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ORIGINAL ARTICLE

FACTORS INFLUENCING WOMEN'S ATTRACTION TOWARDS CAREER IN DIAGNOSTIC RADIOLOGY: INSIGHTS FROM A SURVEY OF ASPIRING RADIOLOGISTS IN DISTRICT PESHAWAR, KHYBER PAKHTUNKHWA, PAKISTAN

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ABSTRACT

Background: Historically, the representation of women in diagnostic radiology has been lower than that of men, reflective of broader gender disparities in many STEM fields. The main purpose of the study was to identify the key elements that motivate female residents to choose a career in diagnostic radiology.

Materials & Methods: The cross-sectional study was conducted for data collection over six months from January 2024 to June 2024 on 97 doctors pursuing a career in diagnostic radiology in tertiary care hospitals across Peshawar KP. All the participants were assessed for the factors influencing their choices towards radiology with structured questionnaire, specially designed for it. The survey comprised 12 questions designed to probe some aspects of career choice in diagnostic radiology. Questions are a blend of multiple-choice, Likert scale, and open-ended inquiries.

Results: Ninety-seven postgraduate female residents in radiology were assessed for the factors influencing their choices towards radiology with structured questionnaire, specially designed for it. The survey indicated that most people did not consider their marital status as a factor in career choice. A large majority thought the possibility of working with a better pay scale was essential. Work timings were relevant to the majority, suggesting an attraction to available and fit-to-schedule possibilities in diagnostic radiology. The perception of job security in diagnostic radiology is high, with most respondents opining that it offers better job security compared to other medical specialties. Work-life balance was well perceived, and family-friendliness showed its effect on career decisions. Some respondents reported a gender-related challenge, which gave cause for continuing the efforts to improve issues of diversity and gender equality in the profession.
Conclusion: The main factors that influence women to enter diagnostic radiology need to be understood for a practical approach toward a more balanced and inclusive workforce in healthcare. Women value flexibility, financial incentives, and job security at work more than marital status when it comes to this specialty. Eliminating struggles and biases would help pave the path towards a brighter future for these women by providing them equal opportunities in diagnostic radiology.

KEY WORDS: Career choice; Radiology; Work-Life Balance.

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INTRODUCTION

Medicine is constantly evolving, responding to societal needs and medical innovations. Within this landscape, diagnostic radiology stands out as a vital specialty, bridging the gap between clinical examination and accurate diagnosis.[1] Diagnostic radiologists provide critical insights from medical imaging that inform the diagnosis and treatment of various conditions, managing both the technical and emotional aspects of patient care throughout the imaging process.[2] The ongoing global concern about the

shortage of radiologists underscores the importance of understanding the factors that influence women's interest in this field.[3] Historically, the representation of women in diagnostic radiology has been lower than that of men, reflective of broader gender disparities in many STEM fields.[4] Research indicates that while the number of female medical students has risen, fewer women pursue careers in radiology. Factors contributing to this include the need for flexible work arrangements during child-bearing years and the perception of job security in radiology compared to other specialties.[5]

Studies have identified key motivators for women in choosing diagnostic radiology, such as interest in the specialty, work-life balance, job security, and the quality of life it offers.[6] Additionally, early exposure to radiology during medical education significantly impacts career decisions, with positive experiences influencing women's interest in this specialty. Moreover, mentorship and the presence of role models have been shown to enhance female aspirants' career aspirations, providing critical guidance and support.[7] Understanding these dynamics is crucial for promoting gender diversity in radiology. Addressing barriers to entry and fostering a supportive environment can help attract more women to this field, ultimately enhancing workforce diversity and improving clinical outcomes. Recent initiatives focus on educational interventions aimed at increasing female participation and supporting their professional development in diagnostic radiology.[8] This study was initiated to identify and analyze the key factors influencing women's career choices in diagnostic radiology and to examine how work-life balance, job security, financial incentives, and institutional support affect women's interest in this specialty. Moreover, it was also carried out to address the research gaps concerning the unique experiences and challenges faced by women in diagnostic radiology, with a focus on promoting equitable opportunities within the field. The main purpose of the study was to identify the key elements that motivate female residents to choose a career in diagnostic radiology.

MATERIALS AND METHODS

The research was conducted over a six-month period, from January 2024 to June 2024, across several tertiary care hospitals in Peshawar KP. This setting provided a diverse sample of postgraduate female residents pursuing a career in diagnostic radiology. The sample size was determined using a proportion formula to ensure representativeness. Assuming a confidence level of 95% and a margin of error of 5%, we aimed to recruit a minimum of 97 participants, which was deemed adequate to achieve statistical significance while capturing a range of perspectives regarding factors influencing career choice.

