

Journal Pre-proof

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SUPPORT: SURvey of Parental Leave POLicies of RadiaTion Oncology Programs and Residency Applicants

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Abstract:

Purpose: Recruitment to radiation oncology training programs has recently declined, and gender inequities persist in radiation oncology. Policies which promote inclusivity, such as the updated ACGME parental leave policy establishing minimum parental leave requirements, may support recruitment to radiation oncology.

Methods and Materials: We surveyed 2021-2022 radiation oncology residency applicants and PDs about program-specific parental leave policies, transparency of parental-leave information during the residency application and interview process, and perceptions of the impact of parenthood on residency training, career advancement, and well-being.

Results: Of 89 radiation oncology PDs, 29 (33%) completed the survey. Of 154 residency applicants (current fourth year medical students, international applicants, or post-doctoral fellows) surveyed, 62 (40%) completed the survey. Most applicants planned to start a family during residency (53%) and report perceived flexibility to start a family influenced their decision to pursue radiation oncology over other career specialties (55%). Many applicants viewed time in residency (non-research, 22%), research (33%), and as junior faculty (24%) as the best time to start a family. A small number of applicants used program-specific parental leave policy information in determining their rank list (11%), and many applicants sought information regarding fertility healthcare benefits (55%). Despite this, many applicants obtained parental leave information verbally, despite expressing a preference for objective means (slide deck 63%, website 50%, or handout 42%) of information sharing. PDs were all supportive of a 6-week maternity leave policy (100% agree or strongly agree with the policy) and did not feel parental leave would negatively impact a resident's ability to pursue an academic or private practice career (100%, 100%).

Conclusions: Many radiation oncology residency applicants plan to start families during training, seek and value program-specific parental leave information and health benefits, and

prefer objective means of information sharing. These findings likely reflect those who have strong views of parental leave policies.

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Introduction

Recruitment to radiation oncology training programs has declined in recent interview cycles¹, and gender inequities persist in radiation oncology^{2,3} despite improved recruitment of under-represented minorities to medical schools nationwide⁴. Recruitment of women to radiation oncology has similarly increased at a slower pace relative to other male-dominated medical specialties⁵. To promote the recruitment and retention⁶ of a diverse oncology workforce, it is important to understand the needs of our future prospective trainees, including that of family support.

Updated policies from American College of Graduate Medical Education (ACGME)⁷ and American Board of Radiology (ABR)⁸ now allow programs to offer 6-12+ weeks of time for leave(s) of absence, including parental leave. Although many physicians will choose to start a family during residency training, we hypothesize that many may be unaware of the healthcare benefits and policies supporting parental leave in residency, in part due to heterogeneity in implementation of these policies and hesitancy to seek this information for fear of possible discrimination.

Previous studies have shown that residency applicants seek information regarding work-life balance and that there is a need for improved transparency in communicating parental leave policies during the residency interview process^{9,10}. Considering these national changes to parental leave policies that will affect future residents nationwide, we sought to characterize the state of parental leave policies in radiation oncology residency programs and examine how applicants prefer to obtain this information.

Methods:

We electronically surveyed all ACGME-accredited radiation oncology residency program directors (PDs) and prospective radiation oncology residency applicants to two partnering U.S. institutions during the 2021-2022 residency interview cycle. This study was determined to be IRB exempt, and Electronic Residency Application Service (ERAS) approval was obtained prior to distribution of the survey.

The 52-question survey for directors (Supplement A) included questions about demographics, program-specific parental leave policies (such as duration of leave, clinic coverage plans, accommodations for breastfeeding, etc.), and perceived impacts of parental leave on resident training and career advancement. The 53-question survey for residency applicants (Supplement B) included questions about demographics, experiences with parental leave policies based on the interview cycle, and perceptions of the impact of parenthood on residency training, career advancement, and well-being.

The surveys were distributed one week after the 2022 Match Day and remained open for 6 weeks thereafter. Each respondent was sent a unique link to prevent duplicate responses. Two follow-up reminders were sent every five days to participants who had not yet completed the survey. Participation was incentivized by lottery of five \$100 Amazon gift cards across both cohorts. Data were collected on REDCap, de-identified, and analyzed using R software. Fisher's exact test was used to evaluate response characteristics between groups.

