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INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/17108

DOI URL: <http://dx.doi.org/10.21474/IJAR01/17108>



RESEARCH ARTICLE

BARRIERS FACED BY FAMILY MEDICINE RESIDENTS IN PERFORMING MINOR SURGICAL PROCEDURES IN THEIR CLINICS IN TABUK, KSA

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Manuscript Info

Manuscript History

Received: 15 April 2023

Final Accepted: 19 May 2023

Published: June 2023

Key words:-

Family Medicine, Minor Surgical Procedures, Barriers, Saudi Arabia

Abstract

Objectives: This study assessed the barriers faced by FM residents in performing minor surgical procedures in their clinics in Tabuk, Saudi Arabia.

Methodology: This observational cross-sectional study was conducted among family medicine (FM) physicians in Tabuk in June 2023. An adapted questionnaire was distributed online to determine the barriers family physicians may face in performing minor surgeries in their clinics.

Results: A total of 35 FM physicians were included, 14 (40%) aged 25-28 years. Most of them were males (71.4%). Nearly 82.8% of the family physicians who liked performing procedures did not find it complicated, and 82.3% of those who did not like performing procedures found it complicated; this association was statistically significant ($P=0.001$). Nearly half of the physicians (52.6%) who found it easier to refer cases with indications of minor procedures did not consider performing procedures complicated, and 93.8% of the physicians (52.6%) who did not find it easier to refer cases with indications of minor procedures did not consider performing procedures complicated; this association was statistically significant ($P=0.007$).

Conclusion: One of the biggest challenges that prevented family physicians from doing minor procedures in their clinics was a lack of time. Additionally, many physician find it easier to refer patients who need minor operations to surgical departments. The complicated nature of these operations was rated by physicians in our study based on how much they enjoyed performing them. Patients were more likely to be sent to other departments by physicians who found procedures challenging. These cases were easily and frequently referred to other surgical departments by physicians who did not enjoy conducting simple procedures, who found it complicated, and who thought their fees were too low.

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Introduction:-

Primary healthcare aims to provide a comprehensive system of basic health care that meets people's basic needs. These requirements vary by region, depending on environmental, social, economic, and cultural circumstances. The degree to which these comprehensive programs are implemented and provided can vary accordingly [1].

Surgery is an important aspect of medicine and has long been considered a necessary component of general practice. However, since it necessitates specific skills, it takes time and necessitates specialized equipment and facilities [2]. Surgical issues are part of a family physician's daily practice. While some procedures may be undertaken in the clinic, others, such as surgical treatment of comedones, abscesses, ingrown toenails, or minor wounds, are considered more difficult and are frequently referred to a specialist [3, 4].

Minor surgeries can be identified as short procedures performed under local anesthesia, are minimally invasive, and involve the same surgical techniques as other procedures [2]. In Saudi Arabia, the seventh feature of Primary Health Care (PHC) is provided for proper treatment of common injuries and minor surgery at Primary Healthcare Centers (PHCCs) [5]. Despite the fact that minor surgery procedures offered at PHCC in KSA have clear benefits and are well-recognized by health policymakers, evidence has revealed that minor surgery procedures offered at PHCC in KSA are still in their infancy [6].

Minor surgery has been shown to have a number of advantages in PHC research, including safety, cost-effectiveness, a lower referral rate, and increased patient satisfaction [7]. Minor surgery is also satisfying for physicians because it allows them to treat their patients not only with medicine but also with their experience [8]. It is less expensive to perform minor surgeries in PHCC than the same intervention in a hospital; however, it is time-consuming. Minor surgery treatment in a general practice environment costs 15 times less than the same procedure in a hospital setting, resulting in significant savings and a reduction in the financial burden on the health system; however, this results in high doctor and patient satisfaction [9]. Studies have shown that family physicians in rural areas were more likely than their urban counterparts to perform minor procedures [10, 11].

Primary care providers, such as family physicians, should be supported to provide a wider range of medical services, including surgical services, in their daily work. They should be well-equipped, as well as well-trained to perform all of these services [12-14]. Since lack of time or practical expertise and insufficient preparation are often given as reasons for not conducting minor surgical procedures in FM offices, an alternative solution to comprise more clinical surgical workshops in the educational programs for FM physicians is required [15, 16].

A study was conducted at primary care centers in Riyadh, Saudi Arabia, to assess the current state of preparation, services, and success of minor surgical procedures in primary care, as well as doctors' perceptions of various minor surgical procedures in primary care. They reported that minor operations are not of significant value in PHCs and suggested some solutions, including appropriate, well-organized training courses provided for physicians for at least one month, nurses must be adequately trained, surgical instruments must be available, evaluation and auditing minor surgeries in PHCCs should be implemented by professional surgeons, and more studies were focusing on the many aspects of minor [9].