This study used a structured questionnaire and was filled out online. The survey was specifically designed to investigate a wide range of factors that would likely influence women's choice of a career in diagnostic radiology. Participants for this study were recruited through specific outreach relating to diagnostic radiology. The participants filled in the survey electronically to maintain anonymity and confidentiality. The data collection period extended over a defined timeframe.

A structured online questionnaire was employed to collect data regarding the influencing factors, which included 12 questions across multiple formats (multiple-choice, Likert scale, and open-ended). These questions were designed to probe various dimensions of career choice in diagnostic radiology while allowing for both quantitative and qualitative responses. Participants rated the importance of various factors influencing their career decisions on a five-point Likert scale, and additional open-ended questions provided qualitative insights into personal motivations.

Data collected through the questionnaire were entered into statistical software for analysis. The analysis plan included descriptive, comparative and qualitative analysis. A p-value of <0.05 was considered statistically significant for all analyses. The collected data were subjected to quantitative and qualitative analysis. Quantitative data, including Likert scale responses, were analyzed using descriptive statistics to calculate frequencies and percentages. Qualitative responses were thematically analyzed to identify common themes and patterns. The study was conducted with strict adherence to ethical guidelines. Participants provided informed consent before participating in the survey. Confidentiality and anonymity were maintained throughout the study, and no personally identifiable information was collected.

RESULTS

A total of 97 female residents participated in the survey. The demographic details of the participant are presented in Table 1.

Table 1: Demographic details of participants

Demographic Variable	Value
Age – (Mean± SD)	28.72 ± 2.74
Marital status- n (%)	
Married	62 (63.9 %)
Single	35 (36.1 %)
Year of residency, n (%)	
R1	48 (49.5)
R2	11 (11.3)
R3	14 (14.4)
R4	24 (24.7)

The mean age of the participants was 28.72 ±2.74 indicating a relatively limited variability in age. Regarding marital status, the majority of participants were married, comprising 63.9% of the total, while 36.1% were un-married. Year of residency further categorized participants, with the largest group be-

ing in the first year (R1) at 49.5%, followed by R4 at 24.7%, R3 at 14.4%, and R2 at 11.3%.

Table-2 presents the responses of participants according to their year of residency and marital status about various questions related to their career choices in diagnostic radiology. Each question is rated on a scale of 1 to 5, with 5 indicating the highest importance or satisfaction and 1 indicating the lowest. The table is structured to compare responses between two groups of residents: R1R2 (representing residents in the first and second years of residency) and R3R4 (representing residents in the third and fourth years of residency). The survey investigated how residents' priorities change throughout their training in diagnostic radiology. Residents in their first and second years (R1/R2) valued flexibility of work timings significantly more than those in their third and fourth years (R3/R4) (p=0.012). There were no statistically significant differences between the groups for relaxed timings compared to other specialties (p=0.129) or pay scale compared to other specialties (p=0.795). Residents' ratings of work-life balance (p=0.486) and family-friendliness (p=0.963) did not differ significantly between the two groups.

Tables 2 also presents the distribution of responses for all factors according to marital status (married vs. unmarried). The table show the number of residents who ranked each factor on the importance scale and include the corresponding p-value.The survey shows flexibility and work-life balance are important for all residents, with married residents valuing them slightly more (though work-life balance wasn't statistically significant). Pay and relaxed timings compared to other specialties held similar importance across marital status. Family-friendliness (p-value = 0.005) and job security (p-value = 0.017) were significantly more important for married residents, suggesting a focus on long-term stability and potentially family planning.

Table 2: Responses of participants according to residency year and marital status

Question	Grouping	Score_5	Score_4	Score_3	Score_2	Score_1	P-value
Flexibility of work timings	R1R2	30	11	7	4	7	0.012
	R3R4	17	8	13	0	0	
	Married	35	8	16	0	3	0.002
	Single	12	11	4	4	4	
Relaxed timings vs other specialties	R1R2	18	11	11	3	16	0.129
	R3R4	6	15	9	1	7	
	Married	20	15	12	4	11	0.053
	Single	4	11	8	0	12	
Pay scale vs other specialties	R1R2	4	11	21	3	20	0.795
	R3R4	3	4	16	1	14	
	Married	7	7	22	4	12	0.076
	Single	0	8	15	0	22	
Work-life balance	R1R2	7	12	20	12	8	0.486
	R3R4	6	12	13	14	3	
	Married	10	12	21	8	11	0.032
	Single	3	12	12	8	0	
Family-friendliness	R1R2	10	12	21	8	8	0.963
	R3R4	6	7	14	4	7	
	Married	16	8	19	8	11	0.005
	Single	0	11	16	4	4	
Job security	R1R2	23	28	5	0	3	0
	R3R4	10	6	22	0	0	
	Married	18	25	15	1	3	0.175
	Single	15	8	12	0	0	

5= Very important, very much, Very Good, highly balanced
4= Important, Very, above average, balanced
3= Fairly important, moderately, average, moderately balanced
2= Slightly important, slightly, below average, somewhat unbalanced
1= Not important, not at all, not good, not balanced

DISCUSSION

This study provides valuable insights into the factors influencing women's decisions to pursue careers in diagnostic radiology, particularly within the context of Peshawar, KPK, Pakistan. This research is unique in its focus on this region, offering novel insights into the preferences and determinants shaping careers in diagnostic radiology among women in KPK. The results reveal key determinants influencing career choices, highlighting the complexities and preferences within this specialty. Marital status does not significantly affect the career choices of female radiologists. This challenges traditional beliefs that personal factors strongly dictate career decisions in medicine; instead, flexibility, financial rewards, job security, and work-life balance play a more critical role.[9]

Our findings regarding factors influencing women's career choices in Peshawar resonate with international trends emphasizing work-life balance, job security, and mentorship as key motivators. Similar to efforts observed in the United States, where women's representation in radiology has gradually increased female instructors constituted 38% and assistant professors 31% between 2010 and 2019 progress remains slow, with low proportions of women in senior roles.[10] Flexibility of work emerged as a crucial determinant, with the majority of respondents preferring 'easy timing' compared to other medical disciplines.[11] This aligns with broader healthcare trends where flexibility is increasingly valued for balancing professional and personal commitments.[12]

Financial considerations were also significant, with many respondents indicating that an improved pay scale would motivate career pursuit. This suggests that competitive monetary rewards are a key driver in this field. [13] Job security was another important factor, with most respondents perceiving diagnostic radiology as more stable than other specialties. This perception aligns with the field's stabilization amid today's healthcare volatility.[14] Work-life balance was a top factor influencing satisfaction among female radiologists. The survey highlighted that diagnostic radiology is perceived as a profession with a decent work-life balance, supported by family-friendly policies in healthcare. This underscores the importance of family inclusion in career decisions, especially for women balancing professional and personal lives.[15]

This mirrors challenges faced in Pakistan, where cultural and societal factors compound gender disparities. Barriers such as balancing responsibilities and job security concerns align with international research highlighting similar obstacles faced by women globally. For example, studies from the U.S. reveal a significant drop in female representation from medical school to radiology residency, with only 29% of applicants being female, emphasizing the critical transition phase where many women opt out.[10] Despite these positives, the survey also uncovered challenges related to gender biases and stereotypes within radiology. A significant percentage reported gender-related issues, indicating the need for further efforts toward gender equity.[16] Our findings also underscore the importance of mentorship and supportive networks, which international literature confirms as vital in encouraging female medical students and early-career radiologists to pursue and remain in the specialty

Strengths of this study include its pioneering focus on KPK, Pakistan, providing valuable insights into regional preferences and determinants. Limitations include its restriction to Peshawar and a single tertiary hospital, which may not fully represent the experiences of female radiologists across other areas of KPK. While cultural differences influence specific challenges such as societal expectations and family responsibilities in Pakistan they reflect a universal concern across regions regarding gender disparities in STEM fields.[17]

Overall, this study offers critical information on factors affecting the appeal of diagnostic radiology among women, suggesting areas for improvement in recruitment strategies and work environment policies to better support female radiologists. Addressing barriers related to flexibility, financial incentives, job security, and gender biases is essential for advancing diversity and ensuring equal opportunities within this important specialty.

CONCLUSION

The main findings indicate that work hours, financial incentives, job security, work-life balance, and family friendliness are significant factors, but marital status has minimal effect on choice of specialty. The challenges that emanate from gender biases only point to the need for diversity and equality programs. These factors are of great importance to advancement in gender diversity within diagnostic radiology. These findings should be considered and incorporated to develop a more diverse work group that avails equal opportunities for women within this core medical specialty.

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CONFLICT OF INTEREST
Authors declare no conflict of interest.
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AUTHORS' CONTRIBUTION

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Conception or Design:	AH, GW
Acquisition, Analysis or Interpretation of Data:	AH, GW, RI, SK, UB
Manuscript Writing & Approval:	AH, GW, RI, SK, SF

All the authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.