

General population knowledge and perception regarding family medicine specialty in Saudi Arabia

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Abstract

Background: Family medicine is a medical speciality concerned with the entire health care of the individual and the family. It incorporates biological, clinical, and behavioral sciences and its scope is not limited by age, gender, organ system, or disease entity limitations. Family physicians serve important roles in many countries' primary care systems, although family medicine (FM) is still in its early stages in Saudi Arabia.

Aims: To assess the level of knowledge and perception towards family medicine among general population in Saudi Arabia.

Materials and Methods: This cross-sectional study included 382 participants from general population in Riyadh, Saudi Arabia. The responses were collected through the administration of a questionnaire in cluster 1 primary health care centers. Respondents were selected by convenient sampling technique. Data analysis was carried out by using SPSS.

Results: The study group consisted of 382 respondents. Females represented 56.5% of participants and 43.5% were males. More than sixty percent of participants were aged between 18-35 years. The mean knowledge and perception score of our participants was 15 ± 2.3 points (Range 6 – 20) and 53.5 ± 5.8 points (Range 37 – 70) respectively.

In addition, we found that most of respondents showed good knowledge about family medicine specialty (62%) and only 38% of respondents revealed poor knowledge. Finally, our results demonstrated that there was no significant association between the level of knowledge, not even perception and different socio-demographic variables.

Conclusion: Our findings concluded that people from Riyadh in Saudi Arabia revealed good level of knowledge and perception regarding the specialty of family medicine. Further studies and interventional educational programs are recommended.

Keywords: Family medicine, knowledge, perception, general population, Saudi Arabia

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I. Introduction

As an area of medical specialty, family medicine, also referred to as family practice is an area of medical practice devoted towards the deliverance of quality healthcare to individuals irrespective of their ages. Often denoted as general practitioner or general practice, the idea of family medicine has continuously been plagued by controversy often pegged around its feasibility in addressing the wide array of illnesses. Nonetheless, most studies conducted in the area of family medicine have concluded that knowledge and perception that contribute towards its acceptance is pegged upon such demographic factors as sex, age, employment status, and the individuals' level of education. The family physicians (FP) apply knowledge from various fields that include, but not limited, to biological, clinical, and behavioral sciences. The profession stands on various principles that include continuity of care, comprehensiveness, accessibility, and coordination. FPs are essential to healthcare system and their main duty entails prevention, rehabilitation, education, family planning, and treatment [3]. Owing to the significance of the FPs it is imperative that people and the citizenry understand their existence and their roles. The general training of family health practitioners may help improve the perception of this profession among individuals and communities. Some of the competencies required of family health practitioners include patient-centered care, primary care management, the use of bio-psycho-social model of care, holistic modeling in the provision of care and having good problem-solving skills. These traits can help in better communication and management of relations with patients and their families. This means that family medicine practitioners should have good communication and interpersonal skills. Family medicine is one of the most important specialties that define medicine in the contemporary setting and forms one of the most important pillars of care in Saudi Arabia. Its main focus is on overall healthcare with taking into consideration certain parameters such as system entity, sex, age, and the affected organ [1-2].

Saudi Arabia was one of the first countries among Arabian Gulf countries to reform its healthcare system following the World Health Organization's (WHO 1978) Alma-Ata declaration, which established the goal of "Health for all" in 2000 [3]. The primary health services rendered by the Saudi Health ministry are offered through a comprehensive wide system of 2,500 primary care centers located in both urban and rural communities [3]. A significant proportion of the population and shortage of family medicine physicians have estimated 636 family physicians around Saudi Arabia. [3-9]. The limited knowledge of the people on the existence and the roles of the FPs present a serious challenge to the provision of care. Various studies have shown that people living in Riyadh either do not understand the roles of the FPs or they do not even know that they exist. The people living in Riyadh frequently skip FPS and instead seek medical care in tertiary centers and specialized medical centers. It means that there is need to commission various strategies and initiatives to create awareness on the existence of FPs aimed at sensitizing the people, streamlining the provision of care, and improving health outcomes in the city [7-11]. Understanding the existence and the roles of care will certainly improve the quality of care and the outcomes.

