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Perceived challenges of working in a fertility clinic: A qualitative analysis of work stressors and difficulties working with patients

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Running title: Challenges of working in fertility clinics

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Abstract

Study question: What are some of the challenges of working in a fertility clinic?

Summary answer: The most frequently mentioned challenges were workload (e.g., high time pressure) and patient-related sources (e.g., unrealistic expectations).

What is known already: One study showed a too high workload, worry about handling human material and low success rates were main stressors in fertility clinics.

Study design, size, duration: An online open-ended survey inviting participants to respond to seven questions was distributed to 5902 members of the European Society for Human Reproduction & Embryology (ESHRE, October 2010). Questions asked participants to describe the top three factors that made (1) their work stressful (hereafter "Work stressors") and (2) working with patients difficult (hereafter "Perceived sources of difficulties"), and (3) to choose from these factors which top three issues they would be willing to attend a workshop to resolve (hereafter "Workshops"). A qualitative content analysis using inductive coding for each question meaningful themes from the text replies, at three levels of increasing abstraction (lower and higher categories, general themes).

Participants/materials, setting, methods: The final sample comprised 526 respondents (8.9% participation rate). Respondents were predominantly clinicians (41.3%, n=216) or embryologists (35.5%, n=186) from European countries (73.0%, n=386).

Main results and the role of chance: The number of replies generated for each question was 1421, 1208, 907 for the "Work Stressors", "Perceived sources of difficulties" and "Workshop" questions, respectively. The most often reported higher order categories of Work Stressors were: 'Time & Workload' (61.6%, e.g., time pressure), 'Organisation, Team & management issues' (60.4%, e.g., team conflicts) and 'Job content and work environment' (50.3%, e.g., burdensome administration). For "Perceived sources of difficulties" these were: 'Patient-related sources' (66.7%, e.g., unrealistic expectations), 'Communication & Counselling with patients' (33.7%, e.g., strained information-giving) and 'Misinformation and lack of knowledge' (27.8%, e.g., Dr. Google). Finally, the topics participants would be willing to address in Workshops were: 'Communicating and Counselling with Patients' (24.9%), 'Dealing with Patient-related sources' (19.6%) and Clinical topics (19.6%). Three general themes emerged. First, a theme of 'time and time trade-offs' expressed the oft-mentioned need to trade-off time spent on one activity (e.g., managing patient demands) against another activity (e.g., clinical workload, administration) with stress level dependent on the efficacy of trading-off. Second, the theme of 'multifactorial causes' of challenging patient interactions that embodied the many sources of difficulties working with patients. What staff would be willing to address in workshops was indicated by the final general

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theme of 'a little of everything', which linked to the need for multiple workshops addressing the multi-factorial nature of challenges in fertility clinics.

Limitations, reasons for caution: Only about 10% of members receiving the survey participated. The work was limited to the stressful and difficult aspects of working in fertility clinics, which may give a more negative impression than if questions about the rewards and benefits had also been included.

Wider implications of the findings: The nature of stressors and difficulties of working in a fertility clinic are consistent with models of occupational stress and patient complexity. Specialised psychologists, management consultants and other occupational experts could assist fertility teams in overcoming many of the challenges. More research is required on the effect of encountered work stressors and perceived sources of difficulties in working with patients on staff and patient outcomes.

