Gender and Leadership in Obstetrics and Gynaecology: Do we have gender equality in Australia and New Zealand?

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Abstract

Background

Obstetrics and gynaecology (O&G) is the medical specialty providing women's healthcare. The Royal Australian and New Zealand College of Obstetrics and Gynaecology (RANZCOG) provides O&G leadership and training within Australia and New Zealand. Historically O&G has been a masculinised specialty, although over the last two decades significant feminisation has occurred. There has not previously been investigation of the gender distribution of leadership positions within Australian and New Zealand. This research explores gender and leadership within RANZCOG and affiliated institutions in Australia and New Zealand. It also examines the views held by RANZCOG members on leadership, gender bias, and the use of gender quotas.

Methods

This study employed three data collection methods. The first involved a review of public documents within RANZCOG, RANZCOG affiliated hospitals (98 sites), and university O&G departments in Australia and New Zealand (18 sites). The second electronically surveyed RANZCOG members' experience of leadership, gender bias, and opinions on the use of gender quotas. The third used open survey questions to further explore views on leadership, gender bias, leadership barriers and the use of quotas.

Results

Currently females make up 80% of RANZCOG trainees and 46% of specialists. Female representation is currently 14% of the RANZCOG board and 32% of RANZCOG council 32%. RANZCOG affiliated hospitals and Australian and New Zealand University O&G departments have respectively 32% and 31% female leadership. Male responders were more likely to hold current leadership positions (p = 0.001) and female responders more likely to desire future leadership (p = 0.001). Female responders reported higher rates of gender bias (p = 0.001). Among all responders 63% opposed gender quota use within RANZCOG. Three thematic groups emerged from free-text responses. The first concerned 'barriers limiting leadership opportunities', the second 'gender bias is present', and the third represented by the statement 'best person for the job'.

Discussion

Despite the female 'pipeline' within Australia and New Zealand obstetrics and gyaecology, there is a gender leadership gap within RANZCOG and its affiliated institutions. O&G leadership gender equality is a complex and evolving issue, acknowledging that barriers and biases are

experienced by both genders, and leadership is desired by many. Awareness of the barriers revealed through this research provides RANZCOG with an opportunity to develop solutions so as to improve leadership gender equality

Keywords

Obstetrics, gynaecology, medicine, leadership, gender, gender bias, hospitals, universities, institutions.

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Introduction

Obstetrics and gynaecology (O&G) is the medical and surgical specialty providing specialist women's healthcare. Beyond clinical practice, trainees and specialists involved in obstetrics and gynaecology are also involved in research, advocacy, policy development, education and leadership. In Australia and New Zealand the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) is the training and accreditation body for obstetrics and gynecology (1). RANZCOG also leads Australia and New Zealand in women's health advocacy and policy development.

Historically RANZCOG has had a masculinised membership. However in line with other medical specialties (2), significant feminisation has occurred over the last two decades (3). Females make up 46% of RANZCOG specialists and 80% of RANZCOG trainees in 2017 (4). This means obstetrics and gynaecology is now one of the most feminised medical specialties, both in Australia and internationally (2, 5-8). Despite this feminisation a gender leadership gap is apparent at a national level for RANZCOG (9), with only one of the current RANZCOG national board female, and only one female college president since RANZCOG inception in 1998. This lack of female representation within leadership positions is also apparent at an international level (10-14).

The 'pipeline argument' holds that after enough time elapses, leadership should reflect trainee gender cohorts, even if historic gender leadership gaps have existed (15-17). This argument would assume that 20 years is sufficient time for specialists to advance to career positions at which promotion to leadership positions is common (18). Despite this, RANZCOG has a persistent gender leadership gap within its national board (9). This gender leadership inequity is increasingly being challenged by the broader O&G membership, with a growing focus on advancing women in leadership (19). No publication has reported the gender of those in leadership positions in the broader RANZCOG landscape or associated Australian and New Zealand institutions.

Why does all this matter?

Currently disparity exists between the gender of the RANZCOG board and that of the broader membership of RANZCOG. This challenges the 'authenticity' of RANZCOG's leadership representation. Gender leadership inequality also highlights the ethical consideration of social fairness that demands gender equality in leadership (20).

Within the general literature diversity in leadership, especially gender diversity, has been associated with improved health outcomes and improved organisational performance (21-27). Beyond these health and organisational outcomes, there is also an acknowledgement that authentic gender equity will not be achieved without a societal commitment of equal opportunity, including all societal institutions (28).

Although diversity in medical school and specialist training programs has improved, the 'pipeline' to leadership positions in most medical specialties for women and minority groups is 'leaky', with few women or minorities reaching the top (15, 29-34). In her past role as president of the Australian and New Zealand College of Anaesthetists, Professor Kate Leslie applauds the suggestion that leadership should model gender and racial diversity rather than merely reflecting it (16).

Research Aims

This primary aim of this project is to audit the gender of those in leadership positions within obstetrics and gynaecology in Australia and New Zealand, in the settings of RANZCOG, RANZCOG accredited hospitals, and university O&G departments. Secondary aims include obtaining information from RANZCOG members on leadership status, leadership desires, barriers to leadership, experience of gender bias, and views on gender quota use within the College. The data will document the current landscape of the gender leadership composition, as well as explore members experience and perspectives of leadership, gender bias, and gender quota use within RANZCOG. It is hoped that this research will provide valuable empirical data to stimulate debate about the importance of gender leadership diversity, and drive advocacy to reduce the wider societal gender-leadership imbalance.

Background

Defining Leadership

There is no singular definition of leadership in the literature (35-38). Over the years educational theorists have characterised leadership based on various attributes, behaviours, actions and outcomes. Theories include the great man theory, trait, behaviour and contingency leadership theories (including Fred Fiedler Model, Hersey-Blanchard Situational Model, Robert House Path-Goal Model and Vroom-Yetton Model), charismatic and transactional leadership, feminist leadership, as well as transformational leadership (39-41).

Although there is significant overlap among leadership types, the literature suggests women lead differently to men, with female leadership more commonly associated with a democratic or participatory style, rather than an autocratic 'task-oriented' masculine leadership style (41-43). Acknowledging these 'gender' influences on leadership is invaluable, especially when we are considering why gender leadership diversity might influence organisational outcomes (44). Understanding these 'gendered' leadership traits also plays an important role if we are to address the implicit gender biases and structural barriers often present for women seeking leadership opportunities (45, 46).

Within medicine, leadership is more commonly based on authority-roles, not the aforementioned leadership types (47-49). Heads of hospital units and departments, heads of post-graduate medical training, elected counsellors for training and accreditation, counsellors and presidents of medical representative bodies, are the typical leadership positions identified within the medical literature (12).

Medical leadership in Australia and New Zealand

Within both hospitals and postgraduate colleges in Australia and New Zealand, male specialists hold the majority of medical leadership positions (2). This is despite the rapid feminisation of medicine over the last two decades seen both nationally (6, 7, 50) and internationally (51-54). An optimist viewing Australia's recent medical feminisation would anticipate a natural correction of the gender leadership imbalance over time (33, 55). However female specialists still appear to 'hit the glass ceiling' when progressing toward medical leadership roles (42, 56-60). Indeed, medicine is not the only feminised profession in Australia with a gender leadership gap. Prior to the feminisation of medicine, both veterinary science and education became

feminised professions (61, 62). Despite their 'pipeline' they too have experience a persisting gender leadership gap. If medicine is not unique in its leadership inequity, this suggests the consideration of a wider societal gender imbalance in power and opportunity for women seeking leadership.

There are two key problems that flow from this type of gender leadership gap. First gender inequity in leadership raises the question of authentic representation. Can a professional organisation achieve authentic representation if its leadership does not reflect or represent its membership? The second concerns the impact of exclusive male leadership style. Does this reduce the likelihood of co-operation and collaboration, the more often feminised leadership traits, with the membership? And where does this leave each profession's ethical responsibilities with regards to membership democracy and equality, when evidence suggests men and women equally desire leadership roles (63)?

Barriers for women seeking leadership

There is a general trend of persistent underrepresentation of women leaders in business, science, education, research and public office (32, 64-69). Similar trends are apparent in healthcare, where although women increasingly represent a gender majority, they remain in the leadership minority (70, 71). Three main factors appear to influence how and why women are under-represented in leadership.

The first factor is the developmental impact of childhood exposure to leadership factors. Wojtalik *et al* (2007) explored the influence of childhood on women's leadership aspirations (72). Building on work by Eccles (73, 74), this study revealed a strong relationship between parental leadership expectations and leadership success. Without a parental-led gender-fair childhood environment, Wojtalik *et al* found women were likely to limit their leadership aspirations. Aligning with current gender schema theory, this study asserts that the developing child internalises the gender lenses of the dominant culture (75).

A second influence includes structural factors including explicit and implicit gender bias, gender stereotypes and schemas, and structural barriers (42, 76-79). Valian describes how our gender schema for women (nurturant, expressive, communal and empathic) is at odds with that of our masculinised schema for leadership (agentic, assertive, and task-oriented), leaving women under-evaluated with respect to performance. Adding to this is evidence that women more consistently rate themselves less capable than male colleagues (80, 81).

The third influence occurs once women are in a leadership role, with women judged more negatively as leaders compared with male counterparts (82, 83). This negative evaluation creates yet another deterrent for women seeking leadership, as well as driving internalised stereotypes and influencing women's adoption of more masculinised styles of leadership (84-87). Even when matched as 'effective' leaders, the literature reveals males consistently rate women lower in performance (88), while women are more likely to be placed in 'high risk' leadership positions often associated with shorter tenure (89). This is further amplified in highly masculinised organisations and when a larger percentage of males are the evaluators (90).

Within medicine, international research has identified a number of similar cultural, structural, organisational and personal barriers to women entering leadership roles (77, 80, 91-96), and these remain consistent for women desiring medical leadership in Australia (97, 98). These have not been explored in the discipline of obstetrics and gynaecology in Australia and New Zealand.

Why aspire to gender leadership equity?

Gender equality is a fundamental human right and a primary tenant of social justice (65, 99, 100). This alone should drive our cultural reform for gender equity in all areas, including leadership, of society. Beyond fundamental human rights, the literature reveals gender equality improves workplace productivity, emotional wellbeing, economic growth, and organisational reputation (21, 44, 68, 101-103). Leadership gender diversity has also demonstrated improved financial and organisational performance (102, 104, 105). There are further established advantages to gender equality at all levels of the workplace. These include organisational revenue, improved gender equality is estimated to increase GDP (gross domestic product) 12% by 2050 in European Union countries (24) and increase by 2025 increase global GDP by 26% (106, 107).