Results:

Radiation Oncology Program Director and Applicant Respondent Demographics

Table 1 shows demographics for survey respondents. Of 89 radiation oncology PDs, 29 (33%) completed the survey. Of 154 residency applicants (current fourth year medical students, international applicants, or post-doctoral fellows) surveyed, 62 (40%) completed the survey. Of

PD respondents, 17% were men. In contrast, 44% of residency applicant respondents were men. Most (59%) PD respondents had children while only 10% of resident applicant respondents had children.

Program Parental Leave Policies

Table 2 shows parental leave policies of PD respondents' programs. Most programs (76%) employed at least 7 residents. Among all programs, 93% and 62% reported having a written policy regarding maternity leave and partner/non-birthing leave, respectively. Maximum time offered by programs for maternity and partner leave was 11-12 weeks (median) and 7-8 weeks (median), respectively. Average time taken for leave was a median of 7-8 weeks for maternity leave and 3-4 weeks for partner leave (Table 2).

Program parental leave policy was most often influenced by institutional policies (62%) followed by ACGME/ABR policies (38%) and individual program policies (31%). If an extension of leave was offered past the pre-specified parental leave duration (64%), flexible remote research elective (paid) was most used (75%).

During a leave of absence, clinic coverage was most distributed to attendings (66%) and co-residents (48%). Independent sources of financial support for parental leave were provided by 45% of programs. Five programs (17%) reported residents needing to use unpaid time off at some time during their leave.

Applicant and PD Perspectives on Parenthood in Residency

Of applicant respondents, most (53%) agreed or strongly agreed with the statement "I plan to start a family at some time during residency training" and most (55%) agreed or strongly agreed with the statement that increased perceived flexibility to start a family influenced their decision to

choose radiation oncology over other medical specialties. More females than males answered this statement affirmatively (63% versus 46%, $p=0.4$). Additionally, 23% of applicants agreed or strongly agreed they were likely to seek fertility services during residency, and 30% of applicants agreed or strongly agreed that they were likely to seek *information* regarding fertility services during residency.

Applicants felt that research time was the best time to start a family (33%), followed by time as a junior faculty (24%) and during residency (non-research time, 22%) (Table 3). Applicant responses were mixed regarding whether starting a family during residency would negatively impact their: residency training (49%), ability to pursue an academic career (47%), ability to pursue a private practice career (68%), and opportunities for career advancement (32%). Applicants additionally used free text responses to describe challenges of family planning as a physician: “[Parenthood is] never going to be easy and it's such a personal choice but hopefully the support will continue to increase at all stages.”

By contrast, PDs strongly felt that taking 6 weeks of parental leave would not negatively impact a resident's: clinical training, research productivity, ability to pursue a private practice or academic career, and/or pursue opportunities for career advancement (disagree or strongly disagree: 87%, 83%, 100%, 100%, 96%, respectively). All PD respondents agreed or strongly agreed with a minimum of 6 weeks parental leave for maternity leave.

Information Dissemination: Current and Desired Methods Reported by Applicants

Table 4 describes how parental leave policies were shared during residency interviews. Of applicant respondents, 68% affirmed these policies were presented at least once during their residency interviews. Of these, 76% reported that these policies were discussed at less than half of their interviews. Information about parental leave policies was most often obtained

through (may select more than one): personal conversations with residents (45%), followed by slide deck presentations (32%). PDs reported providing parental leave policy information verbally to candidates during the interview day (21%), only if asked (38%), or formally in slide deck presentations (28%) or handouts (17%).

In contrast, applicants reported preferring to receive parental leave information by (could select multiple options): slide deck (63%), program website (50%), handouts (42%), and conversations with residents (40%). Fewer respondents preferred to obtain this information from conversation with program directors (16%) or interviewers (15%). Of interviewers, applicants felt most comfortable discussing parental leave policies with residents and program coordinators and least comfortable with the department chair.

