implications as high stress and burnout among nurses are associated with staff turnover, absenteeism, and loss of institutional knowledge.[24] Given this, there is a pressing need to better understand the experiences of Fertility Nurses, to help nurses, organisations, and patients.

STUDY AIMS

This study aims to investigate the views of Fertility Nurses regarding their most common stressors while also documenting their levels of burnout, engagement, and wellbeing.

The study seeks to answer the following research questions:

- Which aspects of work do Fertility Nurses find most stressful? (*Qualitative data*)
- What is the state of burnout, work engagement and wellbeing among Fertility Nurses? (*Quantitative data*)

METHODS

The study employs a mixed methods approach. Qualitative data on nurses' stressors is analysed using Reflexive Thematic Analysis, providing insights into their lived experiences. This is supplemented by quantitative analyses which identify their levels of burnout, engagement, and wellbeing. These mental health results are also compared to others with normative data and comparison samples. We interpret these mixed methods results by linking quantitative results to the qualitative themes.

PROCEDURE

Participants were contacted through the Fertility Nurses of Australasia (FNA). The FNA emailed the survey information to their Australian members and also featured the study on their website. Participants who clicked on the link were taken to a survey webpage. After providing informed consent, participants were invited to complete an online survey which took approximately 15 minutes. Participation was entirely voluntary, and no financial or other compensation was provided.

The study was approved by the University of Queensland Health and Behavioural Science Ethics Committee and followed the Reporting Standard Mixed Methods Article Reporting Standards (JARS-MMARS, under the EQUATOR reporting guidelines.

QUALITATIVE MEASURES

Participants responded to an open-ended question about stressors: 'We are particularly interested in aspects of your work that are stressful to you. Can you name at least two aspects of your work that you find most stressful?' They were also asked to provide examples: 'For the two stressful aspects you identified above, can you provide a specific example of when this happened and why it was stressful?'

QUANTITATIVE MEASURES

Burnout

The Maslach Burnout Inventory MBI was used to assess three dimensions of burnout.[25] It has 22 items rated on a 7-point frequency scale ranging from 0 = 'Never' to 6 = 'Every day'. There are three subscales: emotional exhaustion, depersonalisation, and personal accomplishment. The subscales had good reliability (observed $\alpha = .94$, $\alpha = .86$, and $\alpha = .82$ respectively). While the three subscale scores cannot be summed together, they can be used to categorise high, medium, or low levels of overall burnout using cut-off scores. A high degree of burnout reflects high scores on emotional exhaustion and depersonalisation, and low scores on personal accomplishment.

Work engagement

The Utrecht Workplace Engagement Scale (UWES) was used to measure work engagement; observed $\alpha = .91$.[26] It has 17 items and three subscales of vigour, dedication, and absorption. Items are measured on a scale ranging from 0 = 'Never' to 7 = 'Always, every day'. The scale has good internal consistency (observed $\alpha = .91$).

Wellbeing

The 14-item Mental Health Continuum-Short Form (observed $\alpha = .91$) asks participants to indicate how often they have experienced wellbeing symptoms in the last month.[27] Items are rated on a 6-point scale ranging from 0 = 'Never' to 5 = 'Every day' and summed to provide a total wellbeing score between 0 and 70 with higher scores indicating greater wellbeing. Designated categories also enable the classification of participants into one of three wellbeing categories: flourishing (high wellbeing), languishing (low wellbeing) or moderate mental health neither flourishing nor languishing.[27]

Demographics

We also asked participants a series of questions related to their age, gender, education level, years of experience as a Fertility Nurse, role, and whether they currently worked in a public or private facility. Age and years of experience were recorded in ranges (e.g., 45–56 years old) to protect participant anonymity.

DATA ANALYSIS

All data were de-identified, and participants were assigned a number to protect their anonymity.

Qualitative data – Reflexive Thematic Analysis

Qualitative data were analysed using Reflexive Thematic Analysis.[28,29] We utilised an inductive method; a 'bottom-up approach that lets the data drive the themes rather than fitting the data to existing theory. This implies an essentialist framework and experiential orientation, in that it 'gives voice' to Fertility Nurses' experiences reported in the data.[28]

Reflexive Thematic Analysis is an iterative process, requiring researchers to continually revisit and engage with the data to identify and interpret patterns of meaning.[29] The research team is situated as a central influence in the development of understanding and as such we note here key aspects of the research team's positionality.

The first, third, and fourth authors were female psychology researchers with no exposure to the inner workings of the fertility sector, but with extensive experience in mental health within the workplace, including healthcare settings. The second author is a female Clinical and Health Psychologist who specialises in Fertility Counselling. This provided insight into the workings of this sector and the experiences of nurses and patients. While such insight can bias results, we endeavoured to remain neutral and set aside personal views and reactions, to listen to the perspectives of the nurses.