Medical leadership equity

The international and national literature across medicine reveals a consistent trend of fewer females in medical leadership, and this remains irrespective of the gender balance within each specialty (2, 13, 16, 58, 59, 108). Whilst addressing gender leadership inequity at any level is valuable, gender bias exists and shapes the landscape long before postgraduate training and specialist practice (42, 109). One solution to addressing leadership inequity is to address this issue early within medicine (98, 110-112). Within the United States the Association of American Medical Colleges (AAMC) Academic Project Committee has now introduced medical school curriculum reform designed to address gender leadership disparity (113). These include

interventions to improve mentoring, limit gender bias, and reduce structural biases for women (29, 114-116). Reviewing the leadership landscape over time will reveal the true effectiveness of this curriculum cultural reform. No such program exists currently within the national Australian medical school curriculum.

Acknowledging the gender leadership gap is another step towards minimising the gender inequity in medical leadership (42). Achieving gender equality will require numerous changes, not only increasing the number of women in male-dominated medical specialties, but also addressing the impact of explicit and often unconscious gender-linked biases within medicine (77, 91, 117, 118). Advocacy for broadening gender roles in society and the professional identities of women in masculine professions will be a deeply relevant part of this cultural reform (110). Within Australia, the past president of ANZCA (Australian and New Zealand College of Anaesthetists) recently addressed this issue within her own postgraduate setting (16). Although lacking reference to what barriers exists, Professor Kate Leslie acknowledged the discord between gender representations within the leadership and membership. Embracing Martin's (119) simple rules for improving leadership diversity, and following recommendations from the American Society of Anaesthesiology (120), Leslie implores the ANZCA community to model its leadership on the gender and racial diversity of its membership.

The role of gender quotas

There are several strategies that have been employed to decrease the gender inequality in the workplace. A prominent example of this is positive discrimination, with measures aimed at improving 'equality of opportunity' for people who face, or have faced, entrenched discrimination (100). Gender quotas, with stipulated minimum gender representation, provide one method for improving gender diversity in organizations. One of the questions addressed by this research is whether gender quotas would be supported by the RANZCOG membership.

Within politics, an industry with a long history of quota use, the international 'Gender Quota' database indicates gender quotas (legislated candidate quotas, reserved seats, or quotas adopted voluntarily by political parties) have seen female parliamentary and legislator representation improve internationally from 13% in 1990 to 23% in 2016 (121). This increased female representation has in turn increased legislations focused on 'women', with subsequent improvement in both women and perinatal health outcomes (122-124). In this setting, positive discrimination has improved both political gender diversity, as well as health outcomes for women. In 2005 Norway mandated a female gender quota of 40% for board representation on all

public limited liability companies. This saw a numerical increase in female 'board' representation as well as the additional positive effects on female leadership in 'non-board' roles. In this setting gender quotas positively improved gender diversity, and created a 'new culture' embracing female leadership (125) .

Within the broader field of gender theory there are many arguments both for and against the role of gender quotas. Quotas have a tendency to promote *essentialism*, the conviction that individuals represented through quotas have essential traits that define them (126, 127). Within the gender quota arena this would suggest only women can represent women, and that all women represent all types of women. This is however not true. Quotas may be also seen to threaten the principle of equal opportunity for all, as well as promote a 'non democratic' process (128, 129). Counter to this are the arguments *for* gender quotas. These include non-essentialism considerations such as structural biases for women in the workplace. An example of this is the near-universal supposition that women take primary responsibility for early child rearing (with more part-time work and career breaks), reducing opportunities for career progression. In this setting gender quotas facilitate 'gender equality' by acknowledging and overcoming structural biases faced by women desiring leadership. Another advantage of gender quotas is the ability to truly provide representation where leadership gender might be discordant with the population.

Are there solutions to the medical gender leadership gap?

An acknowledgement of the gender leadership gap, as well as addressing underlying institutional and individual gender schemas, is vital to the correction of this inequality (130). Several authors have written on corrective strategies addressing the gender leadership gap. Beyond gender quotas, multiple solutions including; effective succession planning, implementation of leadership development programs focusing on gender diversity, interventions facilitating behavioral changes, adoption of objective performance evaluation process, and creation of institutional initiatives including flexible work schedules, mentor programs, networking events, and institutional women networks, have been discussed in the literature (70, 131-136). Within medicine, mentoring appears as a commonly voiced solution (116, 137-142). Challenging this solution however is the low number of women currently within medical leadership roles, reducing the availability of same-sex mentors and role models for junior faculty (143-146). At the core of all solutions however must be a desire and acceptance of cultural reform for gender equity, advocated by the woman, the institution and society. Only then can true gender leadership equality occur.

Literature review: Leadership in Obstetrics and Gynaecology

Background

Prior to commencing this project a systematic search through relevant literature was performed to establish the current landscape on gender and leadership in O&G. With only seven articles addressing this issue, the search was subsequently expanded to consider gender and leadership more broadly within with medicine.

Method

Searches within PubMed, Google Scholar, and the individual journals 'Gender & Society' and 'Gender Issues' were conducted. The PubMed and Google Scholar databases were chosen for their high utilisation in medicine, and individual journals for their high impact factor within the field of gender.

Articles included in this review were English language papers published between 2000 and 2017, with the key-words: 'gender', 'leadership', 'medical leadership', 'gender bias', 'gender schemas', 'positive discrimination', 'gender equality', 'gender quota', 'glass ceiling', 'medicine', 'obstetrics' and 'gynaecology'.

Articles were included if they referred explicitly to obstetrics and gynaecology, medical leadership, gender equality, the 'glass ceiling', gender bias or implicit bias. Articles concerned with sex and gender differences in health and illness were excluded from the review. Following initial synthesis of the literature, further articles were added if they met the criteria but were published after the initial review, or if they increased the depth of the analysis within the subsections of the review.

The SALSA analytical framework (Search, AppraisaL, Synthesis and Analysis) was employed to examine all articles considered for review (147). Articles were compiled into an EndNote database and abstract were reviewed. Those relevant to the topics of 'leadership in medicine', 'leadership in obstetrics and gynaecology', as well as 'solutions to the gender leadership gap', were read in full. Those articles fulfilling the considerations of robustness (validity and reliability) and applicability were included (148).

Leadership in Medicine

Where are the barriers to leadership?

The earliest level of leadership in medicine begins in medical school. Within this student setting Wayne *et al* found that when leadership opportunities arose, fewer female students volunteered

to become leaders (149). This gender bias was eliminated after implementing interventions, suggesting curriculum reform could increase female student leadership. Limiting the generalisability of this study was the inclusion of only first year students, with the study's strength in its explicit methodology, structured approach, and reproducibility. Further research in the area would benefit from investigating whether the leadership gap persists through all levels of medical school or self-corrects over time.

At medical specialist level a number of barriers have been identified for women desiring medical leadership (47). Van de Brink notes 'gender practices' are common barriers for women seeking leadership (150). These include: exclusive 'male' network practices, the view of women having lower levels of leadership commitment, and perceived 'less appropriate' leadership styles. This study did not address the question of 'leadership desire' among responders. Setting the scene with this would allow the reader to acknowledge the relevance of barriers for female specialists seeking leadership. This was subsequently addressed by Pololi *et al*. In this large and systematic study on leadership aspiration, male and female specialists held equal levels of leadership aspiration (115).

At an institutional level Dannels *et al* surveyed US and Canadian medical school deans on organisational culture and policies regarding women in leadership (151). Acknowledging the increasing gender equity in 'mid-level' leadership positions, their findings supported previous reports that 'time alone' was not sufficient to ensure advancement of women to 'senior leadership' positions. Instead intentional strategies, not just a 'critical mass of women', must be considered within organisations, if leadership gender equality is to be achieved (152-154).

What are the barriers within leadership?

There are many historical justifications for the gender leadership gap in medicine including: (i) not enough women or women not staying in positions long enough to reach leadership roles ('pipeline argument'), (ii) women not seeking leadership positions for family reasons, and (iii) women being less likely to be 'natural' leaders. All of these have been refuted in the literature as being inaccurate representations of the barriers to leadership (155-157). Instead many examples of 'glass ceilings', 'leaky pipelines', and 'sticky floor' barriers remain for female specialists seeking medical leadership (15, 29, 30, 34, 91, 158), with these and many other studies reinforcing the existence of reversible gender leadership barriers. Included in this is the study by Bismark *et al* (97). Here 30 medical practitioners in leadership roles were interviewed in an effort to identify preventable gender-related barriers (including internalised, interpersonal and structural elements) for women seeking leadership roles. Although limited by a small sample

size, this study yielded similar results to that of Yedidia and Bickel (159), with each identifying reversible gender leadership barriers.

Once in leadership positions, the literature reveals female medical specialists are less likely to advance at the same rate or receive equitable financial compensation for their leadership role (160-164). This gender pay difference remains even with adjustments for age, experience, speciality, hours worked, academic rank, measures of research productivity and clinical revenue (165). Although some of these studies are limited by financial self-reporting, there is no evidence of systemic gender-related inaccuracies. Those with objective measures are strengthened by their robust methodology, standardised approach and reproducibility.

What solutions exist for leadership equality within medicine?

Within the United States, the Association of American Medical Colleges (AAMC) began assessing the landscape for women in academic medicine in its first step towards challenging institutional gender leadership inequality (166). Gathering data from public documents, the AAMC explicitly detailed the leadership gender gap of the world's largest medical population, and subsequently stipulated compulsory curriculum strategies aimed at addressing this inequity (113, 167). Although 'top' leadership positions remain male dominated, many medical institutions, having adopted the AAMC strategies, have now achieved proportional gender leadership representation (168). Building on the AAMC report, Valentine and Sandburg subsequently published their 'ABCC solution' aimed at improving leadership opportunities for female specialists in medicine (169). Their paper highlighted the benefit of an individualised framework to support successful careers, family responsibilities, and personal interests (170). By challenging the traditional 'ladder system' to leadership and re-culturing the workplace, Valentine and Sandburg anticipate a 2020 50/50 leadership gender balance within institutions adopting their program.

More recently Spalluto *et al* (171) published the results of their LIFT-Off program (31). This program, designed to improve understanding and opportunities for women seeking leadership within radiology, showed a statistically significant improvement in access to faculty development and advancement opportunities, as well as improved clarification of expectations about the path to career advancement. With only a single faculty involved and only a 1-year follow-up data the study has many limitations, but does create a low cost and potentially sustainable educational model for other medical departments seeking solutions to the leadership gap.

In summary, the literature on leadership in medicine suggests women face barriers from medical school, through to specialist practice. Reduced levels of perceived capability, capacity and credibility are amongst the barriers women may face when seeking medical leadership (97). Both medical schools and some specialist colleges (113, 171) are promoting interventions to achieve gender leadership equality.

Leadership in Obstetrics and Gynaecology

O&G leadership in Australia

Very little has been published on gender leadership equality within O&G in Australia. The first publication came in 2010, when the first female professor of O&G in Australia documented her journey from student in 1967 to specialist (172). In a stimulating piece, Professor Caroline de Costa reflected on being one of only seven female specialists amongst 'several hundred' male specialists in the early 1980s. The second publication came in 2012 with the publication of de Costas' RANZCOG annual scientific meeting oration. With females making up 80% of trainees but only 14% of the RANZCOG board, she highlighted the gender leadership inequality, and discordance between female membership and leadership (173). Despite further feminisaton over the last five years, this statistic persists today (9). Although no other author has directly addressed the O&G gender leadership gap in Australia, the international literature is growing (10-14, 19).

O&G Leadership Internationally

The international literature, predominantly out of the United States, provides a broader insight into the trends and barriers to female in leadership in O&G.

One of the earliest publications on the feminisation of O&G and gender leadership gap came from Vicki Seltzer (10). Published in 1999, this article reported on 25 years of data on the gender landscape of O&G in the United States, revealing an increasingly feminised specialty, but ongoing gender leadership gap. This article provided a comprehensive reflection on the many overt, often unintentional inequities that exist for women in O&G, with the articles greatest strength the many suggested solutions to minimise gender leadership inequality. These included supervision and mentoring, providing childcare facilities. and ensuring gender diversity on committees, with most remaining relevant today.

In an article published by Wise *et al* in 2003, O&G faculty from Canadian medical schools were invited to participate in a questionnaire on academic promotion (11). Responses in this study

revealed; women were less likely to be promoted to professor, were more likely to perceive promotion barriers, and ranked mentoring as the top solution to the gender leadership gap. Strengths of this study included the explicit and transparent methodology, the standardized approach, the high response rate, the matched gender distribution of responders and wider membership, and the study's reproducibility.

In 2015 Hofler *et al* investigated gender and leadership in O&G academic departments within the United States (12). Their findings revealed a clear gender leadership gap, with males holding the majority of leadership roles. Within leadership female specialists were more likely to hold 'educational leadership' roles, with males holding more traditional 'head of department' leadership positions. Strengths of this study were the transparent and reproducible methodology, as well as enormous breadth of data revealing the gender leadership gap within O&G in the US. In 2016 Hofler *et al* went on to compare the O&G leadership gap with other medical specialties within the United States (13). Here they found women were significantly under-represented among department chairs for all medical and surgical specialties. Despite O&G experiencing one of the largest feminisations over the 23-year period, the 'pipeline' of females entering the specialty in residency in 1990 had not resulted in the expected gender leadership diversity.

Most recently Ricciotti *et al* (14) published results from a cross-sectional observational study outlining the gender of department-based and educational leaders within O&G across the United States. This 2012-2013 snapshot of the gender leadership landscape revealed an underrepresentation of females as fellowship directors, a proportionate representation as residency program directors, and overrepresentation as medical student clerkship directors. A geographical variation in leadership was noted, suggesting a possible cultural variation in gender views and leadership. As seen previously (174), this study again noted the overrepresentation of women in medical 'educational' leadership roles.

This more focused review of the literature on O & G leadership is limited in number, but does provide evidence that O&G is not dissimilar to many other medical specialities with regards to the gender leadership gap. The authors within this cohort provide some insight to the barriers and potential solutions to the gender leadership gap, but none have addressed this within the speciality of O&G.

Methodology

Background

A mixed-methods methodological approach was chosen for this research (175-177). This was selected for its suitability to achieve the aims of 1) obtaining a snapshot on gender and leadership within RANZCOG, RANZCOG affiliated hospitals, and O&G departments within Australia and New Zealand, and 2) obtaining members experience and views on leadership, gender bias and quotas use at RANZCOG.

In order to obtain a snapshot of the current state of gender in leadership positions within RANZCOG and its affiliated institutions, three methods of analysis were chosen. The first method involved using content analysis to review and tabulate public document data. The second method involved the quantitative analysis of closed questions from a membership wide survey. To obtain more nuanced information (qualitative data) about RANZCOG members' experiences and perspectives which might affect leadership in O&G, the membership wide survey included open-ended questions (Box 1). Here the third method of qualitative analysis occurred. This mixed-method approach would provide descriptive statistics, as well as more in-depth data focusing on factors relating to gender and leadership within O&G in Australia and New Zealand.

Defining gender and leadership

For the purpose of this research 'gender' refers to the identity and state of being of a person, typically (though not exclusively) understood as 'male' or 'female' (178, 179). The gender of those in leadership positions was determined by name and confirmed by image and pronoun use.

'Leadership' was defined as holding a professional 'position of leadership' (12, 47-49). O&G leadership positions for this research included: the RANZCOG presidency, RANZCOG national board members, RANZCOG federal councilors, RANZCOG national chairs, RANZCOG Integrated Training Program (ITP) and Training and Assessment (T&A) state chairs, departmental or unit heads within O&G departments of RANZCOG accredited hospitals, as well as the departmental heads within university O&G departments in Australia and New Zealand.

Member inclusion criteria

RANZCOG currently has 2,055 specialists, 475 trainees and 2,499 diplomates with its wider membership. For the purpose of this research only RANZCOG specialists and specialist trainees were included. 'Diplomates' are Australian General Practitioners who have completed the RANZCOG Diploma of Obstetrics and Gynaecology. They do not hold specialist O&G

qualifications, and they were not included in the RANZCOG 'membership' for the purpose of this research as their primary qualification is with the Royal Australian College of General Practice (RACGP) (180) or the Australian College of Rural and Remote Medicine (ACRRM) (181) .

Data collection

To obtain current data on the gender of those in RANZCOG leadership positions, a review of public documents from the RANZCOG website, RANZCOG activities reports, and RANZCOG media kit, was performed. This was achieved through the review of institutional websites, where documents and departmental staff listings were reviewed. When needed, phone directory listings were reviewed via institutional switchboards.

Data was obtained from RANZCOG, as well as all 98 RANZCOG accredited core training hospitals (182), and all 18 Australian and New Zealand universities with an O&G department (183, 184).

All current RANZCG trainees and specialists were invited to participate in an anonymous secure online survey (Appendix 1). The three authors of this research project designed this survey to gain quantitative and qualitative data from the RANZCOG membership (Box 1). Acknowledging the many ways to explore the concepts of leadership, this survey was designed to explore three areas. The first area was designed to obtain concrete information about currently held leadership positions, as well as aspirations for leadership among respondents. The second area aimed to explore views about remediating discrepancies in leadership related to gender. The third section explored perceptions on gender quotas (as one solution to improve gender leadership inequality). The survey was distributed through the RANZCOG Continuing Professional Development and Revalidation (CPRD) Committee. It was anticipated a minimum 23% response rate would be received, based upon minimum historical response rates from previously published membership-wide online surveys (185).

On the 15th of August 2017, 2530 RANZCOG members were emailed an invitation to complete the survey (via electronic link). On the 1st of September the CPRD committee emailed a survey reminder email and the link was subsequently closed 1 week later.

Data from the de-identified survey was uploaded to a secure computer for data analysis and long-term storage, as per the University of Melbourne Ethics guidelines.

Survey questions

The full survey is located in appendix 1 (located at the end of this document), with a summary of key questions is located below (Box 1). Each survey question was designed to address the secondary aims of this research, with an acknowledgement of the many leadership barriers within the medical literature (15, 29, 30, 34, 91, 97, 155-158). A recognition of these barriers including available time, family commitments, lack of mentors, gender bias, and perceived lower capability, provided the foundation to question 7 of the survey (Appendix 1 – q7). An acknowledging the substantial role gender bias plays in the medical literature with regards to leadership barriers for females, led to the gender bias section within the survey (Appendix 1 – q9-11). Gender quotas have played a key role in improving gender leadership equality within other disciplines (121, 123, 125), and this led to the inclusion of a separate section on gender quotas use (Appendix 1 – q12-14).

Box 1 - Survey questions (full survey, appendix 1)

Leadership questions
Do you currently hold a leadership position within RANZCOG, University, or your hospital? Would you like to hold additional leadership positions now or in the future? What factors stop you from seeking a leadership position or additional positions? Any comments regarding O&G leadership?
Gender Bias questions
Have you experienced gender bias during your training or specialist years? What gender biases, if any, do you believe exist for trainees and specialists that limit leadership opportunities? Any comments regarding gender bias?
Gender Quota questions
Should RANZCOG consider a gender quota system for federal council? Should RANZCOG consider a gender quota system for state councils? Any comments regarding gender quotas?

Data interpretation & presentation

This study's mixed-methods approach utilised descriptive statistical analysis of quantitative data (186), and thematic analysis of qualitative data (187). This approach provided simple summaries and observations about the data sample, as well as identified important themes that emerged from the free text comments. During the discussion of this research, the results of both qualitative and qualitative data will be compared to the international literature showing gender and leadership trends within other O&G communities (11-13).

Quantitative data analysis

The data collected by reviewing and tabulating documents from RANZCOG, RANZCOG affiliated hospitals, and university O&G departments, was analysed using descriptive statistics, and used to identify gender leadership trends. Quantitative data from survey responses was analysed with descriptive statistics, facilitating the identification of trends among respondents addressing gender and leadership positions, desires and barriers to leadership, as well as views on gender quota use within the College. Data was again displayed in tabular form, with comparisons between males and females, as well as specialist and trainee responders. For all relevant quantitative data, chi-squared analyses were undertaken with statistical significance accepted at $P < 0.05$.

Qualitative data analysis

Qualitative data from the survey free-text comments was analysed using thematic analysis (187, 188), with themed responses situated within feminist theories discussing gender schemas and biases in the leadership workplace space (46, 189-196).

Thematic analysis was chosen as the qualitative tool for this research as it provided a flexible and accessible, yet well outlined methodological approach, which was not tied to a particular theoretical or epistemological position. This approach supported the contextualisation of data in a specialty with limited published literature. A guideline to this approach was followed from Bruan and Clark's paper (187). The inductive and semantic thematic analysis of the open text responses involved several steps and these are outlined below (Box 2).

Box 2 – Steps for thematic analysis

Repeatedly reading all responses (with a minimum of 3 read-throughs for each free text comment section)
The generation of initial codes with categorisation of the text according to common patterns or

recurring ideas (ie; in favour of gender quotas, opposition to gender quotas, mixed opinion to gender quota use, or comment unrelated to gender quotas)
Searching for themes, reviewing and refining these themes, further refinement of themes into subthemes, followed by defining and naming these themes and sub-themes. Themes and subthemes were then ranked based on prevalence and 'keyness' (in terms of whether is captures something important in relation to the overall research questions) (187).
Data extracts relating to theme and subthemes were then selected for the results section, with all themes and subthemes compared to theories and understanding about leadership and/or gender equality in the workplace.

Results

Data: RANZCOG Leadership

In 2017 RANZCOG has a total female membership of 63% (1325 of 2530), a female specialist membership of 46% (945 of 2055), and a female trainee membership of 80% (380 of 475). This study's results reveal that females remain in the gender minority in all national RANZCOG leadership roles (Table 1).

Educational leadership roles at RANZCOG (T&A state chair and ITP coordinators) most closely align with membership gender representation, where female specialists are overrepresented. The gender leadership gap is most pronounced at the highest level of leadership, the RANZCOG board.

Table 1. RANZCOG committees

Committee Type	Number of Committee members	Female committee members
RANZCOG board*	7	14% (1)
Members 10th RANZCOG Council*	25	36% (9)
National Chairs*	62	31% (19)
Training & Assessment (T&A) State Chairs*	7	71% (5)
(ITP) hospital Coordinators#	32	53% (17)

**National positions #ITP = Integrated Training Program*

Data: RANZCOG Affiliated Hospitals & Universities With an O&G Department

The data from document review demonstrates that RANZCOG affiliated hospitals and university O&G departments demonstrate a gender leadership gap (Table 2 & 3). This gap closely aligns with the RANZCOG national committee statistics, with average female leadership being 26% for RANZCOG, 32% for RANZCOG affiliated hospitals, and 26% for university O&G departments in Australia and New Zealand.

Table 2. RANZCOG accredited hospitals Australia and New Zealand

Country or State	Number of hospitals	Number of department heads	Females in department head position
NEW ZEALAND	**12**	**26**	**57.7%**
NZ – North Island	10	18	72.2%
NZ – South Island	2	8	25%

AUSTRALIA	**86**	**256**	**22.7%**
NSW	25	55	27.3%
VIC	22	64	37.5%
QLD	16	30	26.7%
SA/NT	9	25	16%
WA	8	19	21%
ACT	3	6	33.3%
TAS	3	3	33.3%
TOTAL	**98**	**282**	**31.5%**

Table 3. Universities in Australia and New Zealand with O&G departments

Country	Number of Universities	Number of department heads	Females in department head position
New Zealand	2	3	66.6%
Australia	18	20	20%
TOTAL	**20**	**23**	**26.1%**

There were two notable outliers in the data. First, the North Island of New Zealand is an outlier with an overrepresentation in leadership, both at the hospital and university level. Significantly contributing to this is Auckland City Hospital, the largest O&G department in New Zealand, staffed exclusively by females in leadership. Despite this variation in intercountry hospital and university female O&G leadership representation, both countries had matched membership levels of desire for future/additional leadership, and matched levels of leadership barriers. Second, within Australia, Westmead hospital was a notable as an outlier with 80% female leadership. In contrast, amongst tertiary hospitals, Royal Prince Alfred Camperdown, Women's and Children Adelaide, and the Gold Coast University hospital, had no females in leadership.

Data: RANZCOG Survey

An online membership wide survey (Appendix 1) was disseminated via email on August 15th 2017, running for 21 days total, with a reminder email on day 14. A total of 770 responses were received (30.4% of members: 27.3% of male members, 33.1% of female members), with a 93% full completion rate.

Survey – Demographic Data

Survey responder demographics (Table 4) are statistically representative of RANZCOG membership trainee and specialist mix (p=0.32). The responder sample is however not perfectly representative of RANZCOG membership gender, with a statistically significant greater proportion of female responders than RANZCOG female members (p=0.0079). This is also true

for the specialist cohort, with a statistically significant greater number of specialist female responders than RANZCOG specialist female members (p=0.047). The responder sample of trainee gender is representative of the current RANZCOG trainee gender (p=0.319).

Table 4. Demographic findings from Survey respondents

What is your gender? (n=770)	**n**	**%**	**2017 membership**	**2017 specialist**	**2017 trainee**
Total Male	329	42.7%	47.6% (1205)	54% (1110)	20% (95)
Total Female	439	56.9%	52.4% (1325)	46% (945)	80% (380)
Other	3	0.4%	*N/A	N/A	N/A
What is your membership status? (n=770)					
Trainee	134	17.4%	18.7% (475)		
Fellow	637	82.6%	81.2% (2055)		
Age category (n=770)					
20-29	23	3%			
30-39	185	24%			
40-49	208	27%			
50-59	195	25.3%			
60-69	118	15.3%			
70+	42	5.6%			
Country of primary practice (n=770)					
Australia	638	82.8%	88.4% (2237)	86.3% (1773)	98% (464)
New Zealand	124	16.1%	11.6% (293)	13.7% (282)	2% (11)
Other	6	0.8%	0	0	0
Not practicing	3	0.4%	0	0	0

**N/A = Data not available from RANZCOG as not collected prior to July 2017.*

Survey – O&G Leadership Data

95% of survey responders answered questions pertaining to leadership (Appendix 1, q5 & q6), with 31% of respondents holding a current RANZCOG, University or hospital leadership position.

Male responders were statistical significantly more likely to hold current leadership roles than female responders (Table 5). This held true for male specialist, but not male trainee members. Both male and female specialist members were more likely to hold leadership positions than

both male and female trainee members. With regards to leadership aspirations, female responders were more likely to desire additional or future leadership positions than male responders (Table 6). Irrespective of site (RANZCOG, University or hospital), female specialists were statistically more likely to desire additional or future leadership positions (Table 7). This is significant, as responders in 'outlier' contexts that contained high levels of female leadership, expressed similar levels of desire than their colleagues in contexts with little or no female leadership. There was no difference observed between male and female trainees with regards to leadership position desire ($p = 0.279$).

Table 5. 'Do you currently hold a leadership positions within RANZCOG, University or your hospital?'

	All responders		Fellows		Trainees	
	Yes	No	Yes	No	Yes	No
Male	39.35%(122)	60.65%(188)	41.52%(120)	58.48%(169)	9.52%(2)	90.48%(19)
Female	24.76%(104)	75.24%(316)	30.03%(94)	69.97%(219)	9.35%(10)	90.65%(97)
ALL	32.05%(226)	67.95%(504)	35.77%(214)	64.23%(388)	9.38%(12)	90.63%(116)
p-value	< 0.001		0.003		0.979	

Table 6. 'Would you like to hold an additional leadership position now or in the future?'

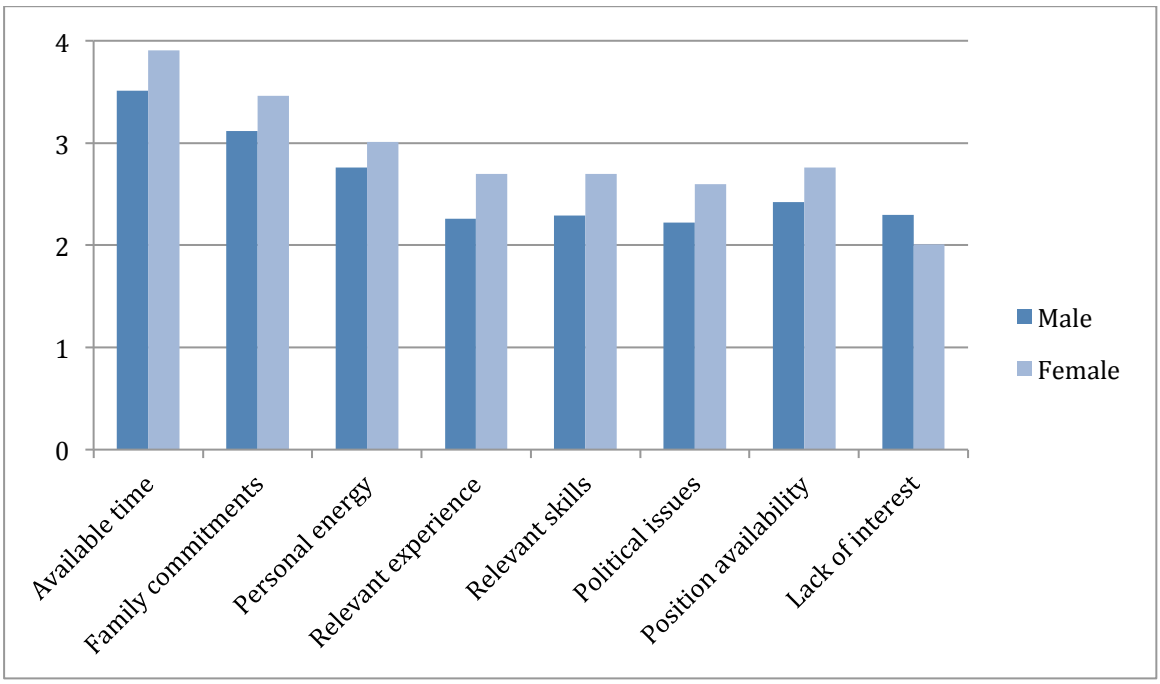
	All responders, both sites		RANZCOG		Within my hospital	
	Yes	No	Yes	No	Yes	No
Male	46.77%(145)	53.23%(165)	28.39%(88)	71.61%(222)	34.19%(106)	65.81%(204)
Female	62.38%(262)	37.62%(158)	40.24%(169)	59.76%(251)	47.62%(200)	52.38%(220)
ALL	53.58%(407)	45.42%(323)	34.32%(257)	65.68%(473)	41.92%(306)	58.08%(424)
p-value	< 0.001		< 0.001		< 0.001	

Table 7. 'Would you like to hold an additional leadership position now or in the future?' (combined sites) – All, Specialists and Trainees

	All responders		Specialist		Trainees	
	Yes	No	Yes	No	Yes	No
Male	46.78%(145)	53.22%(165)	43.94%(127)	56.06%(162)	85.71%(18)	14.29%(3)
Female	62.38%(262)	37.62%(158)	58.15%(182)	41.85%(131)	74.77%(80)	25.23%(27)
ALL	53.58%(407)	45.42%(323)	51.05%(309)	48.95%(293)	80.24%(98)	19.76%(30)
p-value	< 0.001		< 0.001		0.279	

The top four identifiable barriers (*available time, family commitments, personal energy and position availability*) to future leadership were consistent between genders (Graph 1). Women rated all identifiable barriers higher on average than their male counterparts, except for '*lack of interest*'.

Graph 1. 'What factors stop you from seeking a leadership position or additional leadership positions?' (Male vs Female)



0 - not significant, to 4 - very significant

Survey – O&G leadership thematic analysis

Twenty percent of responders who completed the quantitative survey responses on O&G leadership also provided free text comments to the question '*any comments regarding O&G leadership?*' Of the 146 members with free text responses, 51% were female and 49% male. Among the trainee sample only female trainees responded (<1% of overall responders).

As described in the methodology, Braun and Clark's thematic analysis framework (187) was used to facilitate identification of themes. Aiming for a snapshot of information, and some perspectives on aspirations and views about leadership, 'leadership barriers' emerged as the strongest theme in this section of responses.

Trainee responders

Among the female trainee responder cohort (n=14) the majority reported desiring leadership (62.4%), with more than 85% reporting an awareness of gender barriers to future leadership opportunities. Very few leadership positions are available for trainees. In keeping with this, only one trainee identified as currently holding a leadership positions. This was within RANZCOG as a trainee representative for the college council, an important place for trainees to voice their concerns or support for curriculum changes.

Female specialist responders

In response to the question '*any comments regarding O&G leadership?'*, the overwhelming singular theme from textual analysis amongst female specialists was that of 'leadership barriers'. This was found in 83% of female responder comments. Within this theme of 'leadership barriers', subthemes of 'disillusionment' (40% of responses), 'financial and time' barriers (27% of responses), and 'gender barriers' (22% of responses), and 'learning leadership' (13% of responses), were present.

Disillusionment

Comments demonstrating a 'disillusionment' theme most commonly pertained to members' disillusionment with the 'institution' of RANZCOG (46% of comments). These are found in Box 2. Acknowledging the enormous diversity that will exist within the RANZCOG membership, these comments reveal that these RANZCOG members do not feel authentically represented by their leadership. Other comments relating to disillusionment referred to hospitals or health systems cultures (Box 3).

Box 2

"college is very conservative and dominated by private male practitioners that are not representative of the trainees or fellows" (F, 50+, Australia)
"nothing more than an organised union of thugs who are there to protect the private sector mates club. Comparison with RCOG and in recent times ACOG are disgraceful and embarrassing" (F, 50+, Australia)
"serious concerns about the structure and viability of the current college staff environment. No confidence in current CEO" (F, 60+, Australia)
"RANZCOG leadership seems most interested in their own views and their colleagues pockets, not what is best for women. Also no respect for views of members" (F, 50+, Australia)
"it is very tightly controlled by a few who actively make sure that other potential leaders are not allowed to get a toe hold" (F, 50+, Australia)

Box 3

"*I have previously held leadership positions. The experience was frustrating with most responsibility and accountability with very little power to influence change"* (F, 50+, New Zealand)
"thankless to be in leadership in the DHBs in NZ and no real opportunity to effect change" (F, 40+, New Zealand)
"I have had enough of being a leader. For clinicians to pursue leadership, they need supportive administration, otherwise it is hell" (F, 60+, Australia)
"*health systems are increasingly out of the control of medical people, and leadership often feels futile and personally damaging"* (F, 30+, Australia)

Time and Financial Barriers

Responders indicated available 'time and financial' considerations were strong barriers to leadership (graph 1). This was further reflected in responder free text comments (Box 4). Among this responder cohort, comments on time as a barrier were more prevalent than financial barriers. This was particularly so amongst the under 50-year-old responders, and possibly reflects increased parenting demands within this age cohort. Within this subtheme responders explicitly referenced the impact of leadership on family time

Box 4

"a very large time commitment is involved in RANZCOG leadership, which incurs opportunity cost (lost income from paid work) or impacts on family time" (F, 40+, Australia)
"public health units are very inflexible regarding family time" (F, 40+, Australia)
"time and administrative support is often lacking" (F, 50+, New Zealand)
"time consuming and not renumerated" (F, 50+, Australia)
"it is difficult fitting all things in" (F, 40+, Australia)
"*very time consuming, bigger commitment than most people willing to make"* (F, 60+, New Zealand).

Gender Barriers

Many of the comments related to gender barriers revealed the common thread of 'denial of opportunity due to gender' (Box 5). Whether real or perceived, these comments suggests multiple issues including a system failure with the feedback process if unsuccessful applicants feel they are only left with 'gender' as a discriminator for promotion. It also strongly suggests

the process of selection needs improved transparency to ensure gender is not a real or perceived discriminator.

Box 5

"*men of same age and ability promoted ahead of women in hospital setting*" (F, 50+, Australia)
"*mostly male dominated and controlled. Males still have the majority of decision-making regarding appointments within hospitals and college. Often certain women that are chosen for a leadership role are those that are non-threatening and unlikely to advocate on behalf of rest"* (F, 30+, Australia)
"I have been denied leadership roles because of the male dominated atmosphere" (F, 60+, Australia)
"talent in young women is overlooked and undervalued" (F, 30+, Australia)
"male dominated and can still be difficult to break through the glass ceiling even when you are clearly the best (wo)man for the job" (F, 40+, Australia)

Learning Leadership

A further theme that arose within this responder cohort was that of training for, or 'learning leadership' (Box 6). These comments were strongly directed toward registrar training years, especially the early years of the formal training program, and were most prevalent amongst a younger age cohort (> 30 years). Interestingly, despite the dominant female leadership of New Zealand (Table 2 and 3), female responders from New Zealand equally commented on their desire to 'learn leadership'.

Box 6

"*lack of leadership training is an issue"* (F, 30+, Australia)
"*not enough training throughout the training years*" (F, 30+, New Zealand)
"minimal training opportunities for development of this during early training years" (F, 30+, New Zealand)
"*would appreciate more leadership training within O&G and opportunities to attend leadership workshops"* (F, 30+, Australia)
"it would be good if the college supported trainees and fellows in the early years of leadership" (F, 40+, Australia)
"I wish we had training on leadership during ITP etc training" (F, 30+, New Zealand)

Male specialist responders

Male responders contributed to 48.6% of the free text comments. The 'barriers to leadership' theme again predominated (60% of responders), and was followed by responders noting their past or current leadership role (31% of responders) as their only response. This is consistent with RANZCOG's historically masculinised leadership.

Within this theme 'barriers to leadership', the subthemes of 'disillusionment' (60%) ,'financial and time barriers' (22% of responses), 'learning leadership' (19%), and 'a changing of the guard' (16%) predominated. Among male responders there were no comments relating to 'gender bias' as a barrier to leadership. This was consistent with the lower self-reported prevalence of gender bias in the male specialist cohort (Table 8).

Disillusionment

Comments pertaining to the 'disillusionment' theme were most commonly focused towards the culture within the current leadership (68% of responses – Box 7), towards with RANZCOG itself (23% of responses – Box 8), and to administrative challenges (9%). Comments here suggested a strong sense of disenchantment and pessimism with past and/or current leadership position. Although present in the female specialist cohort, these were much more commonly seen amongst male respondents.

Box 7

"*could get backstabbed*" (M, 50+, Australia)
"*difficult when you are surrounded by megalomaniac bastards*" (M, 60+, Australia)
"*our profession has a dearth of effective authentic leadership at every level"* (M, 30+, Australia)
"*too many people want to grandstand"* (M, 50+, Australia)
"*quality of current leadership is underwhelming"* (M, 70+, Australia)
"*medical politics is even dirtier than state/federal politics"* (M, 60+, Australia)

Box 8

"*RANZCOG leadership has shown a lack of courage"* (M, 50+, Australia)
"*RANZCOG has elections that have a set pattern of ascendancy in a rigid old boys network that prevents other from outside joining and progressing through the ranks*" (M, 40+, Australia)

Time and financial barriers

Within this cohorts' free text comments 'time and financial barriers' was another common subtheme (Box 9). This correlated with responses seen from male responders in graph 1. Within this subtheme male responders made more comments on 'financial barriers' than with female responders. This may indicate a higher level of financial responsibility among the male responders, and/or the type of practice these responders work within (as public practice more commonly makes financial allowances for leadership activities).

Box 9

"under paid and under appreciated" (M, 60+, Australia)
"time constraints the most important barrier" (M, 60+, Overseas)
"leadership roles require time commitments that a busy clinician has great difficult with from all aspects, family, income, life balance" (M, 60+, Australia)
"remuneration discrepancies with the private sector keep many a good leader out of leadership roles" (M, 50+, Australia)
"I will only do it when I have time to do it properly" (M, 30+, New Zealand)

Learning Leadership

As seen with female responders, the theme of 'learning leadership' arose from male responders. These comments were strongly associated with the need to be taught leadership, and promote mentorship (Box 10). Interesting this cohort of responders was an older cohort compared to female responders raising these issues.

Box 10

"*we should have a module of training dedicated to clinical leadership, how to run a department, safety and quality, and mentoring. We should be better at teaching this stuff!"* (M, 60+, Australia)
"I have not recognised the college as being a resource for developing the necessary skills to be an effective leader" (M, 50+, Australia)
"there is no training" (M, 50+, Australia)
"*younger colleagues should be actively mentored"* (M, 60+, Australia)

Changing of the guard

A new subtheme arose from male responder free text comments that was not seen previously. This theme implied a 'changing of the guard', with responders looking to pass on their leadership knowledge and/or positions to the next generation, or to encourage a higher turnover

through RANZCOG leadership positions (Box 11). Responders among this theme report a higher rate of past and current leadership roles. A minority of responders countered the 'changing of the guard' theme, commenting, "*they should listen more to their tribal elders*" (M, 70+, Australia), and "*we have entered a new era of ageism"* (M, 70+, Australia). These were from respondents all over the age of 70 years, and possibly reflect perceived judgement of their leadership capacity reducing with age.

Box 11

"needs younger input, with less academic representation" (M, 70+, Australia)
"have previously had college leadership role – younger fellows now better suited" (M, 60+, New Zealand)
"*been there, done that, time for younger ones"* (M, 60+, Australia)
"younger colleagues should be actively encouraged and mentored as involvement is rewarding" (M, 60+, Australia)
"*too many old males running the show as far as college goes. Need shorted terms, faster turnover, less redundant long serving members"* (M, 40+, Australia)

Survey – Gender Bias Data

Question 9 of the survey (Appendix 1) asked responders *'have you experienced gender bias during your training or specialist years?'*, with just under half of all responders reporting gender bias (Table 8). Female responders were more likely to report gender bias than male responders. Among specialists, females were more likely to report gender bias than males. Within the trainee cohort, a trend toward higher levels of gender bias amongst female was present, but did not reach statistical significance. When analysed as separate cohorts, trainees were also more likely to report gender bias than their specialist colleagues (p=0.0057).

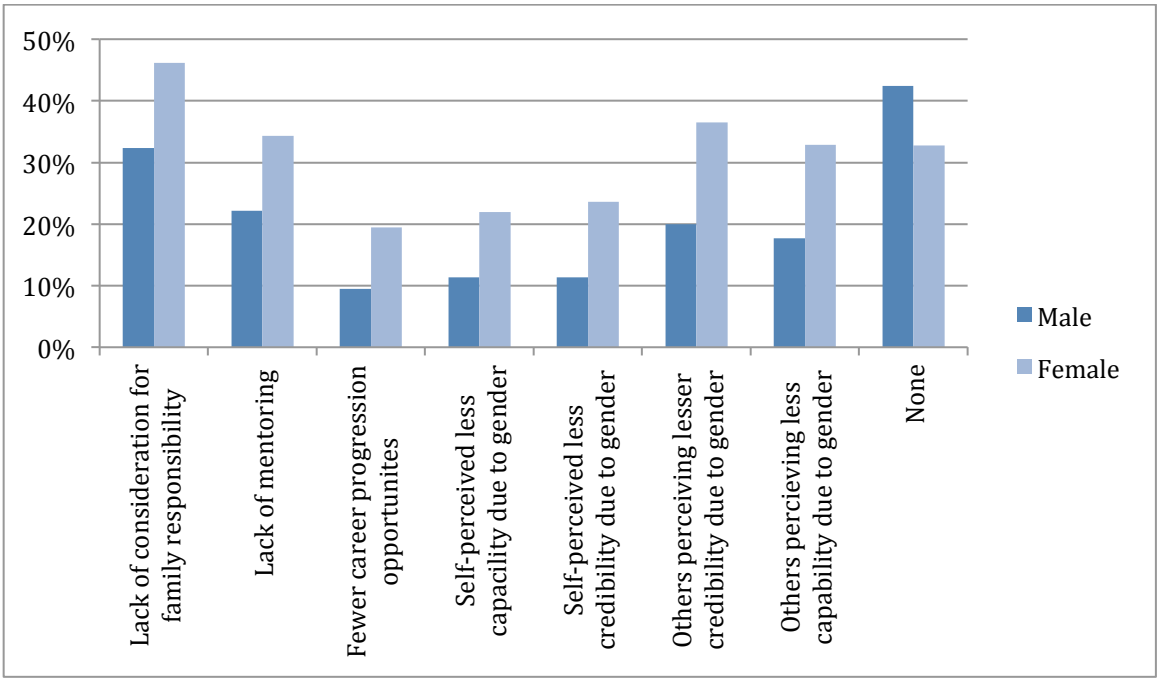
Table 8. 'Have you experienced gender bias during your training or specialist years?'

	All responders		Specialists		Trainees	
	Yes	No	Yes	No	Yes	No
Male	28.76% (88)	71.24 (218)	27.71%(79)	72.28%(206)	42.86%(9)	57.14%(12)
Female	54.01%(222)	45.99%(189)	53.07%(164)	46.93(145)	56.86%(58)	43.14(44)
ALL	41.38%(310)	58.62(407)	40.39%(243)	59.61(351)	49.86%(67)	50.14%(56)
p-value	<0.001		<0.001		0.241	

** Combined 'No' and 'Unsure', so comparing men to women answering 'Yes' versus 'Not Yes'.*

Question 10 of the survey (Appendix 1) was a closed question pertaining to gender biases that limit leadership, with eight listed answer options. In response to this question, '*what gender biases, if any, do you believe exist for trainees and specialists that limit leadership opportunities*?', responders identified 'lack of consideration for family responsibilities', 'others perceiving a lesser credibility due to gender', 'lack of mentoring' and 'others perceiving a lesser capability due to gender', as the leading four biases (graph 2). There were however significant differences across female and male responders. Female responders listed 'lack of consideration of family responsibility' (46%) as their most prevalent gender bias. This remained true for both female trainees and female specialists. In contrast, male responders listed 'none' as the most common (43%) gender bias that limit leadership opportunities. Within the male trainees cohort family responsibilities (33%) was the most common gender biases. Of interest mentoring ranked as a third most prevalent gender biases for female trainees, but did not reach the top five for male trainees, suggesting improved mentoring opportunities for males trainees.

Graph 2. 'What gender biases, if any, do you believe exist for trainees and specialists that limit leadership opportunities?'



Survey – Gender Bias Thematic Analysis

Twenty percent (20%) of survey responders provided free text responses to the question '*any comments regarding O&G gender bias?*'. Using the same inductive thematic analysis (187) approach described above, coded themes from the data set were identified.

Trainee responders

Trainee responses represented less than 1% of the free text comments. All three male responder comments reflected awareness that both males and females could experience gender bias. One example of this was "*have observed in different departments biases towards both genders*" (M, 30+, Australia).

The 17 female trainees responding with free text comments held subthemes reflecting the statements: 'female gender bias *is* present' (12/17), 'we risk male gender bias' (3/17) and 'gender bias does not exist' (2/17). Although the majority of respondents acknowledged gender bias could exist for both males and females, comments strongly weighted toward female gender bias (Box 12). Two responders noted experiencing gender bias from other females, with an example from one responder: "*women need to be aware that they themselves hold gender bias against other women. Women hinder other women from leadership"(F, trainee, 30+, Australia).*

Box 12

"*despite being in a predominantly female department, there is very much a bias*" (F, 40+, New Zealand)
"some gender bias is intrinsic to working as a doctor in a field that was previously male dominated. Patients sometimes see young women as nurses/midwives, with male medical students perceived to be higher role in the clinical team" (F, 20+, Australia)
"I have had assumptions made about the direction I intend my career to go based on my gender" (F, 30+, Australia)

Female specialist responders

Female specialist responses contributed to 50% of free text comments. The prevailing theme for this cohort was that of 'female gender bias *is* present' (57%). Fourteen percent (14%) of responders indicated they did not believe gender bias existed either in their own institutional setting or in the broader speciality. Other comments included those noting 'gender bias is improving' (11%), 'we risk male gender bias' (8%), and 'males are now under-represented' (5%). No comments refuted the presence of gender bias.

Female gender bias is present

Several data extracts involving the theme 'female gender bias *is* present' were made. Some described personal stories, one alluded to the pipeline', while others acknowledged the gender biased culture around them (Box 13).

Box 13

"*I know several females who were overlooked for head of unit positions that were given to less qualified males. It is still happening"*(F,40+, Australia*)*
*"I recognise it more and more as I get older"(*F, 50+, Australia*)*
"I am so dismayed and depressed by what I see around me that I am planning to leave the profession as soon as possible" (F, 50+, Australia)
*"there are lesser credentialed men getting positions of leadership and career pathways mapped out for them on the basis of nepotism old school networks and gender bias all the time"(*F, 40+, Australia*)*
"6 board members, one woman. How many council members are women? Not many. Speaks for itself really"(F, 50+, Australia)
"men in positions of power see younger men as natural successors. CREI committee 100% male" (F, 30+, Australia)
*"it is very persistent despite the larger number of women in the profession"(*F, 30+, Australia*)*

Within this theme of 'female gender bias *is* present', subthemes of 'lesser capable surgically' (Box 14) and 'pregnancy and parenting' dominated (Box 15).

Box 14

'*females not considered real surgeons, unable to balance fertility, training and professional lives, 'only busy coz they are females '... every. Single. Day. So over it"* (F, 50+, Australia)
and *"didn't' find this to be an issue until I started being seriously interested in complex gynae surgery. Then came across perceptions about how I would not be as good after I had kids"* (F, 30+, New Zealand)

Box 15

"I have received significant gender bias - verbally stated that didn't want female trainees as they were difficult personalities to work with and took too much time off for family purposes" (F, 40+, Australia)
"I have experienced direct bias during training due to pregnancy – not offered training role even though I was the most experienced registrar, on the basis on pregnancy alone"(F, 50+, Australia)

As noted amongst the female trainee responders, the following statement provided an insightful recognition that females too can all hold female gender biases: *"bias even from female training supervisor – got away with comments about female registrar than a male supervisor would have*

dared passed judgement on"(F, specialist, 40+, New Zealand). Recognising our own implicit biases is an invaluable step towards challenging all biases (42). Interesting these comments came from both Australian and New Zealand responders, with the later location the outlier for higher levels of female representation in leadership.

Male specialist responders

Male specialists provided 38% of the free text comments to the question '*any comments regarding O&G gender bias?*'. The majority (48%) of comments pertained to the theme 'male gender bias *is* present' (see below). Eighteen percent (18%) of responders indicated gender bias no longer existed, or was never present, in O&G. Examples of this are included in Box 16. Counter to this cohort were the 17% of male specialist comments that pertained to the presence of female gender bias (Box 17).

Box 16

'I have not personally seen any gender bias in the field of O&G' (M, 60+, Australia)
"*these biases no longer exist in the hospitals and university within which I work"*(M, 50+, Australia)

Box 17

"*I know of female trainees concerned about having a pregnancy and how it will affect this years job and hence getting a job for next year*" (M, 50+, Australia)
"training institutions and some directors still hold that women are not as good as males, despite the current numbers of female trainees" (M, 70+, Australia)

Male gender bias is present

The overwhelming singular theme in response to '*any comments regarding gender bias'* was that of 'male gender bias *is* present' (Box 18). This was present in 48% of free text comments from male specialist responders. Within this theme existed a subtheme of 'patient preference for female providers' (Box 19). Within the public system, consumer choice is balanced, often at odds, with the training needs of males within the profession.

Box 18

"have witness female trainees getting more training and attention from male supervisors than myself" (M, 50+, New Zealand)
"*it's a real thing'. Men are treated as second class citizens"* (M, 50+, Australia)

"with less men in the workforce I see more bias to men than the opposite traditional gender bias of previous years" (M, 60+, overseas)
"if bias existed before it has now swung the other way and possibly too far" (M, 50+, Australia)

Box 19

"marked gender bias with patients preferring female clinicians"(M, 30+, Australia)
"*it is clearly a major issue for young male trainees and young male consultants"* (M, 50+, Australia)
"*as a male, many patients choose not to or complain about seeing me"*(M, 40+, Australia)
"*male medical students interested in obstetrics often miss out on procedures and bed side examination because of their gender"* (M, 70+, Australia)

Survey – Gender quota Data

Questions 12 and 13 asked responders about quota use within RANZCOG with the following questions, '*should RANZCOG consider a gender quota system for federal council* and *state councils?'*. The majority of responders opposed quota use for federal and state council (63% and 65% respectively, Table 9). This remained true among specialist (66%) and trainee responders (50%). Between genders, female responders were statistically significantly more likely to support gender quotas, compared to their male colleagues, at both federal and state level.

Table 9. Gender quotas

	Federal council			**State council**		
	Yes	No	Unsure	Yes	No	Unsure
Male	13.1%(40)	77.4%(236)	9.5%(29)	12.46%(38)	77.38%(236)	10.16%(31)
Female	29.02%(119)	52.44%(215)	18.54%(76)	28.54%(117)	52.44%(215)	19.02%(78)
ALL	22.24%(159)	63.08%(451)	14.68%(105)	20.5%(155)	64.91%(451)	14.59%(109)
p-value	<0.001*			<0.001*		

**'No' and 'Unsure' were combined to indicate 'Not Yes' in the statistical analysis.*

*Statistical significance remained when comparing 'Yes' and 'No' **and** 'Yes' and 'Not Yes'*

Survey – Gender quota thematic analysis

Among the 93% of responders who answered questions on gender quotas (q 14, Appendix 1), 33% provided written comments to the question '*any comments regarding gender quotas?'*. This question attracted the highest number of free text responses from the survey. Within these

responses 63% of respondents articulated their opposition to gender quota use, similar to the 63% and 65% that opposed federal and state council quotas seen in table 9.

Male trainee responders

Six of the 21 male trainees (29%) provided written comments on gender quota. Here an equal proportion of responders supported (3/6) and rejected (3/6) the proposal of quota use. Trainees opposed to quotas expressed statements including merit including '*use the most capable, qualified and motivated person for the job no matter what gender*' (M, 40+, New Zealand) . Those trainees in favour of quotas expressed statements including '*I believe gender quotas, in general, are a good idea. Both, so that the representation is more representative, and because I believe better gender balance makes for better leadership*' (M, 30+, Australia).

Female trainee responders

Of the total 111 female trainees, 23 (21%) provided free text comments on gender quota use. Seventy eight percent (78%) of responses indicated an opposition to gender quota use, with 'merit first' as the sentiment expressed by over 95% in this cohort. Comments reflecting this included; *"should be talent, interest and ability based alone"* (F, 30+, Australia), and "*it should be person who's best for the job*" (F, 20+, New Zealand). It is worth acknowledging one outlying comment; '*gender quotas are unfair to people with potential, but do not belong to a specific gender*' (F, 30+, Australia). This comment challenges traditional binary gender identities, risking discrimination against those who identify as neither male nor female.

Free text comments from female trainee responders who supported gender quotas included; "*minimum quotas should be introduced for both genders. Currently there are fewer female specialists holding leadership roles with RANZCOG. As the number of female specialists increase, there will be under-representation of male specialists"* (F, 30+, Australia). This potential impact on male representation within RANZCOG leadership was also expressed by three of the responders who opposed gender quotas.

Male specialist responders

Male specialists represented 44% of the responders commenting on gender quota use, with seventy eight percent (78%) of responders indicating they did not support gender quotas. The statement 'best person for the job' reflected the dominant theme, with 'merit' (51%) and 'the

pipeline' (26%) the subtheme present within this responder cohort. Other comments remarked on the importance of 'equality for all' and consideration for a 'gender quota' minimum.

Best person for the job

Within the theme 'best person for the job', merit dominated as the criteria for this. Free text comments reflecting this theme are included in Box 20. Further to these were comments pertaining to the 'pipeline', that female numbers alone would naturally correct the leadership gender gap (Box 21). Within the free text responses were a small number of statements (6) reflecting awareness that barriers might limit women seeking/achieving leadership. These are included in Box 22.

Box 20

"*I always believe best person for the job"*(M, 40+, Australia)
"get best person for position regardless of gender" (M, 70+, Australia)
"merit should be the only consideration" (M, 50+, Australia)
"should be based on 'qualifications' for those roles" (M, 60+, Australia)
"*the most capable people ought be representing us, regardless of gender"* (M, 50+, New Zealand)
*"skill is more relevant than gender"(*M, 70+, Australia*),*
"*selection/election should be based on merits and leadership ability"*(M, 60+, Australia)

Box 21

"*The historical anomaly of very few women in our profession has now been corrected (overcorrected substantially). It stands to reason that by sheer weight the numbers women will dominate all college positions in the future*" (M, 50+, Australia)
"*gender ratios in RANZCOG leadership groups will reverse in coming years due to significant feminisation of workforce*" (M, 50+, Australia)
"*I think weight of female trainees/fellows will address the imbalance in the near term*" (M, 50+, Australia).

Box 22

"I think we need to work harder to engage more of the Fellowship, make it easier for women to attend and encourage them to nominate" (M, 60+, Australia)

"*There are better ways of increasing the number of women in leadership roles. Like this questionaries' should do, identifying barriers and addressing them is a better strategy*" (M, 50+, Australia)
"*70% female recruitment to training programs should see greater than or equal to 50% representation on state councils within a decade. If not, the fellowship should ask why?"* (M, 60+, Australia).

Female specialist responders

Among the female specialist responders, 31% provided free text comments on gender quota use. Just over half of this cohort (56%) expressed an opposition to quota use at RANZCOG. The variation in opposition rates to gender quotas between male and female specialists were consistent with difference seen between genders seen in Table 9.

Within the responses opposing gender quotas use, the statement 'best person for the job' again resonated as the dominant theme. Within this 'best person for the job' theme, 'merit' (66%) and 'the pipeline' (12%) again represented the subthemes. Free text comments reflecting 'merit' are included in Box 23, and 'pipeline' in Box 24. The 'merit' subtheme reverberated strongly among both male and female specialists. Within this female specialist cohort, 50% of responders provided actionable changes that could reduce barriers to women seeking leadership including; "*what needs to happen is that the practicalities i.e. meetings by tele conference, decentralisation, move exams out of central Melbourne - this will allow much wider participation*" (F, 50+, Australia).

Box 23

"*the most qualified or suitable person should get the position, irrespective of gender, race or colour*" (F, 40+, Australia)
"*appointments should be based on interest, motivation, passion*" (F, 60+, Australia)
"The best candidates should hold positions regardless of gender" (F, 30+, Australia)
"I think people need to get there on merit. I think we have to ensure the blokes have got there on merit too (not just because of mates)" (F, 40+, New Zealand)
"please choose the best qualified and skilled applicants for the councils, I am against gender quota" (F, 40+, Australia)
"quotas are to be despised. They work against everything that feminism has fought so hard for. Positions should be on merit, not tokenism" (F, 50+, Australia)

Box 24

"*as our college graduates more women I am sure this will change with time*" (F, 50+, Australia)
"*most trainees are now female and the quantity will rise*" (F, 50+, Australia).

Within the group of female specialist responders agreeing with 'gender quotas' use, 25% indicated a desire to have matched membership and leadership gender representation. Comments reflecting this subtheme of 'authentic gender representation' are included in Box 25. Another 23% of responders' responses suggested quotas provide a tool to 'highlight gender bias', 'change the culture' and 'reduce the gender leadership gap' and, at a faster rate than the 'pipeline' (Box 26).

Box 25

"It is worth consideration as the councils gender mix does not reflect that of the general college" (F, 30+, Australia)
"*look at college membership and then make it gender representative*" (F, 50+, Australia)
"*should reflect the makeup of trainees ie we have a predominantly female workforce now but leaderships roles are still heavily dominated by males"* (F, 40+, Australia)
"*gender ratios should be proportional to fellow/ trainee gender ratios*" (F, 40+, Australia)

Box 26

*"Gender quotas help to ensure that all voices are heard despite the continuing bias against women" (*F, 30+, Australia)
*"Need quotas otherwise the problem is not highlighted" (*F, 50+, Australia*)*
"I think that gender quotas are only useful as a short term solution to intractable discrimination, to break down barriers and develop role models" (F, 60+, Australia)
"the playing field at the top end is not level. Quotas as a transitional tool can help RANZCOG achieve leadership equity. Once leadership is equitable, then can be slowly tapered off" (F, 50+, Australia)
"*voluntary system too slow, need affirmative action*" (F, 40+, Australia)
"*trickle-down isn't working for us, so let's go with quotas"* (F, 40+, Australia)
"*there is good evidence, from corporate models, that gender quotas do redress the uneven balance of men in management roles*" (F, 50+, Australia)

Survey – Survey conclusion thematic analysis

Participants were invited to submit concluding comments at the end of the survey following the statement; '*thank you taking the time to complete this survey…if you would like to add any additional comments please do so below*'. From the 770 survey respondents, 63 (8%) choose to write free test comments. The dominant theme within this concluding section was '*solutions to reducing structural barriers for leadership'*. Comments reflecting this only came from female responders (Box 27), and added practical steps to the suggested solutions to gender leadership equality in the gender quota sub-section of the results.

Box 27

"*a public campaign to increase female participation, consider stipends/reimbursements that cover travel and childcare, create female sponsor networks"* (F, 40+, Australia)
*"I would suggest that job-sharing for RANZCOG committee positions be considered, as we did originally for job-sharing in training positions. (*F, 50+, Australia)
"create job sharing for RANZCOG committee positions" (F, 40+, Australia).

A smaller cohort of responders (mostly males), from both Australia and New Zealand referred back to their concerns that the feminisation of our specialty will reduce future opportunities for males. This was nicely summarised in the following statement; "*there were 21 applicants for the interview to join the program last week. One was male. "Huston, we have a problem!"* (F, 50+, Australia).

Discussion

This project obtained a snapshot of the gender of those in obstetrics and gynaecology leadership positions within Australia and New Zealand. This was done in the settings of RANZCOG, RANZCOG accredited hospitals, and university O&G departments.

It was clear from this research that RANZCOG's national committees, and RANZCOG's affiliated hospitals, do have a gender leadership gap (Table 1 & 2). As seen in recent publications by Hofler *et al* and Ricciotti *et al* investigating the United States, this finding is consistent with the international O&G gender leadership landscape (8, 11, 12, 14). Following on from Ricciotti *et al*, our study also demonstrated geographical variation in leadership, with the North Island of New Zealand a clear outlier. Here Auckland City Hospital, with its all-female leadership, strongly influenced this distribution. Despite leadership position geographic variation, our survey data revealed equal rates of 'desire for leadership', and 'barriers to leadership' between Australian and New Zealand. It is not known whether this reflects views from the North or South Island, as this level of geographic granularity was not collected. Exploring the 'leadership culture' of the Auckland department might shed light on possible solutions to the gender leadership inequality in other institutions.

Within RANZCOG's state T&A and hospital ITP positions, female leadership was found to more closely reflect the membership (Table 1). This finding of equal or over-representation in 'educationally related' and 'mid-level' leadership roles has been noted previously for females in both medicine (12, 67, 91, 197) and other professions (89, 154, 198, 199). This again mirrored the findings from Ricciotti *et al*'s recent study of O&G in the United States (14), and may reflect the previously reported cultural bias of women becoming teachers (174). The reasons for the larger proportion of women in these educational leadership roles was unclear from our study, but again highlights the uncertainty of a pathway to top-level leadership when mid-level leadership does not predict progression to this.

The secondary aims of this study were to explore RANZCOG members' experience and perspectives, desires, and barriers to leadership. Survey demographics did not perfectly represent the membership (Table 4), receiving a higher response rate from female RANZCOG members than male. This potential source of bias needs to be acknowledged, especially as sample representativeness appears to be more relevant than sample numbers (200). Nonetheless as the most important sample analyses were comparisons *between* genders, it is unlikely that this effects the conclusions. The reason for the responder-membership gender discord is uncertain,

but may represent higher levels of desire for leadership among women (Table 7), driving their participation in the survey.

Consistent with RANZCOG, university departments, and hospital data, this survey demonstrated the highest prevalence of leadership to be among male responders (Table 5). Acknowledging the historically masculinised workforce, yet recent feminisation, it is these findings that provoke questions on why females are under represented in O&G leadership.

One consideration for the gender leadership gap stems from desirability. Do females desire leadership differently than males? This survey found females were actually *more likely* to desire additional or future leadership positions than male colleagues (Table 7), consistent with the broader medical literature on female leadership desirability (57). Notably this held true for the specialist responders, while both male and female trainees had equal levels of leadership desire (Table 5). For both genders, age above 50 years was associated with lesser desire for future leadership. As this cohort represents the age majority of current leaders, it may reflect attainment of leadership and the possible anticipation of retirement.

With an anticipated finding of leadership under-representation, but a new finding of high desirability, this study explored barriers that contribute to the 'glass ceiling' for females. Male and female responders revealed the same top four identifiable barriers to future leadership (*available time, family commitments, personal energy, and position availability;* Graph 1**,** Appendix 1 q7), but with a higher prevalence among female responders. This is consistent with literature revealing females are more negatively affected by parenting commitments and impediments to medical careers (5, 201-203). Again reinforcing their desire for leadership, 'lack of interest' was a less prevalent reported barrier for women than male colleagues for this question.

Parenting issues influencing leadership or career opportunities were present for both genders, but much more prevalent among female specialists. This issue is not unique to O&G and exists in many areas of medicine (204, 205). This suggests a strong societal bias to gender expectations with regards to parenting, with strong historical cultural roots. Currently members are required to individually advocate themselves for issues such as part-time positions, extended parental leave, and access to childcare and feeding rooms within institutions. As a professional body that supports childbirth, RANZCOG is well positioned to challenge these norms by shifting the culture and advocating for these flexible and inclusive opportunities.

Two unexpected themes emerged within responders' comments on barriers to leadership. The first was of 'disillusionment', and was strongly weighted toward 'RANZCOG' among female

specialists, and the 'current leadership' among male specialists. Leadership, both for individuals and institutions, is challenged if there is poor membership engagement (206-208), and within our study 'disillusionment' responses increased in frequency with increasing responder age. This suggests further authentic engagement is required, from both RANZCOG and RANZCOG leaders, if we are to improve and sustain leadership desirability and diversity. The second unexpected theme was 'learning leadership'. It is important to note that there is no formalised RANZCOG leadership curriculum (182). Instead it falls to the individual to meet leadership-training needs through opportunities with other non-RANZCOG institutions. Even respondents in areas with high levels of female leadership (eg. New Zealand) identified the need for further leadership training. If as a profession we seek gender equity within the leadership landscape, then opportunities for specialists and trainees alike to develop leadership skills should be provided (38, 40, 209).

Leadership has many styles, with context an important consideration for achieving leadership success (35, 36, 39-41, 43, 48, 82, 194). Feminist leadership is more commonly associated with a democratic or participatory style (41, 42). Within Eagly *et al*'s meta-analysis, female leaders were found to be more transformational than male leaders (38), with previous findings that transformational leadership produces higher levels of effectiveness and engagement (40). Should RANZCOG take up the challenge of leadership training, the recognition of 'gendered' leadership traits and the value of feminist leadership may lead to improved diversity and subsequent engagement with members.

In the recently published 2017 McKinsey and Company report (210), women in healthcare leadership remain under-represented across the United States. The finding for women within medical leadership across Australia is similar (97). Gender bias has been long recognised as a contributor to the 'sticky floor' and 'glass ceiling' that challenges women desiring medical leadership (15, 29, 30, 34, 60, 93, 130). Gender bias was also a highly recognised barrier to leadership among female responders in this study (Table 8). This persisted across all ages, across trainee and specialist cohorts, and across countries, with females ranking gender-biased perceptions of 'lesser credibility' and 'lesser capability' higher than their male colleagues. This perception aligns with previously reported 'credibility and capability' data (211), revealing lower levels of perceived performance for females in leadership, even when matched as 'effective leaders' (88).

Subthemes of 'lesser capable surgically' and 'pregnancy and parenting' were noted among female responders. This issue of perceived reduced skill capability due to pregnancy or parenting

is a known gender bias previously reported within the surgical arena (212). Promoting female surgeon role models, providing mentoring, appreciating the presence of implicit gender biases, reducing structural barriers to accommodate for parenting and careers, have all played roles in reducing this bias in surgical specialties (29, 213, 214). RANZCOG could benefit from focusing on these issues to ensure all members have equality in surgical training.

Both male and female responders raised a new theme of 'male gender bias', although this predominated from male specialists. Here gender discrimination sources were reported from institutions, consumers, and colleagues. This presents a unique challenge to obstetrics and gynaecology. Should institutions respond to consumer choice for female providers, often at odds with the training needs of male doctors within the profession? And do we risk further male discrimination as obstetrics and gynaecology is increasingly feminised? Levensen *et al* acknowledged this concern in medicine over a decade ago (215), going on to suggest feminisation could lead to a reduced status of the profession and potentially lower incomes. Although these specific concerns were not raised within this study, concerns over reduced opportunities for same-sex mentoring and role modeling (213), fewer full-time workers (108, 216), patient reluctance for male providers, and reduced male participation within the specialty, were all noted. This is a very real issue for RANZCOG's future.

Gender quotas, utilising positive discrimination, provide one avenue to improve gender diversity in organisations (217). From the study's data it was clear that responders want gender leadership equality, but not *equity*. This was suggested by the overwhelming prevalence of the 'best person for the job' theme when expressing opposition to gender quotas. Concerns were expressed that highly qualified male councilors may be overlooked by a quota system, reducing the expertise of RANZCOG leadership, and that gender quotas create negative stigma, threatening the legitimacy of women perceived to be 'token' rather than valued for professional skills and attributes (218, 219). Although debunked in research of other professional groups (124), these concerns have yet to be evaluated within the medical profession and are worthy of consideration.

Multiple solutions are required to address the gender leadership gap in medicine, and many have been trialled successfully (16, 116, 135, 141, 146, 171, 220, 221). These include addressing organisational culture, providing mentoring and sponsorship, offering flexibility to workplace structures that support parenting and lifestyle considerations, leadership training, and adopting gender equality and anti-discrimination policies. It also calls for women to build self-efficacy (222), and challenge the gender culture that women have often been born into (72). Responders within our study mentioned all these possible solutions.

Limitations of our study include the discordance between membership and survey responder gender demographics, and the necessarily narrow definition of leadership, excluding leadership roles outside RANZCOG, Universities, and public hospitals. Future study in this field may benefit from expanding the leadership definition, the application of incentive to improve survey response, the use of paper or face-to-face surveys, and in-depth interviews with successful female leaders to establish their leadership pathways.

In conclusion, this study shows that a gender leadership gap is present within RANZCOG affiliated obstetrics and gynaecology. Members of RANZCOG reveal differing opinions of leadership desires, gender bias and the role of gender quotas. Suggested solutions include leadership training, reducing structural barriers to leadership, improving awareness of gender biases, acknowledging the risk of male discrimination in our increasingly feminised speciality, and improved engagement from RANZCOG with the wider membership. Notably this study's findings are not unique to obstetrics and gynaecology, or to the broader field of medicine.

An awareness of the leadership barriers revealed through this research provides RANZCOG with an opportunity to engage with membership-driven solutions towards achieving leadership gender equality. In turn, this might drive cultural gender leadership change, not just for RANZCOG, but for the broader community invested in women's healthcare. Now is the time for RANZCOG to lead the way to gender leadership equality.

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Appendices

Appendix 1 – RANZCOG members leadership survey

Background

This 5 minute survey aims to collect data on leadership among RANZCOG trainees and specialists.

Involvement in this survey is voluntary. Data collected from this survey is anonymous. Participants are free to withdraw consent at any time, and to withdraw any unprocessed data previously supplied. The purpose of the project is for research only.

This survey has been created as part of a University of Melbourne Masters of Clinical Education project. Project supervisors are University of Melbourne academics A/Prof Clare Delany and Dr Jessica Gerrard. Ethics approval was obtained from the University of Melbourne. Data from this survey will be used for publication in a mini-thesis and in the ANZJOG. Data will not be disseminated to any third party.

To indicate your consent to participate in this survey please click on the next box to commence the first question.

Thank you for your time and consideration in participating in this survey.

Kind regards,
Kirsten

Dr Kirsten Connan
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Please contact Dr Kirsten Connan if you have any further questions relating to this survey.

RANZCOG statement: This survey has been approved for distribution by the Royal Australian and New Zealand College of Obstetricians and Gynaecologists. Approval by RANZCOG in no way constitutes ethics approval nor endorses the statements or opinions expressed in the survey or any publication arising from the survey's data or its interpretation.

Demographics

* 1. Please select your gender:

- ◯ Male
- ◯ Female
- ◯ Other

* 2. Please select your RANZCOG membership status:

- ◯ Trainee
- ◯ Fellow

* 3. Please select your age category:

- ◯ 20 - 29 years
- ◯ 30- 39 years
- ◯ 40 - 49 years
- ◯ 50 - 59 years
- ◯ 60 - 69 years
- ◯ 70 years +

* 4. Please select your country of primary practice:

- ◯ Australia
- ◯ New Zealand
- ◯ Not in current practice
- ◯ Other (please specify)

Leadership positions

Leadership positions include:

- **RANZCOG president**
- **RANZCOG councillor (federal or state)**
- **RANZCOG committee, sub-committee, working party & advisory group member**
- **University departmental chair - O&G**
- **Hospital director, deputy director**
- **Hospital head of department - O&G**
- **Hospital head of unit - O&G**
- **ITP/ATP RANZCOG coordinator**

* 5. Do you currently hold a leadership position within RANZCOG, University, or your hospital?

- ◯ Yes
- ◯ No

* 6. Would you like to hold additional leadership positions now or in the future?

- ☐ Yes - within RANZCOG
- ☐ Yes - within my hospital
- ☐ No

* 7. What factors stop you from seeking a leadership position or additional positions?

	Not significant		Moderately significant		Very significant
Available time	◯	◯	◯	◯	◯
Family commitments	◯	◯	◯	◯	◯
Personal energy	◯	◯	◯	◯	◯
Having relevant experience	◯	◯	◯	◯	◯
Having relevant skills	◯	◯	◯	◯	◯
Political issues	◯	◯	◯	◯	◯
Position availability	◯	◯	◯	◯	◯
Lack of interest	◯	◯	◯	◯	◯

Other (please specify)

8. Any comments regarding O&G leadership?

Gender bias

Gender bias can be defined as an inclination towards or prejudice against one gender. It can be experienced by both males and females.

* 9. Have you experienced gender bias during your training or specialist years?

- ◯ Yes
- ◯ No
- ◯ Unsure

* 10. What gender biases, if any, do you believe exist for trainees and specialists that limit leadership opportunities?

- ☐ Lack of consideration for family responsibilities
- ☐ Lack of mentoring
- ☐ Fewer career progression opportunities
- ☐ **Self**-perceived lesser **capability** due to gender
- ☐ **Self**-perceived lesser **credibility** due to gender
- ☐ **Others** perceiving lesser **credibility** due to gender
- ☐ **Others** perceiving lesser **capability** due to gender
- ☐ **None**

Other gender bias (please specify)

11. Any comments regarding O&G gender bias?

Gender quotas

Gender quotas define a minimum number of positions that must be held by members of each gender, either as an absolute number, or a fraction of total available positions.

* 12. Should RANZCOG consider a gender quota system for **federal council**?

- ◯ Yes
- ◯ No
- ◯ Unsure

* 13. Should RANZCOG consider a gender quota system for **state councils**?

- ◯ Yes
- ◯ No
- ◯ Unsure

14. Any comments regarding O&G gender quotas?

Thank you

15. Thank you taking the time to complete this survey. Results will be available in an ANZJOG article.

If you would like to add any additional comments please do so below.