Free text responses additionally described hesitancy to seek information regarding parental leave policies for fear of discrimination during the interview process, such as concerns expressed by applicants who “did not want [interviewers] to hold any (even unconscious) concerns about my ability to devote time and energy toward residency training”.

Most applicants did not know how many weeks of maternity leave (67%), and partner leave (82%) their matched program provides. However, 75% of applicants knew where or whom they could speak with to find parental leave policies specific to their matched program.

Impact of Parental Leave Policies on Program Selection

Parental leave information influenced residency rank list for 11% of respondents; an additional 14% stated parental leave information did not influence their rank list because they were not provided with this information. There was no significant difference in response between male and female respondents (Table 5).

When reviewing a prospective program, both self-identifying male and female applicants reported that faculty and resident gender ratios influenced their rank lists (Table 5). Of female applicant respondents, 44% reported considering the number of female residents with children at a program as influential on their rank list, which was significantly higher than of male applicant respondents ($p=0.02$).

Discussion

This survey captures a snapshot of the current state of parental leave policies in radiation oncology residencies in the final year prior to the updated ACGME institutional requirements⁷ and provides insight to the gap that must be closed to provide equitable healthcare to new resident parents. While all programs must now provide 6 weeks of time for parental leave at least once during training, the policies as written leave flexibility up to each program to determine the length of time offered, source of financial support, and time designation. As such, there will naturally be differences across institutions in implementation. This is not necessarily a negative consequence, as flexibility will allow each program to address unique challenges with corresponding solutions tailored to each program. However, it is because of these differences that it is imperative programs strive to create transparency during interviews and present policies in an accessible, objective manner so that both residency applicants and current residents are aware of the support they will receive.

We found that most prospective radiation oncology applicants (53%) reported plans to start a family during residency. Work-life balance may play a role in recruiting prospective applicants to radiation oncology like what has been reported by other medical specialties¹⁰. Most respondents (55%) cited the increased perceived flexibility to start a family as influencing their decision to choose radiation oncology over other medical specialties. Interestingly, this insight expands

upon previously reported perceptions of radiation oncology being a “family friendly” specialty¹¹, and further shows prospective applicants consider this in their career decision making. While only 10% of radiation oncology applicant respondents used parental leave policy information in their residency rank list determination, a greater number used program demographics including faculty and resident gender ratio and the number of residents who have children (Table 5). The use of faculty and resident gender ratio by prospective applicants in rank list determination agrees with previous data demonstrating high baseline number of female physicians within a specialty to be predictive of gender diversity among medical specialties⁵, and data demonstrating positive correlation between the number of female faculty and residents at a program¹². Further, most respondents (53%) agreed they were likely to either seek fertility services or fertility service information at their prospective programs. Our findings demonstrate prospective radiation oncology applicants consider gender representation at potential programs, and value family planning information in making their residency program decisions.

Despite these findings, only 68% of applicants affirmed parental leave policies were presented during at least one residency interview, and most respondents were unable to recall the proffered parental leave at their matched program (68% unable to recall maternity leave, 82% unable to recall partner leave policy; survey sent one week after Match Day). The 2021 ACGME Institutional Policy update now mandates residents be allowed to take a minimum of 6 weeks paid leave during residency⁷. However, important details that will be necessary in implementing these policies, such as extent and source of financial support (leaving the possibility for sick time and vacation time to be used to supplement salary support) are not specified. Furthermore, consensus recommendations by societies such as the American Academy of Pediatrics (AAP)¹³, American College of Obstetrics and Gynecology (ACOG)¹⁴, and recently the American College of Radiology (ACR)¹⁵, recommend programs strive to provide 12 weeks of parental leave, which would be allowable under the ABR Residency Time Off criteria⁸. Therefore, though

a minimum of paid six weeks leave time is required by ACGME, heterogeneity in implementation of this policy is to be expected due to interpretation of time allowed and variation in resources of different departments and state disability policies. At the time of this survey, prior to implementation of the 6-week ACGME minimum parental leave, our findings show variation in parental leave policies across radiation oncology residency programs in terms of time offered, sources of financial support, and clinic coverage needed (Table 2).