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Introduction

The Integrated Approach to Fertility Care proposes that taking account of the needs of fertility clinic staff could have benefits on patient quality of life and compliance in fertility clinics because patients and staff have reciprocal influences on each other's wellbeing as shown in other areas of health (Boivin et al., 2012). According to the cognitive model of stress and coping, stress occurs when there is a perceived imbalance between the demands of the situation and the resources (e.g., personal, social, financial, etc.) available to manage these demands (Lazarus & Folkman, 1984). This perceived imbalance converts demands into stressors and produces stress reactions. Two work stressors in health contexts are high demand-low control working conditions (e.g., excess workload and responsibility, role conflict) (Henry & Evans, 2008) and challenging patient interactions (e.g., emotive exchanges, demanding, poor response) (Peek et al. 2009; Loeb et al., 2015). Stress reactions at work are referred to as occupational stress. Occupational stress can manifest in negative emotions (e.g., feeling tense, Albini et al., 2011), physical stress (e.g., chest pain, Kuper et al. 2002), behavioural problems (e.g., disruption in sleep, Greubel & Kecklund, 2011) and loss of job satisfaction or motivation (Carpenter et al. 2003) all of which can contribute to lower wellbeing in staff. A review of 18 studies showed that poorer doctor wellbeing was associated with higher likelihood of doctors delivering suboptimal care (e.g., inadequate discharge, omitting relevant diagnostic tests, medication errors) and lower likelihood of delivering better quality care (e.g., providing relevant procedural information, more open with patients and more attentive to psychosocial aspects, not over prescribing) (Scheepers et al., 2015). In contrast, higher doctor wellbeing was associated with higher patient satisfaction and better compliance. From these results, Scheepers et al. (2015) argued that stress reactions impact healthcare provision and patient outcomes because medical staff with less stress and more positive emotions has more energy and mental resources to direct their full attention to patients. Identifying sources of occupational challenges in fertility clinics is therefore a first step to studying staff wellbeing and, in due course, its effect on patient outcomes in fertility clinics.

One could expect that work challenges encountered in other health domains would transfer to the fertility clinic context (as patients are patients). However, replication is useful to determine whether similar problems occur in a health domain and to motivate further research and action to address work challenges. Not much is known about staff stressors in fertility clinics. In a survey study, Harris and Bond (1987) found that UK doctors performing in vitro fertilisation (IVF) in the National Health Service reported more anxiety than non-IVF doctors. The main stressors reported were high workload and time pressure, fear of making mistakes and accepting the low success rates. However, the Harris and Bond study was conducted more than 25 years ago

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and its findings may no longer be relevant to present fertility healthcare teams. In another survey of 112 fertility clinics in the USA Gerson et al. (2004) found that administrators and staff were more likely than physicians to agree with the statement that the clinic environment was stressful. However, the stressors contributing to these perceptions were not examined. To date it is not known whether staff stress would also be associated with patient outcomes or healthcare provision in fertility clinics. However, we do know that patients cite negative experiences of care as a reason for discontinuing fertility treatment (Gameiro et al., 2012).

The study aim was to understand better the challenges of working in a fertility clinic. The objectives were to identify the work stressors and sources of difficulties working with patients that were perceived to make working in a fertility clinic demanding and which staff would be willing to resolve. These data could inform future studies on staff wellbeing, its effect on patient outcomes and development of occupational interventions to address work challenges in fertility clinics.

Methods

Design

We chose a qualitative analytic approach for several reasons. The lack of detail in prior fertility studies (Harris & Bond, 1987; Gerson et al., 2004) made it impossible to generate a quantitative structured survey listing a comprehensive list of specific sources of stress or perceived difficulties working with patients encountered in fertility clinics. To generate a more detailed understanding we therefore needed a qualitative approach. However, to ensure our understanding was broad, comprehensive and inclusive we wanted many professionals from many clinics to participate, which precluded using intensive qualitative designs (e.g., face to face interviews, focus groups) in favour of the open-ended online survey we used.

Participants

The sample comprised 526 fertility clinic staff, members of the ESHRE able to understand English. ESHRE membership was about 5902 members (C. Plas, personal communication, December of 2012). The number of IVF clinics in Europe at that time was 1314 (Kupka et al. 2016).

Materials and procedure

ESHRE circulated an email inviting its members to complete the survey by clicking the hyperlink in the email (distributed October 2010). The survey asked participants to indicate their profession, country of practice and to allocate a percentage of work hours to specific activities (i.e.,

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clinical/laboratory, clinical/patient care, administration, teaching, and research duties) to a maximum of 100% work time. The survey asked respondents about the top three factors that made (a) their work stressful (hereafter "Work Stressors") and (b) working with patients difficult (hereafter "Perceived sources of difficulties"), and to state (c) for which of these factors they would be most willing to attend a workshop to resolve (hereafter "Workshop"). These questions were open-ended. The respondents typed in their reply in a text box that allowed an unlimited number of characters. Participants had to click the 'submit' button for their responses to be recorded. The study received ethical review and approval from the School of Psychology Ethics Committee, Cardiff University.

Data Analysis

A total of 532 participants submitted their survey but data screening showed that five responses were invalid due to significant missing data and one being a duplicate (final N=526). Content analysis within a grounded theoretical framework was used for textual analysis according to Silverman (2006) and Henwood and Pidgeon (1992). Respondents could name up to three factors to each question (i.e., Work stressors, Perceived Sources of Difficulties, Workshop), meaning that each participant could contribute up to nine replies to the group data. The first step in the analysis was to check that each reply had text that could be coded. Inductive coding was then applied to each question separately, using only replies to that question. Specifically, two independent researchers analysed the replies and extracted 'lower-order categories' that expressed a similar concept or meaning (e.g., 'lack of time', 'time shortage'). A reply could contain more than one lower-order category (maximum of two). This inductive coding was continued until no new lower-order categories emerged for that question, and all replies were fully coded with the derived categories (data saturation). In the next step, the researchers grouped thematically related lower-order categories into more abstract 'higher order categories' through similar inductive coding. A 'general theme' for each question was then generated from the lower and higher order categories and their relation to each other, which expressed the overarching idea to emerge for that question.

To assure trustworthiness of data analysis two researchers coded the data. The two coders reviewed and discussed their coding until consensus was reached or it was clear that consensus could not be achieved. Emergent codes were presented to the broader research team for clarity of names and labels. Inter-rater agreement was assessed using Kappa coefficient. Kappa coefficients for agreement on lower order categories between the two coders were: 0.79 for Work Stress, 0.89; for Perceived sources of difficulties, and; 0.89 for Workshops. For agreement on the higher order categories Kappas were: 0.96 for Work Stress; 0.94 for Perceived sources of difficulties, and; 0.94 for Workshops.

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All textual replies were entered in Statistical Package for Social Sciences (SPSS). Descriptive statistics were used to provide frequency of respondent characteristics and of categories. Respondents were coded as having 'ever mentioned' a category when the category code was assigned to any of their replies for the question.

Results

The participation rate was 526/5902 (8.9%). Table I shows sample characteristics. The number of replies for each question was: Work stressors (Q=1421), Perceived Sources of Difficulties (Q=1208) and Workshop (Q=907). Due to space constraints only key findings and illustrative quotes are presented in Table II. Supplementary Tables I to III show all lower and higher categories extracted for each question.

I. Work Stress: "What are the top three factors that make your work stressful?"

A total of 37 lower order stress categories emerged and these were grouped into 11 higher order thematically related stress categories. Six participants reported not experiencing any stress whereas 39.4% (n=560/1421) of replies referred to multiple lower order categories (i.e., types of stressors). The most frequently mentioned higher order stress categories concerned 'Time and workload' (assigned to 61.6% of the sample), 'Organisation, team and management issues' (60.4%) and 'Job content and work environment' (50.3%). Table II presents illustrative codes for these categories (see Supplementary Table I for all categories). The general theme to emerge from the analysis of work stressors was labelled "Time and time trade-offs". Lack of time and a high workload meant participants had to prioritise tasks and make trade-offs especially between administrative duties versus clinical duties or patient care ("*Important administrative work - difficulty to be up-to-date"; "Due to much of administration, always running out of time in the out patient clinic hours"; "You know from the literature that you can do a lot of psychological care for infertile couples but often you haven't the time"*) or multi-tasking (*"Interference of administrative tasks during laboratory work. Both cannot be completely separated in time").*

II. Perceived sources of difficulties: "What are the top three factors that make working with patients difficult?"

A total of 34 lower order categories were generated and grouped into 12 thematically related higher order categories. About 4% of participants reported not having any difficulties working with patients. In total, 11.6% (n=140/1208) of the replies were coded with multiple lower

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order categories (i.e., different sources of perceived difficulties). The most frequently mentioned factors that made working with patients difficult related to 'Patient-related sources (assigned to 66.7% of the sample), 'Communication and counselling' (33.7%) and 'Mis-information and lack of knowledge' (27.8%). Table II presents illustrative codes for these categories (see Supplementary Table II for all categories). The general theme to emerge from the analysis of replies under 'Perceived sources of difficulties' was the "Multifactorial causes" of difficulties working with patients'. Sources could be within patient, staff, clinic or externally (e.g., funding). The replies also showed clinic staff providing fertility services despite the patient and system challenges they perceived. Many replies gave a sense of repeatedly having to address the same problem (*"The internet....much time spent explaining why we will not be carrying out a particular treatment which has an unconfirmable 90%+ success rate"*), of trying to circumvent problems to provide best care despite constraints *("As IVF is a totally private profession … the patients are under massive stress of the financial burden … reflects on us trying to make the best compromise we can*") and sometimes feeling they fell short of the standard they wished to provide because of these constraints (*"Their sorrow and sadness, and the different ways of expressing that, and my shame of not being able to provide what they want").*

III. Workshops: "Which top three factors (of those reported for work stress/perceived sources of difficulties) would you be most willing to attend a workshop to resolve".

A total of 33 lower order categories were generated from the replies and these were thematically grouped into 13 higher order categories. Overall 18.1% of participants did not provide an answer to this question. Of those who provided an answer, a small proportion (1.3%) said they did not believe a workshop could resolve the challenges they faced. Only 9.5% (n=86/907) of replies were coded with more than one lower order category (i.e., more than one workshop). The most often cited workshops were for 'Communicating and counselling with patients' (24.9%), 'Dealing with patient-related sources (19.6%), and 'Clinical topics' (e.g., difficult cases, improving performance or success rates, 19.6%). Table II presents illustrative codes for these categories (see Supplementary Table III for all categories). The general theme from the 'Workshop' question was 'a little of everything'. Although there were small differences in the proportion of the sample that endorsed particular workshop topics no one workshop topic dominated.

Discussion

The results show that fertility clinic staff perceives numerous work stressors and sources of difficulties with patients. Two general themes emerged regarding challenges in the delivery of fertility care. First, a high workload and consequent lack of time often required staff to make

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difficult time trade-offs between important aspects of their job role (clinical versus administrative) (i.e., "Time and Time-Trade-offs"). Second, staff had to be resilient to effectively provide and maintain high quality care despite the multifactorial nature of causes leading to difficulties working with patients (i.e., "Multifactorial causes"). Clinic staff expressed willingness to attend workshops to resolve these challenges. The results support and extend those of past survey research (Harris & Bond, 1987, Gerson et al. 2004).

The participating fertility healthcare professionals would be considered to have 'high strain' jobs because they perceived a high workload caused by factors outside their control (e.g., covering duties for absent staff, too many patients, Karasek, 1979). The perceived difficulties in working with patients were similar to the types of problems primary care experts refer to as 'patient complexity' (Peek et al. 2009). This refers to a patient-related sources that interfere with care as usual and that could result from medical complexity (e.g., poor response), socioeconomic and mental health issues that exacerbate disease or its treatment (e.g., depression), or specific patient characteristics and behaviours (e.g., unrealistic expectations) (Loeb et al. 2015). Additionally, causes could emerge from factors inside the clinic (e.g., work planning) or outside (funding, legislation). Together these challenges can be converted to stressors that produce stress reactions, and affect staff wellbeing (Lazarus & Folkman, 1984). Staff that are concurrently experiencing stress reactions in the workplace have less energy and mental resources for patients, which affects patient outcomes (Scheepers et al., 2015). Specialised occupational psychologists and managers could be consulted to address these challenges in workshops. The ESHRE psychosocial guidelines directed at staff could also help manage some perceived sources of difficulties working with patients (Gameiro et al., 2015). Addressing challenges in clinics could improve quality of life for patients and staff and potentially patient outcomes. However, more research is required.

Future research

We view our results as the start of what we hope will become a productive avenue of further research potentially leading to improved outcomes. Replication studies are needed to confirm whether the most frequently mentioned work stressors and perceived sources of difficulties are the most frequently encountered in fertility clinics and to examine further the linkages and overlap between work stressors and sources of difficulties working with patients. Further, replies suggest the need for better understanding of the perceived sources of problems. For example, the replies "'*When patients have difficulties in understanding doctor`s advice or following the rules of the treatments plans*" could mean the patient is uneducated, staff is not skilled at providing understandable information, or both have difficulty reaching equilibrium in a shared decision-

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making context. The category "patient demand" emerged as a lower order category to the work stressor question (e.g., "*inability to have all patients achieve their pregnancy*…") and the perceived sources of difficulties with patients question too (e.g., "*patients are more and more demanding and unable to accept failure* …") but the interplay between these is not understood. Research on patient complexity in primary care is more advanced and should be consulted (Loeb et al. 2015). Once the causes of work place stress and perceived sources of difficulties in working with patients are better understood, the next step is evaluating their (individual and cumulative) effect on staff wellbeing and patient outcomes and developing tailored interventions to modify causes.

Strengths and limitations

Online data collection allowed us to obtain textual data of a large international sample of staff from many clinics stating their views in their own words (> 500). However, participants nevertheless represented only 8.9% of ESHRE members (5902 members) suggesting possible selection bias. It is unknown how many clinic staff are members of ESHRE. If each clinic in Europe (1312 at time of survey, Kupka et al. 2016) was equally represented at ESHRE and in our survey then it would be about 4 to 5 members of staff per clinic being ESHRE members, and about 40% of clinics represented in the survey. The survey was in English and the need to communicate complex issues in a secondary language could explain low participation. Due to unforeseen circumstances, the time interval between data collection ending and the start of analysis was longer than expected (5 years) but we believe our data remain relevant. First, our data on stressors and difficulties were similar to those recently reported in anecdotal work (Grill, 2015). Second, the topic is discussed in on-going initiatives that prioritise communication and human resources in fertility clinics (ESHRE "Management of Fertility Units", 2010). We did not report on differences according to occupational role due to lack of space but a cursory look suggests challenges are consistent with job role. For example, embryologists reported more stressors related to quality control (e.g., handling human material) than other staff. Another issue arising from using a single language was that errors in spellings or grammar made the interpretation of textual data difficult. Given the interpretive subjective nature of content analysis and this issue specifically, several researchers coded the replies. Overall inter-rater reliability was satisfactory increasing the trustworthiness of the findings. Nevertheless, replication in multiple languages is warranted. Finally, future studies should examine the positive elements of working in fertility clinics and explore their effect on staff quality of life and patient outcomes.

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Authors' Roles

JB was the lead researcher on the study, which included conceptualising and designing the study, data collection and analysis, preparation and revision of manuscript. LB assisted with design of study, data collection and analysis, preparation and revision of manuscript, EK assisted with qualitative analysis and interpretation and revision of manuscript. Chin ieng U carried out second coding and used these data in an extended paper submitted for her health psychology thesis on this topic. CV assisted with data interpretation, preparation and revision of manuscript.

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Competing Interest(s)

None declared

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Table I Participant characteristics (N = 526*)

	Study		ESHRE Membership**	
Type of Profession	%	n	%	n
Clinician	41.3	216	45	2999
Embryologist	35.5	186	22	1431
Basic scientist / researcher	6.3	33	11	730
Other	2	10	5	363
Resident/student	0.8	4	5	340
Lab technician	1.3	7	4	263
Nurse	6.9	36	3	203
Psychologist/counsellor	2.1	11	1	81
Midwife	1.5	8	1	79
No occupation provided	0	0	1	71
Company representative/administration	2.3	12	1	47
Pharmacist	0.2	1	0	9
Work allocation (mean % work time, SD)	Mean	SD		
Clinical/patient care	35.2	30.3		
Clinical/laboratory	24.3	29.5		
Administration	21.0	20.7		
Research	12.3	17.3		
Teaching	8.0	10.5		
Region of residence	%	n		
Europe	73.0	384		
Americas	13.7	72		
Asia	6.8	36		
Africa	3.8	20		
Oceania	2.7	14		