Several studies have shown that a positive correlation exists between the awareness of the existence of FPs and desirable health outcomes. One study inferred that the patients' level of education and the general awareness had positive outcomes and also had a positive bearing on determining the degree of utilization of primary care [10, 11]. It is worth noting that the patient-doctor relationship, which plays a vital role in the provision of care and the subsequent outcomes, is founded on various parameters that include confidentiality, trust, and mutual respect. Different studies have proven that if a patient is aware of the role of a physician then they will certainly adhere to care guidelines and have higher chances of health outcomes [5, 7, 12, 14]. Such is particularly true when a patient has a chronic condition, for instance, hypertension, diabetes, mental health problems, and cancer.

In general, awareness and acceptance of the role of FPs is higher in Riyadh as compared to the villages in Saudi Arabia. The chronically ill patients tend to appreciate and are aware of the role of FPs compared to the other class of patients [5, 14, 15]. Furthermore, the acceptance and the general satisfaction with the roles and the duties of the FPs have a close association with the level of trust and the need for a meaningful communication between the patient and the care provider. Various studies in Riyadh and around the world have identified gaps in the perception of the duties and responsibilities of the FPs among families and the patients [1, 3, 8, 13-15]. The apparent lack of knowledge evidently stems from the lack of awareness on the part of the patient and lack of or poor communication on the part of the care providers. It means that there is need for awareness and proper communication to improve the quality of care and the general outcomes.

II. Objectives

The main objective of the study is to assess the level of knowledge and perception general population towards family medicine. The study achieved this through investigating the limitations encountered in visiting of a family medicine clinic, the roles of the family medicine clinics in facilitating the healthcare delivery, and the number of family medicine physicians in the area that the participants are aware of. In so doing, the study established the social-demographic factors that play a pivotal role in directing the knowledge and perception of family medicine amongst the general public.

III. Methods

The study adopted a cross-sectional study approach involving all the primary healthcare centers within the area of Riyadh, Saudi Arabia. The targeted population for the study encompassed all the visitors to the selected primary healthcare centers, with the convenient sampling technique being the preferred method of sample selection. Given that this technique is non-random, the target sample consist of an equal number of males and females to achieve a balanced gender representation.

Based on a population of 1000000 (tel:1000000), confidence level of 95 % and 5 % margin of error, the sample size was calculated to be 385 respondents. A questionnaire has been adopted with permission from previous study with minor modifications, the questioner was translated into Arabic version.

To assess the knowledge regarding family medicine specialty, a common grading method was used as follows: 2 point was given to the correct option, 0 for the incorrect answer and 1 for neutral. After data collection, a participant who correctly answers 75% or more of the questions (15 points out of 20) was considered as having good knowledge about family medicine specialty.

Statistical Considerations

After the data collected is sorted, it was entered and later analyzed using a Statistical Package for Social Sciences (SPSS) program version 23.0. To obtain continuous variables including the standard deviation and the mean, the categorical variable percentages and the frequency, descriptive statistics techniques was applied. Furthermore, the t-test and the ANOVA test were used in assessing the association between the socio-

demographic variables and the perception scores that were obtained. Chi-square test was also used to assess the association between the socio-demographic variables and the level of knowledge about family medicine specialty.

Ethical Considerations

Prior to the commencement of the study, ethical approval was sought from the Institutional Review Board. Furthermore, prior to consenting to the study, the participants were briefed on the purpose of the study, and the extent of their participation as well as how the findings will be used. Emphasis was also made that participation is strictly on a voluntary basis, and that the participant can willfully withdraw at any time.

IV. Results

Socio-demographic characteristics of the participants:

A total of 382 respondents were included in this study. More than half of participants were females (56.5%) and 43.5 % were males. Additionally, we found that approximately about one third of participants aged between 18-25 years and 30.9% of respondents aged between 26-35 years. Participants aged above 55 years represented the least proportion of our sampled population. Regarding educational level of our participants, our findings showed that most of them reported university as current level of education. Furthermore, we found that more than half of respondents were employed. As demonstrated in **Table 1**.

Table 1: Socio-demographic characteristics of the participants (n=382)

Variable	Categories	Frequency	Percent
Gender	Male	166	43.5
	Female	216	56.5
Age (Years)	18-25	121	31.7
	26-35	118	30.9
	36-45	81	21.2
	46-55	40	10.5
	More than 55	22	5.8
Education	Intermediate or below	10	2.6
	High school	62	16.2
	College	41	10.7
	University	246	64.4
	Postgraduate	23	6
Occupation	Employed	216	56.5
	Unemployed	166	43.5

Knowledge regarding family medicine specialty:

Our result demonstrated that the mean score of knowledge regarding family medicine specialty was 15 ± 2.3 points (Range 6 – 20) out of total score of 20 points. Moreover, we found that the higher percentage of participants revealed good knowledge about family medicine specialty (62%) and only 38 percent of respondents showed poor knowledge (**Figure 1**).

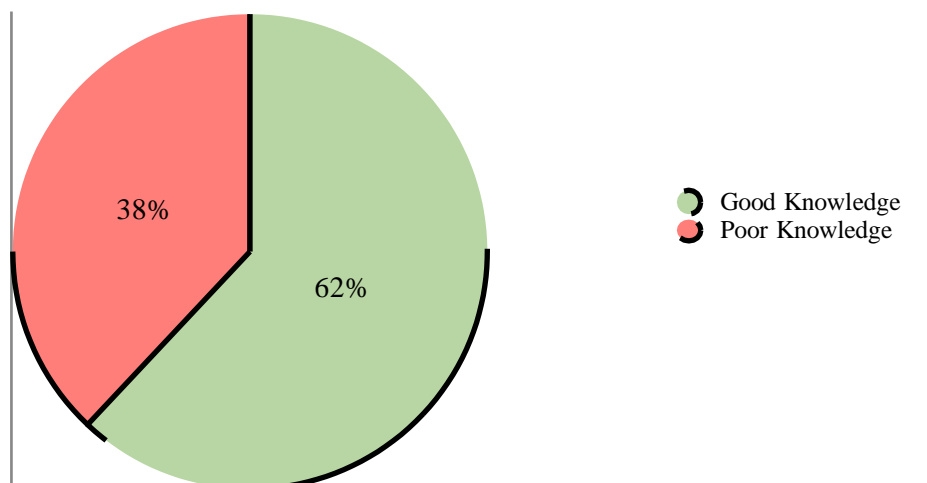


Figure 1: Level of Knowledge regarding family medicine specialty

Additionally, our findings revealed that most of our respondents stated that they are aware of the role of family doctor and the majority of them admitted that family doctor is an important part of health system (61%) and (89%) respectively. Moreover, we found that the vast majority of participants believed that family doctor is a doctor who finished medical school. However, only 19.9% of our respondents disagreed with statement of family doctor is a general practitioner. 78.8% of participants agreed with concept of family doctor is concerned with the total healthcare of all individuals regardless of sex, age, affected organ or system entity. Furthermore, our results showed the majority of participants recognized the main role of family doctor which is to provide patients with health services in community prevention, health care, treatment, rehabilitation, education, and family planning.

Our findings clarified that 86.1% of respondents agreed that family doctor can prescribe medications. About two thirds of participants believed that family doctor can treat common chronic diseases such as diabetes mellitus, hypertension, and bronchial asthma. While, only 21.7% of our respondents agreed that family doctor can treat emergent conditions such as heart attack and stroke. Moreover, we found that more than two thirds of participants identified the fact that the family doctor can not perform major surgeries such as cholecystectomy and appendectomy. Only 27.7% of participants had a regular family doctor (Table 2).

Table 2: General population knowledge regarding family medicine specialty

Question	Yes	No	Not sure
Are you aware of the role of family doctor?	233 (61)	70 (18.3)	79 (20.7)
Is family doctor an important part of health system?	340 (89)	14 (3.7)	28 (7.3)
Is a family doctor a doctor who finished medical school?	317 (83)	6 (1.6)	59 (15.4)
Is a family doctor a GP?	212 (55.5)	76 (19.9)	94 (24.6)
A family doctor is concerned with the total healthcare of all individuals regardless of sex, age, affected organ or system entity.	301 (78.8)	23 (6)	58 (15.2)
The main role of family doctor is to provide patients with health services in community prevention, health care, treatment, rehabilitation, education, and family planning.	321 (84)	10 (2.6)	51 (13.4)
A family doctor can prescribe medications.	329 (86.1)	13 (3.4)	40 (10.5)
A family doctor can treat common chronic diseases such as DM, HTN, and bronchial asthma.	255 (66.8)	57 (14.9)	70 (18.3)
A family doctor can treat emergent conditions such as heart attack and stroke.	83 (21.7)	170 (44.5)	129 (33.8)

A family doctor can perform major surgeries such as cholecystectomy and appendectomy.	31 (8.1)	257 (67.3)	94 (24.6)
Do you have a regular family doctor?	106 (27.7)	254 (66.5)	22 (5.8)

Perception regarding family medicine specialty:

Our results revealed that the mean score of perception regarding family medicine specialty was 53.5 ± 5.8 points (Range 37 – 70) out of a total perception score of 70 points. In addition, we found that about two thirds of respondents (67.5%) believed that it is valuable to have a family doctor in their healthcare and more than one third strongly agreed that family doctor is the first doctor they would like to see in most of their health conditions (34.8%). 42.4% of participants preferred to have a specialist or consultant from other specialties involved in my healthcare. Also we found that the highest proportion of our participants reported neutral response when they were asked about their visit lasts longer when they visit a family doctor (40.8%) and almost similar percentage reported the same response to the statements of taking a longer waiting time to see a family doctor (38.5%).

Only 4.2% of respondents strongly agreed that family doctor don't have enough medical expertise to be involved in my healthcare while 41.9% of participants agreed that family doctor is professional. Almost half of respondents agreed that family doctor is attentive to their concerns. Moreover, we found that 44.8% agreed that family doctor takes a complete history of their complaint and nearly half of participants agreed that they can discuss all health issues with the family doctor. More than one third of participants agreed that The family doctor performs a complete physical examination. 42.9% of participants strongly agreed that they feel comfortable with a family doctor taking their medical history; almost the same proportion strongly agreed that having a family doctor involved in their care was a positive experience. Lastly, we found that 44% of respondents agreed that they are usually satisfied from seeing a family doctor (**Table 3**).

Table 3: General population perception regarding family medicine specialty

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
It is valuable to have a family doctor in my healthcare	258 (67.5)	92 (24.1)	29 (7.6)	3 (0.8)	0 (0)
Family doctor is the first doctor I would like to see in most of my health conditions	133 (34.8)	120 (31.4)	83 (21.7)	42 (11)	4 (1)
I usually prefer to have a specialist or consultant from other specialties involved in my healthcare	162 (42.4)	154 (40.3)	52 (13.6)	10 (2.6)	4 (1)
My visit lasts longer when I visit a family doctor	44 (11.5)	88 (23)	156 (40.8)	86 (22.5)	8 (2.1)
It takes a longer waiting time to see a family doctor	35 (9.2)	69 (18.1)	147 (38.5)	108 (28.3)	23 (6)
I think that the family doctor don't have enough medical expertise to be involved in my healthcare	16 (4.2)	63 (16.5)	120 (31.4)	119 (31.2)	64 (16.8)
The family doctor is professional	81 (21.2)	160 (41.9)	117 (30.6)	23 (6)	1 (0.3)
The family doctor is attentive to my concerns	105 (27.5)	184 (48.2)	73 (19.1)	20 (5.2)	0 (0)
The family doctor takes a complete history of my complaint	125 (32.7)	171 (44.8)	69 (18.1)	12 (3.1)	5 (1.3)
I can discuss all health issues with the family doctor	134 (35.1)	188 (49.2)	38 (9.9)	20 (5.2)	2 (0.5)
The family doctor performs a complete physical examination	73 (19.1)	143 (37.4)	106 (27.7)	57 (14.9)	3 (0.8)
I feel comfortable with a family doctor taking my medical history	164 (42.9)	165 (43.2)	48 (12.6)	5 (1.3)	0 (0)
Having a family doctor involved in my care was a positive experience	158 (41.4)	171 (44.8)	52 (13.6)	1 (0.3)	0 (0)
I am usually satisfied from seeing a family doctor	126 (33)	168 (44)	63 (16.5)	21 (5.5)	4 (1)

Factors associated with knowledge regarding family medicine specialty:

There was no significant association between knowledge regarding family medicine specialty and socio-demographic characteristics of participants. Female participants and postgraduate associated with a higher level of knowledge but without any significant association (P value = 0.137 and 0.172 respectively). As showed in **Table 4**.

Table 4: Factors associated with knowledge regarding family medicine specialty

Variable	Categories	Level of Knowledge		P value
		Poor	Good	
Gender	Male	70 (42.2)	96 (57.8)	0.137
	Female	75 (34.7)	141 (65.3)	
Age (Years)	18-25	50 (41.3)	71 (58.7)	0.692
	26-35	46 (39)	72 (61)	
	36-45	30 (37)	51 (63)	
	46-55	13 (32.5)	27 (67.5)	
	More than 55	6 (27.3)	16 (72.7)	
Education	Intermediate or below	5 (50)	5 (50)	0.172
	High school	31 (50)	31 (50)	
	College	14 (34.1)	27 (65.9)	
	University	89 (36.2)	157 (63.8)	
	Postgraduate	6 (26.1)	17 (73.9)	
Occupation	Employed	77 (35.6)	139 (64.4)	0.289
	Unemployed	68 (41)	98 (59)	

Factors associated with perception regarding family medicine specialty:

There was no significant association between perception regarding family medicine specialty and socio-demographic characteristics of participants. Age and occupation showed relatively a higher level of correlation with perception regarding family medicine specialty but without any significant association (P value = 0.127 and 0.125 respectively). As demonstrated in **Table 5**.

Table 5: Factors associated with perception regarding family medicine specialty

Variable	Categories	Perception score		P value
		Mean	SD	
Gender	Male	53.3	5.32	0.598
	Female	53.7	6.08	
Age (Years)	18-25	52.5	5.47	0.127
	26-35	54.1	5.56	
	36-45	54.0	6.05	
	46-55	54.4	6.55	
	More than 55	52.9	5.18	
Education	Intermediate or below	52.5	7.17	0.840
	High school	53.5	5.96	
	College	54.2	6.03	

	University	53.4	5.70	
	Postgraduate	54.3	4.92	
Occupation	Employed	53.9	5.86	0.125
	Unemployed	53.0	5.59	

V. Discussion

In the current study, the main objective was to investigate the level of knowledge and perception towards family medicine specialty among people in Riyadh, Saudi Arabia. Determining public knowledge and attitudes toward family medicine specialty and finding knowledge gaps can assist those responsible for health education in raising community understanding about the importance of family medicine and correcting any related misconceptions (18). Limited studies explored general population knowledge towards family medicine in Saudi Arabia.

Our results demonstrated that the mean knowledge score was 15 ± 2.3 points (Range 6 – 20) out of total score of 20 points, most of respondents revealed good level of knowledge towards FM. This mean score was higher than previous study was conducted in Saudi Arabia which showed awareness score of 9.57 ± 3.39 (out of 20 possible points) (19). Also, an earlier study in Iran documented a lower level of knowledge about FM (20). While, our results goes along with findings of study in Jazan region in Saudi Arabia, which reported that a significant proportion of participants were aware of principle of FM (21). A previous study was carried out in Hong kong stated that 80% of respondents did know about FM, but a similar proportion responded correctly when asked about the concept of the specialty (22). Moreover, we found that most of participants were aware about the role of family doctor and majority of them stated that family doctor is an important part of health system. This is inconsistent with another previous study in Saudi Arabia (19). An earlier study in Nairobi reported that family doctor could treat chronic diseases like diabetes and conduct family planning, which is in agreement with our findings (23). These variations between studies may be due to differences in scoring and evaluation systems or in characteristics of populations particularly education background, as in our study most of respondents have a high educational level which is reflected by good level of knowledge regarding FM.