Given this lack of standardization, it is imperative programs strive to create transparency when providing information regarding resident benefits. As one applicant described, “It is information I would greatly appreciate and definitely would have influenced my rankings”. Importantly, the ACGME 2021 policy update now requires “an applicant invited to interview for a resident/fellow position must be informed, in writing or by electronic means ... [the] institutional policy(ies) for vacation and leaves of absence, including medical, parental, and caregiver leaves of absence...”⁷. Our data from both applicants and PDs suggests a meaningful number of programs have presented parental leave data verbally (Table 4), despite many applicants citing hesitancy to broach the topic of parental leave due to perceived concerns of possible discrimination⁹. Verbal presentation may additionally have contributed to poor recollection of information presented. Based on the findings here, we encourage programs to maintain an updated program website and consider presenting parental leave policies in slide deck or handout materials in addition to their contract materials. Furthermore, we emphasize all benefits should be presented in this way, including those pertaining to reproductive benefits and fertility assistance. A substantial proportion of applicants in this survey answered affirmatively expressing a desire for information and services pertaining to fertility. Nearly one in four female physicians is diagnosed with infertility, at a significantly higher rate than the general population¹⁶. Given the heterogeneity in program benefits and statewide policies in the wake of the Dobbs Decision¹⁷ and most applicants expressing a desire to start a family during residency

training, it is imperative applicants can access all benefits information in an objective, non-discriminatory manner.

It is encouraging that radiation oncology PD respondents did not feel taking 6 weeks of parental leave would have a negative influence on multiple parameters of career development including: clinical proficiency, research productivity, and ability to pursue successful academic or private practice careers. This perspective is valued, as many applicants in this study expressed concerns that starting a family would negatively impact their career trajectory or ability to achieve career goals (Table 3). This further underscores the importance of mentorship and sponsorship to help resident parents actualize their career goals and prevent unequal distribution of opportunities.

In addition to reported hesitancy to seek information, many new radiation oncology parents report under-utilization of offered parental leave due to concerns of perceived pressure to return to work¹⁸. In fact, PDs describe maximum parental leave allowed to be greater than the average leave taken (Table 2), further demonstrating evidence for underutilization of possible leave. In addition to time, we suspect financial support additionally will influence leave actualization especially for families dependent on the resident's salary. The dialogue regarding parental leave is difficult and concerns regarding potential discrimination are not unfounded¹⁹, yet we are hopeful the findings here support a growing movement to normalize and support parenthood in residency training^{7,8,15,20}. Providing time and financial support to birthing and non-birthing parents is a fundamental need for trainees to promote health²¹⁻²³ and achieve career success. Female radiation oncology residents report similar career aspirations to their male counterparts yet also bear more childcare duties.²⁴ Providing equitable leave across genders through improved parental leave policies is a step towards reducing gender inequities, but even more important is prioritization of building department cultures that support resident parents

regardless of gender. Conveying these values to prospective applicants during the interview process will be essential in increasing recruitment to radiation oncology and improving gender diversity in our field^{25,26}.

It is important to understand the context and limitations of this survey. We characterized the current state of parental leave information dissemination in the final interview cycle prior to the implementation of the updated ACGME Institutional Requirements. We hope to provide a means of identifying potential challenges and preferences of applicants that programs may consider when updating their institutional policies. Limitations of this analysis include small sample size, potential recall bias, and selection bias, where the applicant and program director views described here likely represent respondents who have strong views on parental leave policies. Most program directors responding to this survey were self-identified women (n=14, 48%), despite making up a minority of all program directors (19/94 program directors in 2020 were female)¹². Furthermore, a third of PD respondents did not disclose gender, presumably out of concern for anonymity. Additionally, we recognize a further need for characterizing the needs of applicant parents who do not identify as cis-gender and of the lesbian, gay, bisexual, transgender, and queer/questioning workforce in medicine, that is not specifically explored in this study.