Alfaraj et al. conducted a cross-sectional study among physicians in the Al-Qatif area, Saudi Arabia, to assess the importance of minor surgical procedures that could be implemented by general practitioners and physicians at PHCCs and to identify the important and main barriers to physicians' inability to do minor surgeries at PHCC. They reported that the Al-Qatif PHC sector urgently requires establishing a minor surgery program funded by physicians' interest, encouragement, and satisfaction. The program components should include physician preparation and the provision and maintenance of necessary facilities to ensure physicians' satisfaction and interest. As a consequence, this would most likely provide a vital health benefit to a large number of people in the form of a healthy and effective atmosphere in which to achieve the definition and comprehension of holistic and bio-psychosocial treatment [6].

Another cross-sectional aimed to assess Kingston general practitioners and family physicians' current practices and the self-reported barriers regarding minor office procedures. They found that many Kingston family doctors refer patients who need minor office procedures to specialists for consultation. Treating patients at the primary care level will save time and money. The top reasons for not conducting the procedures were "lack of current ability" and "lack of time." Dermatologic lesions were excised at a higher rate than the other three research procedures. When

compared to fee-for-service models, a slightly lower percentage of physicians employed in Family Health Networks cited "time" as a justification for not conducting the procedures [15].

Aim of the study:-

This study aims to assess the barriers faced by FM residents in performing minor surgical procedures in their clinics in Tabuk, Saudi Arabia.

Methodology:-

Study design

This was an observational cross-sectional study.

Study setting and duration

The study was conducted among FM physicians in Tabuk, Saudi Arabia. The study proceeded in June 2021.

Population and sample size

This study included family physicians in Tabuk, Saudi Arabia. Currently, there are 61 FM residents working in Tabuk City, and the study sampling technique is total coverage.

Inclusion criteria

1. FM residents working in Ministry of Health hospitals or Military hospitals in Tabuk city.
2. Males and females were included.

Exclusion criteria

1. Not currently working as a FM resident.
2. Not willing to participate in the study.

Data collection

An adapted questionnaire was used to determine the barriers that may face family physicians in performing minor surgeries in their clinics [15]. It was distributed online to the physicians. The questionnaire included the following two parts:

1. The participants' sociodemographic characteristics such as (Age, gender, nationality, years of experience, and qualifications).
2. The barriers that may face the physicians in performing minor surgeries in their clinics such as lack of updated clinical skills, lack of time, and the cost of equipment.

Ethical considerations

The questionnaire began with a brief description of its goal and purpose and a reminder to participants that their participation is completely voluntary. The surveys did not obtain names or dates of birth, or addresses. All answers were kept confidential and safe.

Statistical analysis

The Statistical Package for Social Sciences (SPSS) version 20 was used to analyze the data (IBM Corp., Armonk, NY). For the prevalence and quantitative variables, descriptive statistics were used. A p-value of less than 0.05 was deemed statistically significant.

Results:-

Table (1) shows the sociodemographic characteristics of the participants. A total of 35 FM physicians were included, 14 (40%) aged 25-28 years. Most of them were males (71.4%), and 82.9% lived in urban areas. The vast majority were Saudi (94.3%). The majority (91.4) spent 1-4 years of experience, and 65.7% had MBBS.

Table (2) presents the barriers that may face family physicians in performing minor surgeries in their clinics. More than half of them (57.1%) reported having the skills that qualify them to perform minor procedures, the majority (82.9%) liked performing procedures, 74.3% see patients with indications to have minor surgeries, 71.4% did not find performing surgeries complicated, and 65.7% did not find the equipment required for these surgeries expensive.

On the other hand, 68.8% reported that they did not have time to perform these surgeries, nearly half of them (51.4%) reported that their fees were too low, and 54.3% found it easier to refer these cases to surgical departments.

Table (3): presents the associations between sociodemographic and clinical characteristics and the complexity of performing minor procedures. Nearly 82.8% of the family physicians who liked performing procedures did not find it complicated, and 82.3% of those who did not like performing procedures found it complicated; this association was statistically significant ($P=0.001$). Nearly half of the physicians (52.6%) who found it easier to refer cases with indications of minor procedures did not consider performing procedures complicated, and 93.8% of the physicians (52.6%) who did not find it easier to refer cases with indications of minor procedures did not consider performing procedures complicated; this association was statistically significant ($P=0.007$).

Table (4): Presents the associations between sociodemographic and clinical characteristics and the easiness of performing minor procedures. All of the physicians who did not like performing minor procedures found it easy to refer the cases, and more than half (55.3%) who liked performing minor procedures did not easily to refer the cases; this association is statistically significant ($P=0.014$). The majority (90%) of those who found minor procedures complicated easily referred the cases, and 60% who did not find minor procedures complicated did not usually refer the cases; this association is statistically significant ($P=0.007$). 72.2% of the physicians who found their fees were too low easily referred the cases, and 64.7% who did not find their fees were too low did not usually refer the cases; this association is statistically significant ($P=0.028$).

Table (1):- The sociodemographic characteristics of the participants (n=35).

Parameter		Frequency (%)
Age, y	25 -	14 (40%)
	28 -	11 (31.4%)
	30 or more	10 (28.6%)
What is your gender?	Female	10 (28.6%)
	Male	25 (71.4%)
Where is your residence?	Rural	6 (17.1%)
	Urban	29 (82.9%)
What is your nationality?	Non-Saudi	2 (5.7%)
	Saudi	33 (94.3%)
How many years of experience do you have?	'1-4	32 (91.4%)
	'10-20	1 (2.9%)
	'5-9	2 (5.7%)
What are your qualifications?	Board	11 (31.4%)
	Master	1 (2.9%)
	MBBS	23 (65.7%)

Table (2):- The barriers that may face the physicians in performing minor surgeries in their clinics.

Parameter		Frequency (%)
Do you have updated skills that qualify you to perform minor procedures?	No	20 (57.1%)
	Yes	15 (42.9%)
Do you like performing procedures?	No	6 (17.1%)
	Yes	29 (82.9%)
Do you see patients with indications to have a minor surgery?	No	9 (25.7%)
	Yes	26 (74.3%)
Do you find performing procedures complicated?	No	25 (71.4%)
	Yes	10 (28.6%)
Do you find the equipment required to perform minor surgeries expensive?	No	23 (65.7%)
	Yes	12 (34.3%)
Do you have enough time to perform minor surgeries in your clinic?	No	24 (68.6%)
	Yes	11 (31.4%)

Do you think that your fees are too low?	No	17 (48.6%)
	Yes	18 (51.4%)
Do you find it easier to refer cases indicated with minor surgeries to a surgeon?	No	16 (45.7%)
	Yes	19 (54.3%)

Table (3):- Associations between sociodemographic and clinical characteristics and the complexity of performing minor procedures.a

Parameter		Do you find performing procedures complicated?		X ²	P-value
		No	Yes		
Age, y	25 -	8 (57.1%)	6 (42.9%)	3.099	0.212
	28 -	8 (72.7%)	3 (27.3%)		
	30 or more	9 (90%)	1 (10%)		
What is your gender?	Female	6 (60%)	4 (40%)	0.896	0.344
	Male	19 (76%)	6 (24%)		
Where is your residence?	Rural	4 (66.7%)	2 (33.3%)	0.08	0.777
	Urban	21 (72.4%)	8 (27.6%)		
What is your nationality?	Non-Saudi	1 (50%)	1 (50%)	0.477	0.49
	Saudi	24 (72.7%)	9 (27.3%)		
How many years of experience do you have?	1-4	23 (71.9%)	9 (28.1%)	3.303	0.192
	10-20	0 (0%)	1 (100%)		
	5-9	2 (100%)	0 (0%)		
What are your qualifications?	Board	7 (63.6%)	4 (36.4%)	0.797	0.671
	Master	1 (100%)	0 (0%)		
	MBBS	17 (73.9%)	6 (26.1%)		
Do you have updated skills that qualify you to perform minor procedures?	No	12 (60%)	8 (40%)	2.987	0.084
	Yes	13 (86.7%)	2 (13.3%)		
Do you like performing procedures?	No	1 (16.7%)	5 (83.3%)	10.641	0.001
	Yes	24 (82.8%)	5 (17.2%)		
Do you see patients with indications to have a minor surgery?	No	5 (55.6%)	4 (44.4%)	1.496	0.221
	Yes	20 (76.9%)	6 (23.1%)		
Do you find the equipment required to perform minor surgeries expensive?	No	17 (73.9%)	6 (26.1%)	0.203	0.652
	Yes	8 (66.7%)	4 (33.3%)		
Do you have enough time to perform minor surgeries in your clinic?	No	16 (66.7%)	8 (33.3%)	0.848	0.357
	Yes	9 (81.8%)	2 (18.2%)		
Do you think that your fees are too low?	No	13 (76.5%)	4 (23.5%)	0.412	0.521
	Yes	12 (66.7%)	6 (33.3%)		
Do you find it easier to refer cases indicated with minor surgeries to a surgeon?	No	15 (93.8%)	1 (6.3%)	7.196	0.007
	Yes	10 (52.6%)	9 (47.4%)		

Table (4):- Associations between sociodemographic and clinical characteristics and the easiness of performing minor procedures.

Parameter		Do you find it easier to refer cases indicated with minor surgeries to a surgeon?		X ²	P-value
		No	Yes		
Age, y	25 -	4 (28.6%)	10 (71.4%)	3.156	0.206
	28 -	7 (63.6%)	4 (36.4%)		
	30 or more	5 (50%)	5 (50%)		
What is your gender?	Female	4 (40%)	6 (60%)	0.184	0.668
	Male	12 (48%)	13 (52%)		
Where is your residence?	Rural	2 (33.3%)	4 (66.7%)	0.447	0.504
	Urban	14 (48.3%)	15 (51.7%)		
What is your nationality?	Non-Saudi	1 (50%)	1 (50%)	0.016	0.9
	Saudi	15 (45.5%)	18 (54.5%)		
How many years of experience do you have?	1-4	14 (43.8%)	18 (56.3%)	3.267	0.195
	10-20	0 (0%)	1 (100%)		
	5-9	2 (100%)	0 (0%)		
What are your qualifications?	Board	5 (45.5%)	6 (54.5%)	0.884	0.643
	Master	0 (0%)	1 (100%)		
	MBBS	11 (47.8%)	12 (52.2%)		
Do you have updated skills that qualify you to perform minor procedures?	No	9 (45%)	11 (55%)	0.01	0.922
	Yes	7 (46.7%)	8 (53.3%)		
Do you like performing procedures?	No	0 (0%)	6 (100%)	6.098	0.014
	Yes	16 (55.2%)	13 (44.8%)		
Do you see patients with indications to have a minor surgery?	No	3 (33.3%)	6 (66.7%)	0.748	0.387
	Yes	13 (50%)	13 (50%)		
Do you find performing procedures complicated?	No	15 (60%)	10 (40%)	7.196	0.007
	Yes	1 (10%)	9 (90%)		
Do you find the equipment required to perform minor surgeries expensive?	No	11 (47.8%)	12 (52.2%)	0.121	0.728
	Yes	5 (41.7%)	7 (58.3%)		
Do you have enough time to perform minor surgeries in your clinic?	No	10 (41.7%)	14 (58.3%)	0.504	0.478
	Yes	6 (54.5%)	5 (45.5%)		
Do you think that your fees are too low?	No	11 (64.7%)	6 (35.3%)	4.804	0.028
	Yes	5 (27.8%)	13 (72.2%)		

Discussion:-

Teaching minor surgical techniques is a crucial part of the FM residency curriculum, according to **Naismith et al.** [17]. It is necessary to have a recorded, organized, and structured curriculum for procedural skills at the undergraduate and residency levels. A national standard should be created with the aid of national guidelines like those recently released by the College of Family Physicians of Canada (CFPC) procedural skills working group [18]. This study aims to assess the barriers faced by FM residents in performing minor surgical procedures in their clinics in Tabuk, Saudi Arabia.

We found that the majority (82.9%) enjoyed performing procedures, 74.3% saw patients who had indications for minor surgeries, 71.4% did not find performing surgeries complicated, and 65.7% did not think the equipment needed for these surgeries was expensive. More than half of them (57.1%) reported having the skills that qualify them to perform minor procedures. Another cross-sectional study was conducted to investigate the expertise,

practice, barriers, and recorded self-confidence of FM residents in Riyadh, Saudi Arabia when performing minor surgical procedures. They found that the majority of FM residents in this study were interested in minor surgery, but they lacked perceived experience, reported faith, and practiced infrequently. This would necessitate further internal program evaluation [19]. In general, we suggest that programs be strengthened by offering ongoing formal instruction by trained and interested trainers in minor procedure clinics within the FM environment.

An observational study conducted by **Gmajnić et al.** aimed to determine the effect of a practical surgical course on some minor surgical procedures proceeded by family physicians in Croatia. They found that clinical courses would allow doctors to treat patients surgically in their offices and increase the number of primary care services available [20].

On the other hand, we found that 68.8% reported that they did not have time to perform these surgeries, nearly half of them (51.4%) reported that their fees were too low, and 54.3% found it easier to refer these cases to surgical departments. Similarly, **Sempowski et al.** found that the second most common excuse for not carrying out the study procedures was "time." Time and compensation are unmistakably connected in a fee-for-service (FFS) paradigm. When compared to their fee-for-service colleagues, Family Health Networks doctors seemed to lament the lack of time less frequently. Practitioners may be able to focus less on the quantity and length of patients treated, thanks to Family Health Networks' compensation [15]. **Nelligan et al.** conducted a study to assess the economic effect of an office-based minor procedure service that family physicians primarily manage. They reported that the healthcare budget had significantly been reduced owing to a minor FM procedure operation [21]. Future studies should look into the effect of such services on family practitioner quality of care, patient experience, the excitement of practice, education, and workforce growth.

We found that 82.8% of the family physicians who liked performing procedures did not find it complicated, and 82.3% of those who did not like performing procedures found it complicated; this association was statistically significant ($P=0.001$). Nearly half of the physicians (52.6%) who found it easier to refer cases with indications of minor procedures did not consider performing procedures complicated, and 93.8% of the physicians (52.6%) who did not find it easier to refer cases with indications of minor procedures did not consider performing procedures complicated; this association was statistically significant ($P=0.007$). **Van Dijk et al.** conducted an observational study in the Netherlands to investigate the general practitioners' referring patients with minor surgeries to the hospital and the associated factors. Their study found that the impact of minor surgery on the likelihood of referral differed depending on the diagnosis. If general practitioners conduct minor surgery, patients with sebaceous cysts have a lower risk of being referred. Minor surgery had no (significant) effects on benign neoplasm skin/nevus and lacerations/cuts. Encouragement by general practitioners to conduct mild surgical procedures for patients with sebaceous cysts has the ability to reduce specialist referrals and costs [22].

A community-based study conducted by **Botting et al.** aimed to assess the performance of general practitioners regarding minor surgeries performance in three settings. Minor surgery performed by a general practitioner is both effective and prompt. General practitioners who worked in a managed system outperformed their co-workers. It is important to consider how best to serve less well-supervised general practitioners [23].

We found that all of the physicians who did not like performing minor procedures found it easy to refer the cases, and more than half (55.3%) who liked performing minor procedures did not easily refer the cases; this association is statistically significant ($P=0.014$). The majority (90%) of those who found minor procedures complicated easily referred the cases, and 60% who did not find minor procedures complicated did not usually refer the cases; this association is statistically significant ($P=0.007$). 72.2% of the physicians who found their fees were too low easily referred the cases, and 64.7% who did not find their fees were too low did not usually refer the cases; this association is statistically significant ($P=0.028$). Another study aimed to explain the implementation of minor surgical procedures conducted by physicians working in a Family Health Unit in Brazil. They observed that the insertion of the resident family physician changed the reality of the Health Unit, contributing to the resolution of users' problems in primary care, with no need to refer for secondary care. As a result of the completion of minor procedures during the insertion of the residents into the study scenario, access to the welfare of the community attended by the health team of which the medical residency was ahead was facilitated. Residents who had been trained were able to settle health issues, improve their quality of life, and prevent potential problems caused by waiting in line for referrals [24].

Lack of time during clinical practice, a lack of enthusiastic and experienced trainers, particularly in FM clinics, and a lack of an appropriate environment in FM clinics can all contribute to inadequate training. These are all manageable problems that might be quickly resolved. It's interesting to note that when we asked residents how they thought their performance in minor surgical procedures could be improved, they mentioned lengthening their surgical speciality rotation the least. This may point to two things: first, the ineffectiveness of minor procedures training rotations in surgical specialties, and second, the preference of FM residents for training within the FM program and FM clinics, where they spend the majority of their training time and are familiar with the personnel and environments.

Limitations

Data on residents' knowledge was collected through self-reporting rather than a strict knowledge evaluation, according to the inhabitants. The small sample size may also bias our results. To investigate this issue further, further comparable studies on larger scales and for other programs outside of Tabuk City are required. There are a number of things to take into account in order to improve the issue. The responsibilities of family physicians at PHC services must include minor treatments.

Conclusion:-

Lacking time was one of the main obstacles that faced family physicians from performing minor procedures in their clinics. Many physicians also find it easier to refer cases with minor procedures to surgical departments. The physicians in our study evaluated the complexity of these procedures depending on whether they liked performing them or not. Physicians who found procedures complicated were more likely to refer cases to other departments. Physicians who did not like performing minor procedures, those who found it complicated, and those who found their fees were too low referred these cases easily and more often to other surgical departments. In general, we advise that programs might be improved by offering continuous, standardized training by qualified and interested trainers in minor procedure clinics inside the FM environment. This requires additional internal examination by each program.

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