Additionally, our results demonstrated that participants showed acceptable level perception towards FM; the mean score was 53.5 ± 5.8 points (Range 37 – 70). Most of respondents agreed that family doctor is the first doctor they would like to see in most of my health conditions. This goes in line with another study in Hong Kong (22). A previous study in Saudi Arabia showed similar results to our findings which reported that almost all participants (93.3%) agreed that non-emergency cases can be treated by family physicians as uncomplicated wounds that do not require suturing or surgical intervention, but opinions on whether family physicians can manage emergent cases were nearly identical (19). Furthermore, we found that the higher proportion of respondents preferred to have a specialist or consultant from other specialties involved in their healthcare. This is supported by another study was conducted in Jazan region in Saudi Arabia (21). On the other side, participants in our study showed a better experience with family doctor than in Jazan region (21). This suggests that the quality of treatment provided by family physicians varies greatly between populations, depending on a variety of factors that might have a significant impact on patient satisfaction. Our finding showed that there was no significant association between the level of knowledge, not even perception and different socio-demographic variables. However, previous study in Saudi Arabia found that job, marital status, and gender significantly affected the awareness and knowledge scores of the included participants (19).

The public's awareness and understanding can be increased through improving communication between family physicians and the general community. This can be accomplished by providing educational programs that further clarify the tasks of family physicians, as well as further training for family physicians to correctly manage various types of chronic illnesses and crises. More research is needed to determine what strategies should be used to ensure the success of the awareness efforts.

Our study had certain limitations. We chose our respondents using convenience sampling. As a result, sample bias is unavoidable. Furthermore, since our study is observational in nature, we were unable to establish a causal association. Finally, due to the obvious lack of randomization in sampling, we are unable to generalize our findings.

VI. Conclusion

The results of this study indicated that people in Riyadh in Saudi Arabia had good knowledge and perception towards family medicine specialty. However, we found some gaps in participants' knowledge about family medicine. Therefore, educational programs and health promotion campaigns are recommended to fill the gap between primary health care physicians and general population in Saudi Arabia.

References

- [1]. Elagi AAA, Jaber BA, Wassly AHA, Ahmed RMS, Bosily FAA. Public's perception and satisfaction on the role and services provided by family physicians in Saudi Arabia: A cross-sectional study. *J Family Med Prim Care*. 2019; 8(10):3282-3286 (tel: 3282-3286). Published 2019 Oct 31. doi:10.4103/jfmpc.jfmpc_621_19.
- [2]. Family medicine practice in Saudi Arabia: The current situation and Proposed Strategic Directions Plan 2020. Al-Khaldi YM, Al-Ghamdi EA, Al-Mogbil TI, Al-Khashan HI *J Family Community Med*. 2017 Sep-Dec; 24(3):156-163.
- [3]. Walston S, Al-Harbi Y, Al-Omar B. The changing face of healthcare in Saudi Arabia. *Ann Saudi Med*. 2008; 28(4):243-250. doi:10.5144/0256-4947.2008.243
- [4]. Al Asmri M, Almalki MJ, Fitzgerald G, Clark M. The public health care system and primary care services in Saudi Arabia: a system in transition. *East Mediterr Health J*. 2020 Apr 16; 26(4):468-476. doi: 10.26719/emhj.19.049. PMID: 32338366.
- [5]. Fasola OE, Alao AO, Ibisola BA, Obimakinde AM, Odekunle IC. Knowledge and perception of Family Medicine among medical students at University of Ibadan, Nigeria. *South African Family Practice*. 2019 Sep 23; 61(5):197-202.
- [6]. Essuman A, Anthony-Krueger C, Ndanu TA. Perceptions of medical students about family medicine in Ghana. *Ghana Medical Journal*. 2013 Dec; 47(4):178.
- [7]. Health statistics annual book 2019. Riyadh: Ministry of Health; 2019.
- [8]. Volpe M, Dedhiya SD. Physicians, patients, and public knowledge and perception regarding hypertension and stroke: a review of survey studies. *Current medical research and opinion*. 2006 Jul 1; 22(7):1319-30.
- [9]. Auspitz M, Cleghorn MC, Azin A, Sockalingam S, Quereshy FA, Okrainec A, Jackson TD. Knowledge and perception of bariatric surgery among primary care physicians: a survey of family doctors in Ontario. *Obesity surgery*. 2016 Sep 1; 26(9):2022-8.
- [10]. Miravittles M, de la Roza C, Morera J, Montemayor T, Gobartt E, Martín A, Alvarez-Sala JL. Chronic respiratory symptoms, spirometry and knowledge of COPD among general population. *Respiratory medicine*. 2006 Nov 1; 100(11):1973-80.
- [11]. Reiner Ž, Sonicki Z, Tedeschi-Reiner E. Public perceptions of cardiovascular risk factors in Croatia: the PERCRO survey. *Preventive medicine*. 2010 Dec 1; 51(6):494-6.
- [12]. Reiner Ž, Sonicki Z, Tedeschi-Reiner E. Physicians' perception, knowledge and awareness of cardiovascular risk factors and adherence to prevention guidelines: the PERCRO-DOC survey. *Atherosclerosis*. 2010 Dec 1; 213(2):598-603.
- [13]. Bidouei F, Abdolhosseini S, Jafarzadeh N, Izanloo A, Ghaffarzadehgan K, Abdolhosseini A, Khoshroo F, Vaziri M, Tourdeh T, Ashraf H. Knowledge and perception toward colorectal cancer screening in east of Iran. *International journal of health policy and management*. 2014 Jun; 3(1):11.
- [14]. Baker R, Mainous AG, Gray DP, Love MM. Exploration of the relationship between continuity, trust in regular doctors and patient satisfaction with consultations with family doctors. *Scand J Prim Health Care*. 2003; 21:27-32.
- [15]. von Bültzingslöwen I, Eliasson G, Sarvimäki A, Mattsson B, Hjortdahl P. Patients' views on interpersonal continuity in primary care: A sense of security based on four core foundations. *Fam Pract*. 2006; 23:210-9.
- [16]. Dias-Barbosa C, Balp, Kulich K, Germain N, Rofail D. A literature review to explore the link between treatment satisfaction and adherence, compliance, and persistence. *Patient Prefer Adherence*. 2012; 6:39-48.
- [17]. Michael Petrilli C, Mack M, Janowitz Petrilli J, Hickner A, Saint S, Chopra V. Understanding the role of physician attire on patient perceptions: A systematic review of the literature-Targeting attire to improve likelihood of rapport (TAILOR) investigators. *BMJ Open*. 2015; 5:e006578.
- [18]. Mergler MJ, Omer SB, Pan WK, Navar-Boggan AM, Orenstein W, Marcuse EK et al. Association of vaccine-related attitudes and beliefs between parents and health care providers. *Vaccine* 2013; 31(41):4591-5. doi.org/10.1016/j.vaccine.2013.07.039
- [19]. Murad MA, Kheimi RM, Toras MM, Alem RH, Aljuaid AM, Alobaidan JN, Binishaq HY, Asiri AA, Sagga MK. Community perspective on family medicine and family physician in Saudi Arabia 2020. *BMC Prim Care*. 2022 Jan 21;23(1):16. doi: 10.1186/s12875-021-01604-8. PMID: 35172729; PMCID: PMC8783484.
- [20]. Honarvar B, Lankarani KB, Rostami S, Honarvar F, Akbarzadeh A, Odoomi N, Honarvar H, Malekmakan L, Rabiye P, Arefi N. Knowledge and Practice of People toward their Rights in Urban Family Physician Program: A Population-Based Study in Shiraz, Southern Iran. *Int J Prev Med*. 2015 Jun 4;6:46. doi: 10.4103/2008-7802.158172. PMID: 26124943; PMCID: PMC4462773.
- [21]. Elagi AAA, Jaber BA, Wassly AHA, Ahmed RMS, Bosily FAA. Public's perception and satisfaction on the role and services provided by family physicians in Saudi Arabia: A cross-sectional study. *J Family Med Prim Care*. 2019 Oct 31;8(10):3282-3286. doi: 10.4103/jfmpc.jfmpc_621_19. PMID: 31742156; PMCID: PMC6857371.
- [22]. Lee A, Siu S, Lam A, Tsang C, Kung K, Li PK. The concepts of family doctor and factors affecting choice of family doctors among Hong Kong people. *Hong Kong Med J*. 2010 Apr;16(2):106-15. PMID: 20354244.
- [23]. Mohamoud G, Mash B, Merali M, Orwa J, Mahoney M. Perceptions regarding the scope of practice of family doctors amongst patients in primary care settings in Nairobi. *Afr J Prim Health Care Fam Med*. 2018 Oct 4;10(1):e1-e7. doi: 10.4102/phcfm.v10i1.1818. PMID:30326721; PMCID: PMC6191765.

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