In conclusion, improving the communication of these important policies to prospective applicants and trainees will promote physician wellness, reduce gender inequities through recruitment, and create an inclusive culture that meaningfully uplifts physicians across all levels of training.

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Table 1. Radiation Oncology Program Director and Applicant Respondent Demographics

Residency Applicant Demographics	
	n (%)
Total	62 (100%)
Age (median, range)	28 (24,41)
Gender	
Male	27 (44%)
Female	27 (44%)
Prefer not to say or Other (free text)	8 (12%)
Marital Status	
Single	24 (39%)
Married	21 (34%)
Partnership	7 (11%)
Prefer not to say or Other (free text)	10 (16%)
Training Level	
M4	44 (71%)
Other	11 (18%)
Unknown	7 (11%)
Have Children	
Yes	6 (10%)
No	49 (79%)
Unknown	7 (11%)
Program Director Demographics	
	n (%)
Total	29 (100%)
Age (median, range)	44 (35, 54)
Gender	
Male	5 (17%)
Female	14 (48%)
Unknown	10 (34%)
Years as Program Director (median, range)	3 (1, >10)
Have Children	
Yes	17 (59%)
No	4 (14%)
Unknown	8 (28%)

Table 2. Residency Program Parental Leave Policies

Program Characteristics Represented	
<i>Number of residents in program? (PGY2-PGY5)</i>	N (%)
7+	22 (76%)
<7	2 (7%)
prefer not to say	5 (17%)
<i>Number of female residents in programs represented</i>	N (%)
0	9 (31%)
1-2	11 (37%)
3-5	3 (10%)
6+	1 (3%)
prefer not to say	5 (17%)
Parental Leave Policies	
Program has a written maternity leave policy	27 (93%)
Program has a written partner/non-birthing parent leave policy	18 (62%)
<i>"Who determines the length of parental leave at your program?" (May select more than one)</i>	N (%)
Institutional Policy	18 (62%)
ACGME/ABR Policy	11 (38%)
Radiation Oncology Residency Program	9 (31%)
State Policy	4 (14%)
Other	1 (3%)
<i>Length of Parental Leave</i>	Median (Range)
Maximum Maternity Leave (weeks)	11-12 (5-12+)
Average Maternity Leave Taken (weeks)	7-8 (3-12)
Maximum Partner Leave (weeks)	7-8 (1-12+)
Average Partner Leave Taken (weeks)	3-4 (1-12)
<i>Clinical Coverage Plans During Leave of Absence</i>	N (%)
Attendings	19 (66%)
Co-residents	14 (48%)
Fellows/APPs	6 (21%)
No coverage needed	5 (17%)
Moonlighters	0 (0%)
<i>Source of Financial Support During Leave of Absence</i>	N (%)
Vacation Time	14 (48%)
Paid Leave Separate from Above	13 (45%)
Sick Leave	13 (45%)
State-Supported Family and Medical Leave Act (FMLA)	11 (38%)
Short-term Disability	6 (21%)

Unpaid Time Off	5 (17%)
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Parental Leave Extension

<i>Option to extend parental leave from standard policy?</i>	n (%)
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Yes	16 (64%)
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No	4 (16%)
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I don't know	5 (20%)
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Structure of Extension?

Paid Continuation	1 (6%)
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Unpaid Continuation	3 (19%)
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Paid continuation using flexible remote research electives	12 (75%)
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Paid continuation using remote clinical electives	0 (0%)
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<i>Extension of training if parental leave taken? (May select more than one)</i>	N (%)
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Yes	0 (0%)
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No	12 (41%)
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Competency dependent	5 (17%)
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Length of leave dependent	11 (38%)
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Table 3 Applicant and PD Perspectives on Parenthood in Residency**Applicant Views on Parenthood**