Reflexive Thematic Analysis, as detailed by Braun and Clarke has six steps of analysis.[28] These were followed by the first and second authors. The first step was familiarisation with the data followed by the development of initial codes to note meaningful elements in the data. In the second step, the authors formally coded the stressors contained in the qualitative responses to identify the key stressors. In step three, codes were sorted into overarching themes and sub-themes which explained large sections of the data. Themes were identified at the semantic or explicit level due to the brevity of responses. In the fourth step, themes were reviewed and refined. Step five involved defining and naming the themes. For the final sixth stage, exemplar quotes were chosen to illustrate the themes.

We conducted a validity check through the use of a co-rater (the third author) to provide multiple perspectives. The co-rater independently identified the codes, themes and sub-themes. All coders then discussed the findings extensively to reach a final agreement. The whole research team participated in regular discussions to ensure consistency over the coding procedures, with excerpts of the responses reviewed to ensure adequate representation of the code recorded. Coding was completed when the research team reached agreement.

Quantitative data analysis

Quantitative data were analysed using descriptive statistics and t-tests to contrast fertility nurse results with normative data and comparison samples. We employed listwise deletion for handling missing data. This included participants in each analysis only if they had complete data for the specific variables involved.

RESULTS

PARTICIPANTS

Participants were Australian Fertility Nurses aged over 18. The FNA emailed the survey information to their 307 Australian members and of these, a total of 74 participants enrolled in the study. This represented 24% of the membership which is a good level of representation. Of the participants who started, 62 completed the entire survey, indicating a small attrition rate of 16%. Participants were all female, and the most common age range was 36–45. Most respondents had completed university (74.6%). The vast majority of participants worked in the private sector (96%) and the most common work experience range selected was 5–10 years. Further participant details are provided in the supplementary materials (Tabe S1).

QUALITATIVE RESULTS

Stressors

Through Reflexive Thematic Analysis of the qualitative data, we identified three core stressor themes: Interpersonal Stressors, Organisational Stressors, and Emotional Burdens. Thirteen sub-themes and 25 codes were identified within these three overarching Themes. These are detailed in Table 1 below and then discussed.

Interpersonal stressors

One of the most frequently articulated issues identified by 76% of Fertility Nurses were the interpersonal stressors experienced at work. Almost half of the nurses (48%) described challenging interactions with patients.

TABLE 1. FERTILITY NURSE STRESSORS AND PERCENTAGE OF PARTICIPANTS WHOSE RESPONSES RECEIVED THE CODE, SUB-THEME, AND THEME, WITH EXEMPLAR QUOTES

Core themes	Sub-themes	Codes	Exemplar quotes
Interpersonal stressors: (76%) Difficult conversations due to lack of co-operation or appropriate response from the other person either because they are unhelpful or don't communicate well	Difficult patients (48%)	Patients not following instructions (11%)	*'Clients that want to do their own thing, regardless of medical advice.'* (P42)
		Angry patients (13%)	*'Unsatisfied patients who direct negativity towards you.'* (P26). *'I have had patients scream and yell at me for something that I have had nothing to do with or something that is not directly happened because of something that I have done.'* (P43)
		Unreasonable expectations from patients (37%)	*'Setting/managing unrealistic patient expectations. I feel that despite statistics, many patients fail to realistically assess their chances of success in IVF…the patient can.'t understand why it didn.'t work and may be angry or unreasonably upset by the result. It can be very stressful to work with people who lack insight or understanding of their situation.'* (P28).
	Difficult colleagues (29%)	Interpersonal interactions with other colleagues (21%)	*'Working with a "prickly" staff member.'* (P35) *'With a small workforce personality clashes can make work difficult – I find myself avoiding people and places within the clinic.'* (P5).
		Poor communication from colleagues (13%)	*'A colleague is very loud and obnoxious, … rude to us and patients. Good friend of management and therefore nothing gets done about it.'* (P37)
	Difficult doctors (21%)	Poor communication from doctors (11%)	*'Poor/difficult communication with doctors.'* (P32) *'Most days a docto or patient will make unreasonable demands. This can have a massive impact on my day.'* (P19)
		Doctor conduct (16%)	*'Doctors constantly cancelling clinics at the last minute.'* (P33) *'Taking direction from doctors and then have them change their mind or forget and make you look like an idiot.'* (P45)
Organisational stressors: (77%) Related to the system in which the nurses work and the actual conditions that exist	Role issues (74%)	High workload (53%)	*'Everyday my workload is huge …… and I struggle to complete it within work hours often leading to many hours of overtime.'* (P72) *'Unable to take any time off (annual leave) due to staffing constraints and workload.'* [5] *'There is no nurse to patient ratio in our EBA and I feel that current patient loads are unreasonably high… It is impossible to deliver high level care to so many patients.'* (P28)
		Poor clarity of roles (6%)	*'Doctors and others in the office expecting the nurses to attend to administration duties instead of allowing us to focus on nursing duties.'* (P27)
		Time constraints (26%)	*'Not enough time to finish tasks.'* (P40) *'Too much work to do for the amount of time in the day and demands of other people (doctors, patients).'* (P22)
		Complexity of work (8%)	*'Everyday the primary care nurse is responsible for – book treatment cycles, scheduled nursing appointments, see patients for nursing appointments, calling patients with transfer times, calling patients with fertilisation results, calling patients with cycle results and further instructions, calling patients with trigger details, following up general inquires etc. It is both stressful and very unsatisfying to not be able to give patients the level of care and attention we feel they deserve.'* (P28).
		Feeling restricted by services (13%)	*'I feel the patients need a lot more information about how their cycles work, and lifestyle changes that could assist their fertility. This is not really encouraged by management.'* [37] *'I get frustrated/annoyed when the constraints of our service doesn't allow us to offer treatment to customers/ clients.'* (P34)

TABLE 1. FERTILITY NURSE STRESSORS AND PERCENTAGE OF PARTICIPANTS WHOSE RESPONSES RECEIVED THE CODE, SUB-THEME, AND THEME, WITH EXEMPLAR QUOTES (CONTINUED)

Core themes	Sub-themes	Codes	Exemplar quotes
Organisational stressors: (77%) Related to the system in which the nurses work and the actual conditions that exist (continued)	Staffing issues (24%)	Stress from inexperienced colleagues (10%)	*'Use of casual inexperienced nursing staff to fill vacancies and employment of grad (graduate) nurses and enrolled nurses as a cheap measure to fill gaps in staffing which increases the workload of existing staff as they have to upskill the nurses…'* (P47)
		Understaffing (15%)	*'Short staffed – most days are busy and we work on minimum staff, with very little back up for sick or annual leave.' (P53)* *'Staffing level – working for private enterprise expected to provide high level of service to patients with minimal staff without systems in place to support this.'* (P41)
		Dysfunctional teams (5%)	*'Some staff not working as part of a team… Some staff not pulling their weight at work.'* (P4)
	Invalidation (45%)	Unsupportive management (32%)	*'I feel that there is a lack of care by management and very undervalued by management. I am unhappy with having to work extra hours that I am expected to do so my family then miss out on my time. I feel there is an extreme lack of positive reinforcement in the workplace .'* (P25) *'Management and the doctor is 100% behind the patients and not his staff.'* (P57)
		Remuneration issues (8%)	*'Asking for a pay-rise and being emotionally blackmailed, constant mental degradation, not being recognised for my skillset and clinical experience. All subjects intermingle by paying me less and expecting more skill and experience for it, meantime making profit from clients with fertility issues.'* (P74).
		Feeling devalued (18%)	*'Working for a company that doesn't value its employees.'* (P17)
	Physical work environment (5%)	Workspace environment (5%)	*'No future planning, limited resources. Small work office space with several nurses accompanying it difficult hearing phone conversations with ambient noise, temperature control etc.'* (P47)
	IVF as a business not a service (8%)	Predominance of business model (8%)	*'Pressure from management to constantly "drive" the business model. It has become about money, not patient wellbeing.'* (P12)
	Documentation (6%)	Burden of documentation (6%)	*'Paperwork, audits, quality management rubbish that goes on and on.'* (P47)
Emotional burdens: (47%) Emotionally challenging tasks and difficult feelings	Treatment failure (19%)	Burden of breaking bad news (19%)	*'Giving bad news to already stressed highly emotional patients.'* (P65) *'Having to care for a couple who had a confirmed clinical pregnancy at 7 weeks, and then no foetal heartbeat detected at 9 week scan. This was obviously incredibly stressful for them, and myself too.'* (P49)
	Patients' demands (19%)	Burden of dealing with emotional or demanding patients (19%)	*'When you have contact with patients who have suffered an extreme loss eg miscarriage, termination of pregnancy. Knowing how to respond for that particular person, "saying the right thing" and how to specifically provide support in a compassionate manner.'* (P21)
	Capacity to provide optimal care (21%)	Responsibility of providing optimal care (21%)	*'My own anxiety feeling I am not skilled enough at the same time knowing this to be incorrect.'* (P35) *'Not being able to help all my patients.'* (P4)
	Emotional entanglement (16%)	Emotional entanglement in patients' experience (16%)	*'Having a caring, compassionate personality that wants to be patient advocate.'* (P74) *'Emotional stress and anxiety, constantly exposed to the raw emotions of desperate patients – there is no support or debriefing available to nurses.'* (P12)

Note: Participant numbers along with their demographics are provided in the supplementary materials.

> *'Many clients have an attitude that the nurses are there to do everything for them and also to blame if things do not go to plan. Clients often have an unrealistic view of IVF and it's outcomes which makes them very difficult to deal with at times. … We get a number of hostile, impatient and aggressive clients. Having said that we also get some absolutely lovely ones.'* (IVF Nurse Coordinator, 10–15 years experience)

Nurses often described 'difficult' patients:

> *'Dealing with difficult patients who continually complain about everything despite your best efforts' (IVF Nursing Team Leader, 10–15 years experience). Nurses spoke about patients failing to follow instructions and being blamed for treatment outcomes: 'I also have had problems with patients that do not listen or trust what I have told them. This can be very stressful as it is usually a situation that is out of my control.'* (Senior IVF Nurse Coordinator, 3–5 years experience)

Many nurses (29%) also spoke about the stress of working and communicating with colleagues. Some described a workplace culture of 'bitching and gossiping' (IVF Nurse Coordinator, 5–10 years experience) or overt animosity between team members:

> *'My colleague is often brusque/ aggressive in her manner to her co-workers and sometimes patients; I want to tell her to "piss-off".'* (A/Nurse Unit Manager, 15+ years experience)

Participants often felt unsupported by their clinic management in dealing with difficult colleagues:

> *'Animosity between staff members. No support from management. Ie -unsure on a particular result, asked for help and no support given from nurse manager. Had to speak with patient about something I felt was outside of my scope.'* (IVF Nurse, 1–3 years experience)

Many nurses (21%) described stress associated with working with impatient and overly demanding doctors, who increased nurses' workload and role scope. For example:

> *'Doctors and others in the office expecting the nurses to attend to administration duties instead of allowing us to focus on nursing duties.'* (IVF Nurse, 5–10 years experience)

Other responses described abusive behaviour and unprofessional conduct:

> *'A doctor we work closely with will regularly yell and swear at us – even if the situation is not related to our nursing work in any way and when we bring it up with management we are told it is not worthwhile to complain'.* (Senior IVF Nurse Coordinator, 10–15 years experience)

Organisational stressors

Fertility Nurses described organisational factors as their most common stressor (77% of respondents). The most frequently cited stressor in the entire study was workload. Fifty-three per cent identified this as a problem, e.g.: 'High workload is everyday' (Nurse Unit Manager, 10–15 years experience) and this affected patient care:

> *'I feel that current patient loads are unreasonably high. It is impossible to deliver high level care to so many patients.'* (IVF Nurse, 1–3 years experience)

Many respondents (26%) also indicated time shortages did not allow for the complexity of the treatments:

> *'The average time allocated to a 1st IVF meeting is 60 mins. I always take 75–90 mins to complete these meetings no matter how I try to alter my plan for discussions.'* (IVF Nurse Coordinator, 10–15 years experience)

Nurses emphasised they had to 'juggle' patient administration with complex treatment procedures and clinic processes. Other nurses felt overwhelmed by the knowledge they needed to acquire, combined with insufficient time or opportunity to access training. For example:

> *'Learning new job with no training manual or attempts to provide training or reimbursement for training courses.'* (IVF Nurse Coordinator, less than 1 year experience)

Participants noted how organisational decisions impacted clients. For example, some participants indicated that IVF clinics focused too much on generating profit for the business and not enough on patient care:

> *'Pressure from management to constantly "drive" the business model. It has become about money, not patient wellbeing.'* (Nurse Manager, 10–15 years experience)

Other respondents described feeling that patients were being disadvantaged by the limited services their clinics offered:

> *'I get frustrated/annoyed when the constraints of our service doesn't allow us to offer treatment to customers/clients.'* (Associate Nurse Unit Manager, 15+ years experience)

Many nurses (32%) indicated they felt under-appreciated by their organisations' management team. They reported feeling that their contributions were either undervalued or under-remunerated. For example:

> *'I feel that there is a lack of care by management and very undervalued by management…'* (IVF Nurse Coordinator, 5–10 years experience)

Emotional burdens

Almost half of nurses (46%) described the emotional burdens that resulted from the emotionally challenging tasks they undertook. For many of the respondents, the difficulty of delivering bad news was very stressful:

> *'Recently had to give out 6 pregnancy results and all 6 were negative. 6 phone calls in a row, 6 really upset, sometimes angry pts (patients) who want answers that you can't give. Some of them hang up mid sentence because they are so upset but you may have to ring them back to give them drug instructions or whatever and you know they don't want to talk to you.'* (IVF Nursing Team Leader, 10–15 years experience)

For some, these emotional burdens were exacerbated by a lack of support:

> *'Emotional stress and anxiety, constantly exposed to the raw emotions of desperate patients – there is no support or debriefing available to nurses.'* (Nurse Manager, 10–15 years experience).

Many nurses (21%) also noted the emotional burden that came from providing sub-optimal care due to workplace constraints. This was experienced as a sense of personal or professional inadequacy. For example:

> *'My own anxiety feeling I am not skilled enough at the same time knowing this to be incorrect'.* (IVF Nurse Coordinator, 3–5 years experience)

In some instances, there was an emotional connection between nurses and patients. Nurses expressed deep empathy for patients' which could result in large emotional swings:

> *'We have celebrated a positive pregnancy with a couple after numerous IVF journey's – with that comes a new set of happy emotions. Then at a follow up ultrasound there is no foetal heart rate detected. With that comes a completely new set of emotions. Then the next patient comes through the door and that brings another set of emotions depending where they are on their journey. Some days it can be an emotional roller coaster with a change in emotions every hour.'* (IVF Nurse Coordinator, 10–15 years experience)

For others, these emotional experiences were expressed as anger towards the patient:

> *'When the patients a[re] crying in the toilet at their workplace acting like a 3 year old child because she didn't receive her first donor sperm choice, and blames you even though its not your fault.'* (IVF Nurse Coordinator, 3–5 years experience)

Overall, emotional burdens, coupled together with organisational and interpersonal stressors were the key issues highlighted by Fertility Nurses. The experience of these stressors can be linked to their mental health results which are explored below.

QUANTITATIVE RESULTS

Mental health outcomes

Descriptive statistics and t-tests were used to analyse the quantitative mental health data and contrast the results of Fertility Nurses with comparison groups. We report results for burnout, work engagement, and wellbeing.

Burnout

No respondents reported high overall burnout – represented by the presence of high Emotional Exhaustion, high Depersonalisation, and low Personal Accomplishment – but 46% were at high risk of burnout on one of the three subscales. For example, 49% experienced moderate to high Emotional Exhaustion, 61% reported moderate to high Depersonalisation, and 30% reported low to moderate Personal Accomplishment (see Table 2).

TABLE 2. FREQUENCY OF FERTILITY NURSES IN BURNOUT CATEGORIES OVER THE THREE BURNOUT SUBSCALES

Category	Emotional exhaustion		De-person-alisation		Personal accomplishment	
	n	%	*n*	%	*n*	%
Low	34	51	26	39	8	12
Moderate	15	22	17	25	12	18
High	18	27	24	36	47	70
Total	**67**		**67**		**67**	

We compared the Fertility Nurses to three other groups: registered nurses in Victoria with the Australian Nursing Federation medical normative data, and overall normative data.[30,31] The Fertility Nurses differed significantly from all three groups in that they had lower emotional exhaustion, higher personal accomplishment, and higher levels of depersonalisation (see Table 3).

Work engagement

Regarding work engagement, the majority of Fertility Nurses reported average to high dedication and absorption. The poorest scores were seen on the vigour sub-scale where 35% of participants reported very low to low vigour (See Table 4).

Using t-tests, we compared the results of the Fertility Nurses to previous research by Brunetto et al. (2013) who studied engagement among Australian and US nurses. The Fertility Nurses scored significantly lower on work engagement compared to the Australian nurses ($t = -2.45$, $p < .05$) but there was no significant difference with US nurses ($t = -0.58$; see Table S2 in the supplementary materials for the full results).

Wellbeing

For overall wellbeing, there was only a small percentage (3.1%) who were 'languishing' (low wellbeing). Participants who were 'flourishing' (high wellbeing) and those with moderate mental health, each accounted for 48% (see Table 5). This indicates a moderate to high level of wellbeing among respondents.

There is no normative data or nursing results available for the MHC-SF wellbeing scale, so we compared the wellbeing of the Fertility Nurses to three university student groups[32]. The IVF Nurse participants had significantly lower wellbeing than students on all three scales (emotional, social and psychological wellbeing) with only one exception – the Fertility Nurses had similar levels of social wellbeing compared with Iranian students (see Table 7).

TABLE 3. BURNOUT DESCRIPTIVE STATISTICS AND COMPARISON OF IVF NURSE RESULTS WITH GENERAL NURSES AND NORMATIVE DATA

Burnout subscale	Population	*n*	M	SD	Comparison t-test
Emotional exhaustion	Fertility nurses	68	17.96	11.58	
	Nurses (Vic, Australia)	571	21.84	11.40	2.65**
	Normative (medical)	1,104	22.19	9.53	3.51***
	Overall normative sample	**11,067**	**20.99**	**10.75**	**2.32***
Depersonalisation	Fertility nurses	68	11.13	7.96	
	Nurses (Vic, Australia)	571	5.81	5.34	–7.32***
	Normative (medical)	1,104	7.12	5.22	–5.93***
	Overall normative sample	**11,067**	**8.73**	**5.89**	**–3.35*****
Personal accomplishment	Fertility nurses	68	39.81	6.44	
	Nurses (Vic, Australia)	571	37.56	6.88	–2.57-
	Normative (medical)	1,104	36.53	7.34	–3.60***
	Overall normative sample	**11,067**	**34.58**	**7.11**	**–6.05*****

Note: Comparisons to IVF Nurse group calculated through t-tests: *= p <.05, **= p <.01, ***= p <.001

TABLE 4. FREQUENCIES OF WORK ENGAGEMENT CATEGORIES ACROSS THREE SUBSCALES

Category	Vigour		Dedication		Absorption	
	n	%	*n*	%	*n*	%
Very low	9	14	1	2	1	2
Low	14	21	0	0	2	3
Average	22	33	22	33	16	24
High	15	23	32	49	34	52
Very high	6	9	11	17	13	20
Total	**66**		**66**		**66**	

TABLE 5. WORK ENGAGEMENT DESCRIPTIVE STATISTICS AND COMPARISON OF IVF NURSE RESULTS WITH GENERAL NURSES AND NORMATIVE DATA

	n	M	SD	Comparison t-test
Fertility nurses	67	4.38	1.02	
Australian nurses	510	4.69	0.71	–2.45*
USA nurses	718	4.45	0.78	–0.58

Note: Comparisons to IVF nurse group calculated through t-tests: *= p <.05, **= p <.01, ***= p <.001

TABLE 6. FREQUENCIES OF MHC-SF WELLBEING CATEGORIES

Category	*n*	%
Languishing	2	3
Moderate mental health	31	48
Flourishing	31	48
Total	**64**	

TABLE 7. WELLBEING DESCRIPTIVE STATISTICS AND COMPARISON OF IVF NURSE RESULTS WITH THREE STUDENT GROUPS

	n	Emotional wellbeing			Social wellbeing			Psychological wellbeing		
		M	SD	t-test	M	SD	t-test	M	SD	t-test
Fertility nurses	66	10.70	3.52		14.97	5.80		20.91	5.75	
Dutch students	308	13.40	1.01	11.50***	16.20	0.98	3.51***	25.30	0.93	12.71***
South African students	328	13.80	0.72	14.60***	18.00	0.90	8.98***	28.70	0.75	23.68***
Iranian students	484	12.00	1.23	5.94***	15.20	1.15	0.77	24.00	1.10	10.55***

Note: Comparisons to IVF nurse group calculated through t-tests: *= p <.05, **= p <.01, ***= p <.001

DISCUSSION

Fertility Nurses are a distinct group of professionals who fill an important role in fertility care. Our study provided much-needed insight into their lived experiences – highlighting key stressors and mental health outcomes.

STRESSORS

The key stressors identified by the nurses fall into the three themes of Interpersonal stressors, Organisational Stressors, and Emotional Burdens. Together these results paint a picture of Fertility Nurses who frequently feel treated poorly by management, patients, and colleagues, while also having to take on large workloads in an emotional context.

Interpersonal stressors

Interpersonal stress resulted from a perception that other people (doctors, colleagues, or patients) were being difficult, unreasonable, or simply poor communicators. Three-quarters of respondents commented on these issues, highlighting significant problems in interpersonal relationships. This is consistent with past research noting Fertility Nurses must resolve competing demands from both doctors and patients.[13] Nurses' most common interpersonal stressor (46%) was with 'difficult patients', some of whom directed their frustrations at staff. Past research and our results indicate this can lead to nurses experiencing intense feelings such as frustration, anxiety, guilt, and dislike.[1] Working with fertility issues can lead to emotionally fraught interactions between patients and nurses, but our research and past studies indicate many staff in fertility clinics feel inadequately trained to deal with patient complaints.[12]

It was concerning that a fifth of nurses reported difficult interactions with angry and demanding doctors. This may align with the power imbalances noted between doctors and nurses in healthcare more generally and which could be exacerbated in fertility clinics where the doctor can be the clinic director and owner – concerned with financial outcomes.[14] Our study also found that conflict with colleagues was an equally frequent stressor. This points to problems within teams and a lack of support from management.

Organisational stressors

Organisational challenges attracted the most comments with many nurses commenting on high workloads, time constraints, lack of role clarity, complex work, and the restricted services they could offer their patients. The high workload stems partially from the continually expanding role of fertility nurse which participants felt detracted from their nursing responsibilities.[5–7] Almost half participants felt their work was not sufficiently valued and identified specific issues around unsupportive management, insufficient remuneration, and feeling devalued. They noted that there was insufficient organisational support, training, or leadership from management to help manage their load and improve patient care. This lack of organisational support led to a perception that clinics provide inadequate care for patients. Ethical concerns also arose from the business model which 'prioritised profit over patient care' and 'undervalued nurses' contributions; reflecting broader concerns around the ethics of the fertility industry.[2,33] In light of the many organisational issues, it was concerning to note that respondents indicated a lack of effective complaint mechanisms to bring about change.

Emotional burden

Around half of the respondents identified issues of emotional burdens. These included the burdens of breaking bad news, dealing with emotional patients, emotional entanglement, and the feeling of providing suboptimal care. Many participants described the heavy burden of managing patients' emotions and sometimes noted they were unable and undertrained to respond adequately. The nurses experienced a high emotional cost from delivering bad news to patients and this was exacerbated by the lack of debriefing options available. Some respondents experienced this emotional burden as feelings of anger or frustration towards 'difficult' patients, connecting to the depersonalisation elements of burnout. These emotional burdens alongside the organisational and interpersonal issues, can be linked to the mental health outcomes investigated.

MENTAL HEALTH OUTCOMES

The mental health results were mixed. While no participants reported high burnout on all three subscales (emotional exhaustion, depersonalisation, and personal accomplishment), around half were high on at least one of the three subscales.

Almost two-thirds of participants reported moderate to high depersonalisation, which involves cynical, callous, or excessively detached reactions. The levels of depersonalisation in the current study are higher than those in general healthcare worker comparative data sets. Depersonalisation is exemplified in our qualitative data where nurses discussed 'difficult', 'demanding' and 'unreasonable' patients – indicating a level of detachment and depersonalisation. Together, these results speak to high levels of compassion fatigue – where caregivers absorb the distress, anxiety, and fears of the patients.[34] The results align with past research on the noncaring (emotional distancing) coping mechanism employed by Fertility Nurses which can be effective in the short term,[15,16] but is likely to cause distress in patients,[17,18] and could lead to lower pregnancy success rates,[12] and decisions to end treatment or change clinics.[1] So, the high levels of depersonalisation noted in our study may impact both patient outcomes and organisational goals.

In addition to high levels of depersonalisation, nearly half of the participants experienced moderate to high emotional exhaustion stemming from intrapersonal strain and depleted emotional reserves.[35] This aligns with our qualitative results which highlighted frequent interpersonal stressors and the heavy emotional burdens of fertility nursing; particularly the burden of delivering bad news.

Interestingly, the majority of the participants reported high levels of personal accomplishment – indicating feelings of competence, self-efficacy and productivity in work.[36] Their levels of personal accomplishment were significantly higher than comparison medical samples. This is good news considering the nurses also described a lack of training, support, and validation.

Regarding work engagement, our results indicate that the vast majority of participants had average to high dedication and absorption. However, when compared to other Australian nurses, the participants had lower overall engagement. The poorest scores were seen on the vigour sub-scale where around a third of participants reported very low, to low vigour. This outcome links to the high levels of emotional exhaustion noted above and may be caused by the emotional burdens described by respondents.

Wellbeing was a noted issue with the current study. Participants were significantly lower on all three scales (emotional, social and psychological wellbeing) compared to comparison samples of students. However, when examining overall wellbeing, only a small percentage of respondents were 'languishing' (low wellbeing) with the remainder being split between 'moderate' and 'flourishing' categories.

IMPLICATIONS

Our results have important implications for nurses, clinics, and the wider fertility care sector. For individual nurses, findings from our research can be used to normalise stressors and prompt effective responses. Sharing common stressors is beneficial among health practitioners in general.[37] Fertility Nurses may particularly benefit from hearing about some of the less researched stressors such as conflict with colleagues and patients. It may also help nurses to be aware that depersonalisation of patients is common but can have unhelpful outcomes such as reduced treatment efficacy and patients leaving treatment.[15,16] If nurses can recognise their compassion fatigue as it is occurring, they may be in a better position to seek help. Therapeutic approaches may help staff to restore empathy for patients. For example, there is growing evidence that mindfulness interventions may improve wellbeing, empathy and quality of care in healthcare professionals, which can in turn reduce burnout.[1,38] While Fertility Nurses can undertake some actions to improve their own wellbeing, it is important to remember that many of the stressors were organisational and structural and as such should be addressed at that level, rather than giving more work to nurses.

IVF clinics can use the current results to inform improvements in organisational structures and staff support. Our respondents noted the ever-expanding responsibilities of Fertility Nurses. While it may be financially tempting for organisations to give staff more and more work, clinic management should consider the impact this has on staff burnout, turnover, and poor patient care – leading to hidden costs over time. When nurses are tasked with more technical medical roles, management could consider reducing their administrative tasks. Where the roles of nurses do expand, they should be given the time and support to undertake appropriate training and professional development. Managing nurses' workloads better may include allowing more breaks and the establishment of realistic staffing ratios. Workload audits could be used to examine exactly what nurses are expected to do in a day, and how much they can actually achieve before either their standard of care declines or the nurse is adversely impacted.

Many nurses felt like the sole staff member on the emotional rollercoaster of patients' experiences. To alleviate this, clinics could make better use of mental health support for both patients and staff. This could include patient support by psychological professionals who are better trained to manage emotional distress and mental health issues.[1] It would also ease the burden of delivering bad news for nurses who have many other medical roles to fill. For staff, debriefing sessions after difficult encounters could reduce the emotional distress and burnout described by nurses. This could include the provision of clinical supervision; which has been shown to lower burnout and increase job satisfaction and staff retention.[39] Debriefing could also involve mental health professionals, this could help Fertility Nurses cope with the rising and falling emotions common to fertility care and help them develop strategies to deal with negative patient emotions.[1]

Overall, the stressors discussed in our paper will be best addressed by good leadership responses, which seemed to be lacking for many Fertility Nurses. Practitioners leading IVF clinics should be aware of their organisational and management responsibilities, in addition to their medical role. Helpful responses could include management training or hiring additional staff to take on management roles. It is important that clinic leaders understand and mitigate the stressors faced by Fertility Nurses if they are to avoid staff burnout and turnover. While hiring additional staff or providing better organisational support may be costly, it will likely reduce staff stress, turnover, and detrimental effects on patient care, improving the commercial returns of the clinic in the long term.

While many changes can be made at the organisational level, there are also improvements that could be undertaken within the wider IVF sector. Power imbalances that are commonly documented between doctors and nurses seemed to be heightened in fertility clinics.[14] Given the high level of stress that comes from difficult or abusive doctors, it is important that nurses can access an independent complaints system. It may also help nurses to have better representation in peak bodies so they can share their frontline experiences and seek solutions to the stressors they face as a group. Given the important roles nurses play within the fertility sector, the development of staff-care resources and guidelines could also be beneficial for nurses while providing clear guidance for clinics.

STRENGTHS LIMITATIONS AND FUTURE RESEARCH

The current research focuses on an under-studied group and uses a mixed methods approach to investigate the experiences of Fertility Nurses. There are limitations, however, in that the quantitative data was cross-sectional and cannot point to causality. This could be resolved with future longitudinal studies. Another limitation relates to sampling in that we used convenience sampling and had a relatively small sample. While this sample provides a good representation of Fertility Nurses in Australia, it is not clear whether these results can be generalised outside of this context and future studies could seek out the views of Fertility Nurses in different countries. The comparison samples we used were existing data and future research could compare Fertility Nurses to a matched sample of other healthcare workers.

CONCLUSION

Our study used a mixed methods approach to examine the unique mental health implications and stressors of Fertility Nurses. This captures the views of an under-researched group and offers a nuanced view of Fertility Nurses' experiences. Results indicate that nurses face a wide range of interpersonal stressors, organisational stressors, and emotional burdens. This links to the quantitative result which shows many Fertility Nurses are at risk of burnout and have low levels of wellbeing and workplace vigour. At its core, this study provides a platform to share Fertility Nurses' experiences of stressors and mental health outcomes. For individual Fertility Nurses, findings from our research can be used to normalise stressors and prompt effective responses. Organisations can use nurses' views to improve structures and staff support. In the wider IVF sector, results can inform staff-care resources and better representation. Given the importance of Fertility Nurses to fertility care, efforts to reduce staff stress can have flow-on benefits for patients and treatment efficacy.

Data availability: The data that support the findings of this study are available on request from the corresponding author, [TY]. The data are not publicly available due to restrictions e.g. their containing information that could compromise the privacy of research participants.

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