Note. *Two respondents did not provide data on all characteristics. SD=standard deviation

Note. **Membership figures for 2015 provided by ESHRE. N=6616

Table 2

Most frequent challenges encountered by fertility clinic staff related to work stressors and perceived sources of difficulties, and those that could be addressed via workshops

Question	Higher order category	Illustrative replies
Work Stress	Time and workload	"[I am] trying to achieve daily work duties in an 8 hour day and trying to avoid overtime"
		"Restriction of time in patient-doctor contact"
	Organization, team and management issues	"The need to work as a good team. I think we do not reach it that much"
		"Bitching – interpersonal conflicts"
	Job content and work environment	"When several patients…in one time are entering…for ovum pick-up"
		"Work not well structured and organized"
Perceived Sources of Difficulties	Patient-related sources	"IMPATIENCE: patients who demand immediate feedback to emails or calls …etc."
		"Even though you inform them [patients] of their true chances of success they tend to believe we are miracle workers"
	Communication & counselling with patients	"To tell bad news. No material, no fecundation, no pregnancy"
		"Patients' religious beliefs that are inconsistent with clinic policies"
	Mis-information and lack of knowledge	"When patients have difficulties in understanding doctor`s advice or following…treatments plans"
		"Bad information by Doctor Google and press"
Workshops	Communicating & counselling with or about patients	"Bad communication between physicians-biologists-nurses concerning cases"
		"Motivating patients for psychological…relational counselling… when they want a medical solution and there isn't one"
	'Dealing with patient-related sources'	"Husband's unwilling to fully cooperate"
		"Patient's…more and more demanding…and our lab does not have the time or means to be able to easily meet those demands"
	Clinical topics	"Pregnancy rates and keeping them competitive"
		"How to optimize patient care in a busy program"

Supplemental Table I Factors that make working in a fertility clinic stressful ('Work Stress'), N=526

Higher order category Lower order category	%	n
Time and workload		
High workload, workload issues	28.1	148
Lack of time, time pressure	23.1	122
Overtime work	7.4	39
Deadlines	3.0	16
Organisation, team and management issues		
Team work and team member conflicts	28.5	150
Organisation and management	18.4	97
Staff management issues (incl. lack of staff)	13.5	71
Job content and work environment		
Admin tasks (email, phone calls)	18.0	95
Work planning	9.5	50
Job responsibility/role	8.7	46
Work environment/condition (noise, space)	8.2	43
Research	2.5	13
Teaching/training staff and students	2.1	11
Unpredictable events, disrupted work routines	1.3	7
Clinical treatment		
Difficult cases (clinical, ethical, medical)	11.2	59
Treatment/lab results	9.5	50
Pregnancy success rate/treatment outcome	5.5	29
Treatment protocol	4.2	22
Patient needs		
Patient expectations & demands	8.0	42
Patient distress and anxiety	3.8	20
Patient issues	8.2	43
Economical and financial issues		
Finances (budget, funding)	9.1	48

Private centre issues	5.7	30
Insurance	1.7	9
Quality control		
Technological problems & lab practices	6.5	33
Quality control	3.6	19
Concentration and attention	2.5	13
Worry of making mistakes	1.7	9
Health and safety, risks	1.7	9
Handling human material	1.1	6
Legal aspects		
Legislation, policy, law	11.6	61
Other		
General personal issues	5.1	27
Other	3.4	18
Conflicts	.8	4
Communication & counselling		
Communication	6.3	32
Counselling & psychological support	0.8	4
No stress		
Reported 'none' or 'no stress'	1.1	6

Lower order categories subsumed under each higher order category (in bold) for replies to what factors make working in a fertility clinic stressful ('Work Stress')
n= number of participants mentioning lower order category
%= percentage of total sample mentioning lower order category
Note: N does not add to 526 because respondents provided multiple replies.

10 Supplemental Table II Factors perceived to make working with patients difficult ('Perceived
11 Sources of Difficulties'), N=526

Higher category Lower order category	**%**	**n**
Patient-related sources		
High ~~patient~~ expectations/demands & inability to meet patient need	30.0	157
Difficult and problematic patient characteristics	17.5	92
Patient negative emotion	12.9	68
Over-questioning by patients	2.1	11
Individuality & diversity of patient needs	2.1	11
Suspiciousness/lack of respect between patient and doctors	1.7	9
Changing patient lifestyle and behaviour	0.4	2
Communication and counselling with patients		
Communication and information giving	13.5	71
Culture and language barrier	8.6	45
Breaking bad news	7.8	41
Counselling and psychological support	3.8	20
Misinformation and lack of knowledge ~~of patient~~		
Doctor Google	10.8	57
Lack of knowledge and education level	17.0	90
Clinical treatment		
Difficult case	12.0	63
Treatment failure	4.9	26
Pregnancy rate	2.5	13
Treatment protocol	1.7	9
Time pressure		
Time pressure	17.3	91
Job content and environment		
Admin issues	6.6	35
Work planning	5.7	30
Work environment (noise, space)	2.3	12
Unexpected events at work	1.1	6
Economical and financial issues		

Finances (budget, funding, cost of treatment)	13.3	70
Insurance	1.3	7
Other		
Other	9.7	51
Technological and instrumental problems	2.7	14
Andrology	0.6	3
Teamwork management and staff issues		
Teamwork issues	8.0	42
Staff emotion and psychological state	4.0	21
Organisation and management issues		
Organisation and management	5.9	31
Waiting list	0.8	4
Legal aspects		
Legislation, policies, law	5.3	28
No difficulty		
No difficulty	3.8	20

Lower order categories subsumed under each higher order category (in bold) for replies to what makes working with patients difficult ('Perceived Sources of Difficulties')
n= number of participants mentioning lower order category
%= percentage of total sample mentioning lower order category
Note: N does not add to 526 because respondents provided multiple replies.

Supplemental Table III Workshops staff would be willing to attend to resolve work challenges ('Workshops'), N=526

Higher category Lower order category	**%**	**n**
Communicating and counselling with patients		
Communication skills	9.3	49
Counselling and psychological support	8.0	42
Breaking bad news	5.7	30
Culture and language barrier	1.9	10
Dealing with patient-related sources		
Patient emotion	7.8	41
Patient expectations & demands	8.0	42
Difficult and uncooperative patients	3.8	20
Clinical issues		
Difficult case	6.8	36
Improve success rate	6.8	36
Improve clinic performance	4.2	22
Lab practice/technical skills	1.9	10
Treatment/diagnostic procedures	4.6	24
Post IVF care (ending treatment)	1.0	5
New treatments	0.8	4
Teamwork management and staff issues		
Staff relations & teamwork	14.4	76
Staff emotion and psychological state	4.4	23
Job content and environment		
Work planning/workload	6.3	33
Admin (non-medical) tasks	5.5	29
Work environment (noise, space)	2.3	12
Research	1.9	10
Unexpected events/incidents at work	1.0	5
Organisation and management issues		
Organisation and management	13.1	69
Other		

Other	11.4	60
Handling complaints	0.4	2
Staff education & training		
Health Education/external support	8.4	44
Medical education for staff	2.7	14
Time pressure		
Time management	9.9	52
Legal aspects		
Legislation, policies, law	6.1	32
Quality Control		
Quality Control	3.8	20
Health & safety	1.1	6
Economical and financial issues		
Finances (budget, funding, cost of treatment)	4.8	25
No difficulty		
Problem can't be solved by attending workshop	1.3	7
No workshop	3.6	19

Lower order categories subsumed under each higher order category (in bold) for replies to what workshops staff would be willing to attend to resolve work challenges ('Workshops').n= number of participants mentioning lower order category
%= percentage of total sample mentioning lower order category
Note: n does not add to 526 because respondents provided multiple replies.