In your opinion, when is the best time to start a family during your career, if interested in doing so? (may select more than one)

	n (%)					
Before Medical School	1 (2%)					
Medical School	4 (7%)					
During Residency	12 (22%)					
During Research Time	18 (33%)					
As Junior Faculty	13 (24%)					
As Mid Level Faculty	2 (4%)					
Not Applicable/Interested	5 (9%)					
<i>Starting a Family Would...</i>	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
Negatively impact my residency training	1 (2%)	7 (13%)	19 (36%)	16 (30%)	10 (19%)	
Make it more difficult to pursue an academic career	3 (6%)	14 (26%)	10 (19%)	17 (32%)	8 (15%)	
Make it more difficult to pursue a private practice career	2 (4%)	5 (9%)	9 (17%)	24 (45%)	12 (23%)	
potentially cause me to miss career advancement opportunities	4 (8%)	14 (26%)	18 (34%)	12 (23%)	5 (9%)	

Table 4. Information Dissemination: Current and Desired Methods Reported by Applicants

Parental Leave Information Dissemination During Residency Interviews	
	n (%)
Were parental leave policies formally discussed or presented during any of your radiation oncology residency interviews?	42 (68%)
Proportion of interviews at which parental leave policies were presented (of 42 affirmative responses):	
More than 50% of interviews	10 (24%)
Less than 50% of interviews	32 (76%)
How was information about parental leave policies presented during the residency interview process? (Applicants)	
<i>Method (May select more than one)</i>	n (%)
Personal Conversations with Residents	28 (45%)
Slide Deck	20 (32%)
Training Program Website	11 (18%)
Conversations with Interviewers	9 (15%)
Handouts	7 (11%)
Conversations with Program Directors	3 (5%)
Information Not Presented	1 (2%)
Don't Remember	4 (6%)
How Do Programs Address Parental Leave During Interviews (PD)	
<i>Method (May select more than one)</i>	n (%)
Verbally only if asked	11 (38%)
Formally in slide presentation	8 (28%)
Verbally provided to all candidates	6 (21%)
Handouts	5 (17%)
Addressed with Human Resources	2 (7%)
Not Addressed	2 (7%)
Other (free text: GME email or website)	2 (7%)
Applicant Preference for Format of Parental Leave Information	
<i>Method (May select more than one)</i>	n (%)
Slide Deck	39 (63%)
Training Program Website	31 (50%)
Handouts	26 (42%)
Conversations with Residents	25 (40%)
Conversations with Program Directors	10 (16%)
Conversations with Interviewers	9 (15%)
Do Not Need/Want Information	4 (6%)

For most of your interviews (>50%), please select your level of comfort discussing parental leave policies with:

<i>Where 1 is 'Very Uncomfortable', 3 is 'Neutral', and 5 is 'Very Comfortable'</i>	Median	Range
Residents	5 (<i>Very Comfortable</i>)	(1,5)
Program Coordinator/Manager	4 (<i>Comfortable</i>)	(1,5)
Program Director	3 (<i>Neutral</i>)	(1,5)
Assistant Program Director	3 (<i>Neutral</i>)	(1,5)
Faculty Interviews	3 (<i>Neutral</i>)	(1,5)
Physics/Dosimetry Interviewing Staff	3 (<i>Neutral</i>)	(1,5)
Chair	2 (<i>Uncomfortable</i>)	(1,5)

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Table 5. Factors that Impact Program Selection

Influence of Parental Leave Information on Residency Rank List			
Parental Leave Influence Rank	Female, N=27	Male, N=28	p-value
	n (%)	n (%)	
No	19 (70%)	22 (79%)	0.7
No because I was not provided the information	4 (15%)	4 (14%)	
Yes	4 (15%)	2 (7.1%)	

Associations Between Self-Identified Gender and Impact of Perceived Program Gender Ratios on Rank List			
Factor	Male, N=28	Female, N=27	p-value
	n (%)	n (%)	
Faculty Gender Ratio	7 (26%)	13 (48%)	0.09
Resident Gender Ratio	7 (26%)	11 (41%)	0.26
Number of Male Residents with Children	6 (22%)	4 (15%)	0.72
Number of Female Residents with Children	4 (15%)	12 (44%)	0.02

Declaration of interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

The authors declare the following financial interests/personal relationships which may be considered as potential competing interests: