Physician's Satisfaction Regarding Plan of Care among Physicians in Abha City, Saudi Arabia, 2018

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Abstract

Background: Physicians' satisfaction regarding plan of care can substantially affect their performance and impact patient care. Therefore, by knowing the determinants or factors of satisfaction one can establish suggestions to enhance this satisfaction and thereby ensure better patient' outcomes and high quality care.

Method: The current study was carried out to assess the level of satisfaction and its determinants (associated factors) among Abha city physicians. A cross-sectional study was conducted by means of a questionnaire from October 2018 to June 2019 among physicians in 3 governmental hospitals and primary health care centers in Abha city (n = 385) to evaluate their satisfaction (according to scale) and documentation of a treatment plan, of whom 354 (92%) doctors responded.

Results: The mean age of participants was 34.2. More than half of physicians were male (57.3%) and most of them were Saudi (70.6%). A significant proportion of participants have less than 5 years of experience (47.2%). The majority of participants were found to be satisfied (79.9%). Several factors were found to be associated with satisfaction (p < 0.05) including dealing with opposite sex patients, ability to apply informed consent, relationship with colleagues, availability of supporting staff, supportive practice for new ideas, restriction on and availability of facility services, availability of feedback, health record system, demanding patients, ability to self-update during consultation, ability to do proper consultations, minimal ER cases interruption, age, nationality, level of training, years of experience, duration of consultation, availability of free time, and level of plan documentation.

Conclusion: Although this study had several limitations, the associated factors have helped establish several recommendations that can potentially further improve the physician's satisfaction with their plan.

Key words: physicians' satisfaction, plan of care, management plan.

Introduction

Satisfaction is an enjoyable emotional state that a person experiences when he/she appreciates his/her work and contributes to the performance of an organization as a whole (1). Physicians' satisfaction regarding their plan of care is the status just mentioned when a physician values the treatment plan that he has written for his/her patients. Plan of care or treatment plan is a document written by a physician that consists of patient's condition, procedures required (such as diagnostics), treatments (according to needs including medical, surgical, psychological, educational ...etc.), follow-up, and predicted outcomes (2).

A Physicians' professional satisfaction can be affected by many factors including (but not limited to) achievement, recognition, interest in job, income, working condition, security, etc. (3). However, the one aspect of professional satisfaction that could have direct and significant ramifications on patient outcomes is the physician's satisfaction about his/her plan of care provided to the patients. This is evident in the literature as a highly satisfied physician will likely provide higher quality care resulting in better health outcomes. The other way around is also true as high perceived quality plan of care reflects positively on satisfaction (4-7).

In addition, it is important to remember that this satisfaction does not only have significant implications on patient outcomes but also on physician's overall satisfaction and the performance of the physician and the health system as a whole (5-8).

Physician satisfaction has been studied thoroughly throughout the years not just for its implications on the quality of health care but also because of the impact on an organization whole performance (5,8). However, the satisfaction of plan of care provided by physicians has not been studied as a whole. Some studies have included it as an item in a satisfaction scale but without significant details (general satisfaction scale- Likert type scale) (4), or some of its elements (5-10) but such was not their primary focus.

It is crucial to establish and measure the level of this satisfaction and the factors affecting it (determinants) as knowing them is important in forming strategies to ensure excellent patient outcomes and high quality of care. Therefore, the current study was carried out to assess the level of satisfaction of management plans among Abha City physicians. Moreover, this study also aimed to explore the determinants and barriers to satisfaction whereby knowing them can be helpful to establish recommendations to improve this satisfaction.

Methods

A cross-sectional descriptive design was followed. The study was conducted in governmental hospitals and primary health care (PHCs) in Abha Region, Saudi Arabia, in 2019. Doctors who worked at least for 6 months were selected in a one-stage simple random sampling from 3 different hospitals (Asser Central hospital, Abha Maternity and Children hospital, Abha Psychiatric hospital) and governmental PHCs.

Selection in each center (of the four, PHCs were considered as one center) was based on the number of doctors in the centers. A minimum estimated sample size of 385 was calculated on the basis of hypothesized satisfaction level as 50%, margin of error of 5%, and 95% confidence interval according to the formula: $n = z2 * p * (1 - p)/e2$ (11).

Data were collected using a pretested self-administered structured questionnaire. A self-completed questionnaire was distributed to participants in their centers from October 2018 to June 2019. Each questionnaire contained a letter describing the purpose of the study, the voluntary nature of participation and the confidentiality of the information. Participants were reminded via email and phone in case questionnaires were not completed, to ensure a high response rate.

The study questionnaire was adapted and modified from various scales including Warr-Cook- Wall scale (12), the Physician Worklife Survey (13), Traynor and Wade scale (14), Kumar, Khan, Inder, Sharma job satisfaction scale (15), RAND corporation report (6) and many others. The questionnaire was reviewed by 3 community health experts to ensure high validity. After review, a pilot study (to also ensure high reliability) was conducted on a small sample (n=30) and the results were reviewed by the 3 experts.

The questionnaire was further revised and modified according to experts' recommendations. The questionnaire consisted of 4 main parts, i.e., background characteristics of doctors, determinants of physician satisfaction regarding plan of care, general satisfaction of plan of care statement, and plan of care elements documentation.

The evaluation of determinants of satisfaction consisted of 22 Likert scale questions where "strongly disagree" was coded as 1, "disagree" coded as 2, "neutral" coded as 3, "agree" coded as 4 and "strongly agree" coded as 5 as the answer options. Negative answers were coded in reversed form to avoid bias of the results. Determinants of satisfaction score was calculated by adding all questions and the total score range was from 22 – 110. The summed score was divided by a maximum score of 110. Above 60% was classified as satisfied and 60% and below classified as unsatisfied (10).

The assessment of documentation plan comprised Likert scale questions which were "not at all" coded as 1, "rarely" coded as 2, "sometimes" coded as 3, "most of the time" coded as 4 and "all the time" coded as 5 as the answer options. Documentation of plan score was calculated by adding all 8 questions. The total score range was from 8 – 40. The summed score was divided by the maximum score of 40. Below 60% was considered as poor, 60% to 74% considered as good and 75% and above considered as an excellent documentation plan.

We conducted a reliability test for the determinants satisfaction which was composed of 22 questions with a 5-point Likert scale on items. Based on the results, the reliability test shows 0.646 which indicates a moderately good internal consistency. We also performed reliability analysis for the documentation of plan which consisted of 8 questions with a 5-point Likert scale on items. It was revealed that the reliability test showed 0.662 which also indicates a moderately good internal consistency. The average reliability test of both questionnaires was 0.654 which signifies a moderately good overall internal consistency.

Data were collected and validated using the Statistical Packages for Software Sciences (SPSS version 21, Armonk, New York, IBM Corporation for statistical analysis). Both descriptive and inferential statistics were conducted. P-values ≤ 0.05 were considered as statistically significant. Categorical variables were presented as counts and percentage, while quantitative variables were presented as mean ± standard deviation. In univariate analysis for the relationship between variables of interest versus different categorical variables, chi-square was applied.

Results

We distributed 385 questionnaires to the targeted participants and 354 were returned (response rate 91.9%). Age range was from 24 to 64 years old (mean 34.2, SD 08.4) of whom the majority were in the younger age group (≤30 years old). Males were more than females (57.3% vs. 42.7%) and Saudis made up 70.6% of the total sample. Almost half of the participants had less than 5 years of experience (47.2%). Regarding the daily routine of physicians, 36.7% have seen 11 – 25 patients per day, 32.2% have seen 1 – 10 patients per day and the rest have seen more than 25 patients per day. Nearly all physicians had an average of 8 hours or less duty in a single day. A large proportion of them had 5 times or less of on-call duties per month and more than half of the physicians stated that they have seen less than 5 patients during these on-calls. More than half of them (50.6%) thought that the maximum number of patients per shift should be in the range of 1 – 10 to maintain quality care. Also more than half of participants (51.1%) suggested the average proper time for each consultation to be 11 – 20 minutes, followed by more than 20 minutes (31.9%) and the rest suggested 1 – 10 minutes. More than a half of them feel they don't have a good amount of free time while 24.3% thought otherwise and 21.2% of them were not sure (Table 1).

Figure 1 shows the distribution of participants' level of training where 28.2% of them were non-training residents, followed by junior residents (21.2%), senior residents (20.9%) and specialists (15.5%) while the least of them were consultants.

Figure 2 depicts the distribution of participants' specialty. Slightly more physicians were in the internal medicine group (19.8%), followed by family medicine (18.4%) and general physicians (13.8%), while the least of them were in the Obstetrics and Gynecology physicians group (9%).

The determinants of satisfaction have been elaborated in Figure 3, where a list of 22 statements had to be answered by physicians and the answer options were in the form of a Likert scale such as (1) strongly disagree, (2) disagree, (3) neutral, (4) agree, (5) strongly agree. As shown in the figure, the majority of physicians in our study did not agree with the notion that dealing with the opposite sex patient is awkward or it has any negative impacts on management of care (77%, 80% respectively). It appears that the concept of informed consent was clearly understood and applied by most of the physicians. 72% of doctors felt satisfied with their relationship with their colleagues and at the same time nearly 90% agreed that if their relationship is excellent, the plan of care will also be excellent. Just above half of participants felt that there are available supporting staff and allied health professionals in their practice. About 50% of doctors experienced restricted access to some resources and services. While ongoing training is acknowledged by the majority as an essential factor for ensuring high quality plan of care, only 64% found their level of training adequate when it comes to decision making. Only 40% of physicians reported that their center is supportive when new ideas are presented to improve care. Regarding laboratory, radiology, pharmacy services only 38% were found to be satisfied with them.

Approximately one third of the participants reported they receive feedback for the referrals they made, while almost everyone agreed for the need for a universal electronic health record (accessible patient's file by all providers); only 38% were satisfied with the current health record system (which is un-exchangeable between providers). Seeing a large number of demanding patients was acknowledged by around half. More than 65% of doctors complained of inadequate time to do proper consultation (including health promotion and prevention), inability to self-update during consultations due to limited time, and emergency cases interrupting consultations. Few were able to maintain high quality of care with the increasing number of patients seen. Large numbers of participants (58.8%) encountered complex cases requiring additional time for consultations. Overall, 63.5% of physicians stated they were satisfied with their plan of care.

Figure 4 presents the documentation of a plan where a list of 8 questions had to be answered by the physicians. The questionnaires were in a Likert form scale where "not at all", "rarely", "sometimes", "most of the time" and "all the times" were the answer options. As can be seen from the

figure, around 30% managed to document the problem list, procedures, treatments, follow up and reviewed previous plans all the time, whereas outcome, goals, and needs documentations' (all the time) were below 15%.

Physicians' satisfaction and documentation of plan have been elaborated in Table 2. The mean satisfaction score was 73.6 (SD 8.9). This has been recoded into two categories based on the given criteria such as unsatisfied with 71 (20.1%) and satisfied with 283 (79.9%). With regards to the documentation of plan, the mean score was 29.3 (SD 5.7) and has been classified into three groups such as poor plan with 55 (15.5%) and good plan with 123 (34.7%) and excellent plan with 176 (49.7%).

We applied chi square test at Table 3 to measure the relationship between physicians' level of satisfaction among sociodemographic characteristics and documentation of plan with p-values which indicates whether the relationship is statistically significant. Based on the results, age group in years has a significant relationship on the level of satisfaction (p=0.001), where 40 years old or more were significantly satisfied.

A significant difference was found on nationality (p=0.004), where non-Saudis were significantly more satisfied compared to Saudis. Consultants were significantly more satisfied compared to other groups (p=0.004). Physicians with more than 10 years' experience were significantly more satisfied compared to the other groups (p<0.001). Physicians were significantly more satisfied with consultation time duration of 11 – 20 minutes (p=0.045). Those without a good amount of free time were more likely to be dissatisfied compared to their opposite (p=0.004). A significant difference was found on the level of documentation of plan (p-<0.001), where excellent documentation of plan was associated with high level of satisfaction. Other variables included in the test revealed to have no significant relationship with level of satisfaction.

Table 4 illustrates the relationship between physicians' level of satisfaction and its determinants (scale items). Almost all items (except item 21) were statistically associated with satisfaction.

Table 1: Socio demographic and background characteristics of participants (n=354)

Study variables	No. (%)
Age group	
• ≤30 years	159 (44.9%)
• 31 – 40 years	132 (37.3%)
• >40 years	63 (17.8%)
Gender	
• Male	203 (57.3%)
• Female	151 (42.7%)
Marital Status	
• Married	247 (69.8%)
• Not married	107 (30.2%)
Nationality	
• Saudi	250 (70.6%)
• Non Saudi	104 (29.4%)
Years of experience in medical practice	
• <5 years	167 (47.2%)
• 5 – 10 years	117 (33.1%)
• >10 years	70 (19.8%)
Number of patients you see in a regular shift or day	
• 1 – 10	114 (32.2%)
• 11 – 25	130 (36.7%)
• >25	110 (31.1%)
Average hours of work day (excluding on-calls)	
• ≤8 hours	319 (90.1%)
• >8 hours	35 (09.9%)
Number of 24 hour on-calls per month	
• None	141 (39.8%)
• 1 – 5 times	144 (40.7%)
• >5 times	69 (19.5%)
Number of patients you see during on-calls	
• <5	181 (51.1%)
• 5 – 10	77 (21.8%)
• >10	96 (27.1%)
Maximum number of patients per shift	
• 1 – 10	179 (50.6%)
• 11 – 20	104 (29.4%)
• >20	71 (20.1%)
Average time needed for each patient in consultation	
• 1 – 10 minutes	60 (16.9%)
• 11 – 20 minutes	181 (51.1%)
• >20 minutes	113 (31.9%)
Having a good amount of free time	
• Yes	86 (24.3%)
• No	193 (54.5%)
• Not sure	75 (21.2%)

Figure 1: Distribution of participants' level of training

Level of Training

- Junior resident: 21.2%
- Senior resident: 20.9%
- Consultant: 14.1%
- Specialist: 15.5%
- Non-training Resident: 28.2%
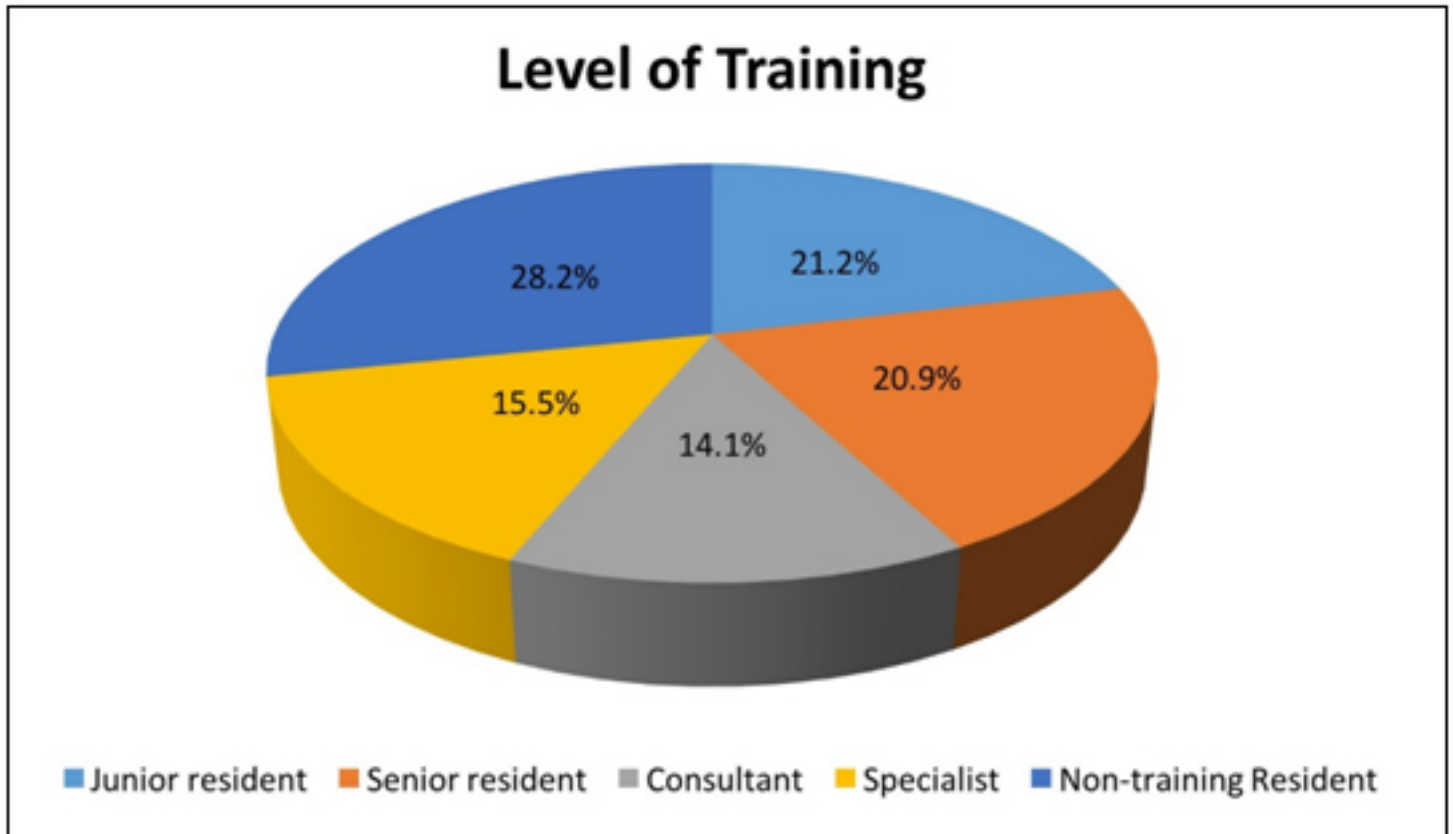
Figure 2: Participants' specialties

Speciality

- Family Medicine: 18.4%
- General physician: 13.8%
- Pediatrician: 12.4%
- Surgery: 12.4%
- Ob-Gyne: 9%
- Internal Medicine: 19.8%
- Other specialty: 14.1%

Figure 3: Determinants of Satisfaction

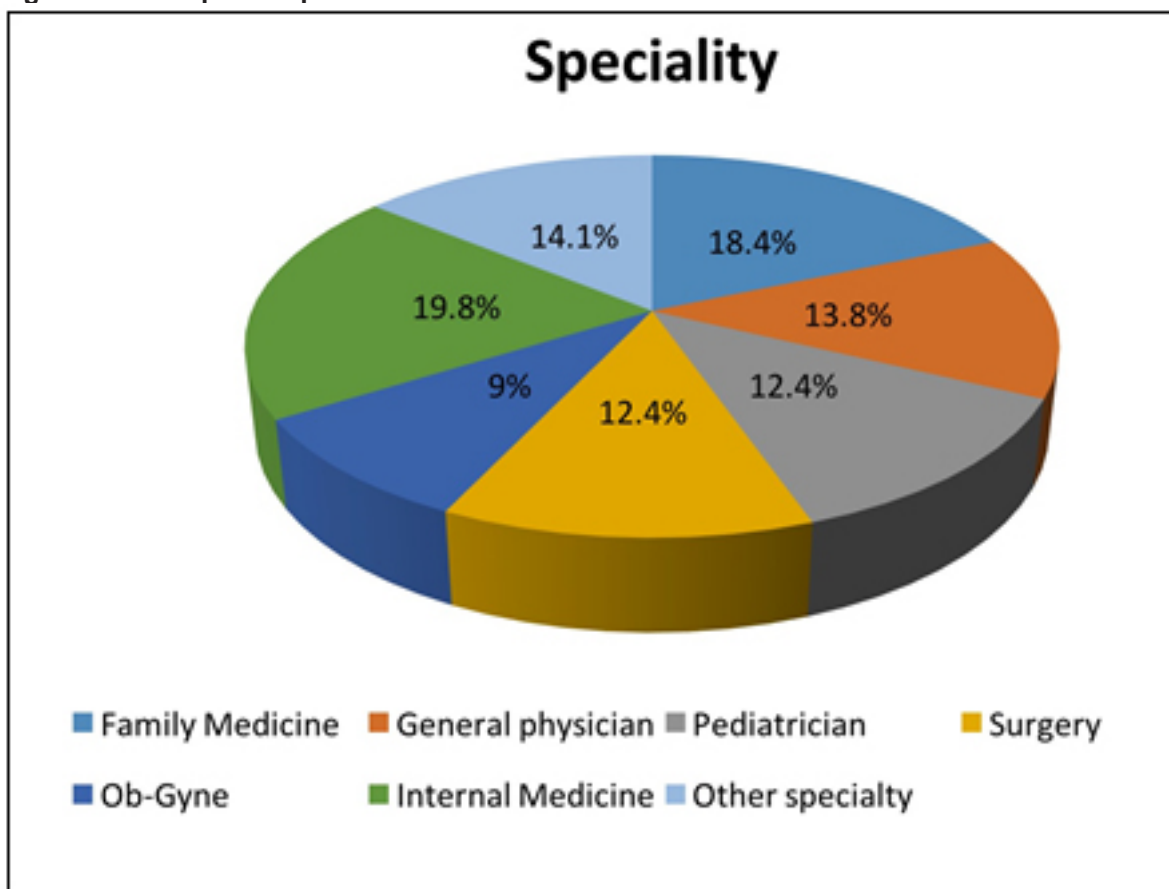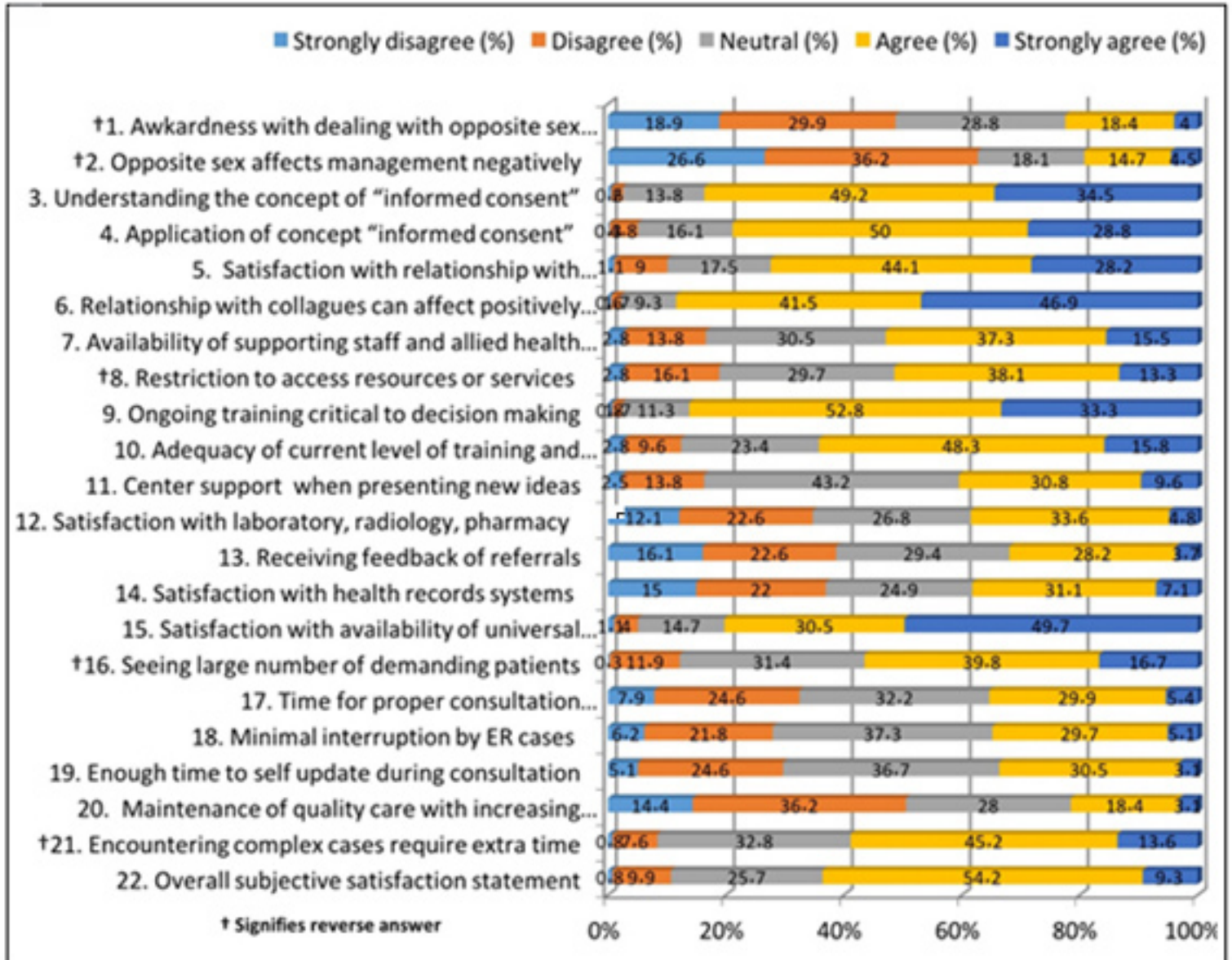Figure 3: Determinants of Satisfaction
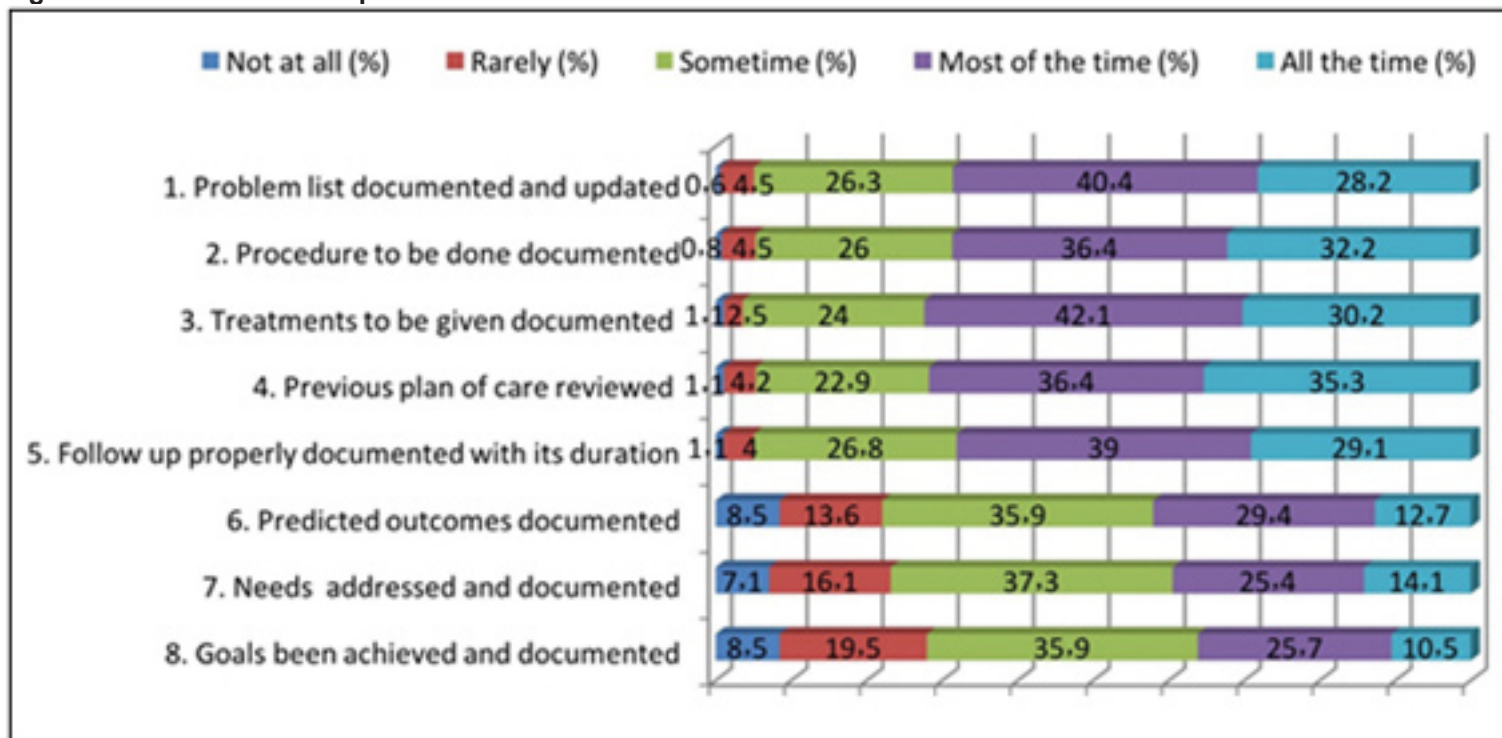
Figure 4: Documentation of plan

Table 2: Prevalence of physician satisfaction and determinants of plan

Predictor variables	Values
Satisfaction Score (mean ±SD)	73.6 ±08.9
Level of Satisfaction	
Unsatisfied	71 (20.1%)
Satisfied	283 (79.9%)
Determinants of plan score (mean ±SD)	29.3 ±05.7
Level of Determinants plan	
Poor plan	55 (15.5%)
Good plan	123 (34.7%)
Excellent	176 (49.7%)

Table 3: Physicians' satisfaction according to socio demographic characteristics and documentation plan (n=354)

Variables	Level of Satisfaction		P
	Unsatisfied (n=71)	Satisfied (n=283)	value§
Age group			
• ≤30 years	41 (25.8%)	118 (74.2%)	
• 31 – 40 years	28 (21.2%)	104 (78.8%)	
• >40 years	2 (03.2%)	61 (96.8%)	0.001 **
Gender			
• Male	46 (22.7%)	157 (77.3%)	
• Female	25 (16.6%)	126 (83.4%)	0.156
Marital Status			
• Married	49 (19.8%)	198 (80.2%)	
• Not married	22 (20.6%)	85 (79.4%)	0.876
Nationality			
• Saudi	60 (24.0%)	190 (76.0%)	
• Non Saudi	11 (10.6%)	93 (89.4%)	0.004 **
Levels of training			
• Junior resident	21 (28.0%)	54 (72.0%)	
• Senior resident	13 (17.6%)	61 (82.4%)	
• Consultant	02 (04.0%)	48 (96.0%)	
• Specialist	08 (14.5%)	47 (85.5%)	
• Non-training Resident	27 (27.0%)	73 (73.0%)	0.004 **
Specialty			
• Family Medicine	18 (27.7%)	47 (72.3%)	
• General Physician	12 (24.5%)	37 (75.5%)	
• Pediatrician	7 (15.9%)	37 (84.1%)	
• Surgery	7 (15.9%)	37 (84.1%)	
• Ob-Gyne	5 (15.6%)	27 (84.4%)	
• Internal Medicine	10 (14.3%)	60 (85.7%)	
• Others	12 (24.0%)	38 (76.0%)	0.397
Years of experience in medical practice			
• <5 years	49 (29.3%)	118 (70.7%)	
• 5 – 10 years	15 (12.8%)	102 (87.2%)	
• >10 years	07 (10.0%)	63 (90.0%)	<0.001 **
Patients you see in a regular shift			
• 1 – 10	22 (19.3%)	92 (80.7%)	
• 11 – 25	21 (16.2%)	109 (83.8%)	
• >25	28 (25.5%)	82 (74.5%)	0.194
Average hours of daily work			
• ≤8 hours	64 (20.1%)	255 (79.9%)	
• >8 hours	07 (20.0%)	28 (80.0%)	0.993
Number of 24 hour on-calls per month			
• None	32 (22.7%)	109 (77.3%)	
• 1 – 5 times	22 (15.3%)	122 (84.7%)	
• >5 times	17 (24.6%)	52 (75.4%)	0.168

Table 3 (Continued)**: Physicians' satisfaction according to sociodemographic characteristics and documentation plan (n=354)**

Variables	Level of Satisfaction		P value§
	Unsatisfied (n=71)	Satisfied (n=283)	
Number of patients seen during on-calls			
• <5	37 (20.4%)	144 (79.6%)	
• 5 – 10	15 (19.5%)	62 (80.5%)	
• >10	19 (19.8%)	77 (80.2%)	0.982
Maximum number of patients per shift			
• 1 – 10	38 (21.2%)	141 (78.8%)	
• 11 – 20	19 (18.3%)	85 (81.7%)	
• >20	14 (19.7%)	57 (80.3%)	0.833
Average time needed for each patient in consultation			
• 1 – 10 minutes	12 (20.0%)	48 (80.0%)	
• 11 – 20 minutes	28 (15.5%)	153 (84.5%)	
• >20 minutes	31 (27.4%)	82 (72.6%)	0.045*
Having a good amount of free time			
• Yes	09 (10.5%)	77 (89.5%)	
• No	51 (26.4%)	142 (73.6%)	
• Not sure	11 (14.7%)	64 (85.3%)	0.004*

§ P-values have been calculated using chi square test.
* Statistically significant

Table 4: The relationship between physician's level of satisfaction and its determinants

Statements	Level of Satisfaction		P-value§
	Unsatisfied (n=71)	Satisfied (n=283)	
It feels awkward when dealing with opposite sex patients	03.1 ±01.0	02.4 ±01.1	<0.001*
I think dealing with opposite sex can affect management of care negatively	03.0 ±01.1	02.2 ±01.1	<0.001*
I fully understand the concept of "informed consent"	03.7 ±0.85	04.3 ±0.71	<0.001*
I am applying the concept "informed consent" in my practice	03.4 ±0.84	04.2 ±0.74	<0.001*
I feel satisfied with relationship with colleagues or team members	03.1 ±0.99	04.1 ±0.85	<0.001*
A better relationship with other team member can affect positively my management of care	03.9 ±0.95	04.4 ±0.67	<0.001*
Supporting staff and allied health professionals are available in my practice	02.6 ±0.97	03.7 ±0.89	<0.001*
In my patients' workup or treatment, I face restriction to access resources or services that could affect management	03.7 ±0.99	03.4 ±0.99	0.002*
Ongoing training is important to help me in decision making in plan of care	03.9 ±0.91	04.2 ±0.70	<0.001*
I feel that my current level of training and knowledge is adequate when it comes to decision making	02.8 ±01.0	03.8 ±0.81	<0.001*
My center is supportive when I present new ideas that would improve practice	02.8 ±0.83	03.4 ±0.88	<0.001*
I am satisfied with laboratory, radiology, pharmacy services in my center	02.2 ±0.98	03.2 ±01.1	<0.001*
I receive feedback of referrals I make	02.2 ±01.0	02.9 ±01.1	<0.001*
I am satisfied with health records systems or patients files	02.1 ±0.98	03.1 ±01.1	<0.001*
I would be satisfied if I was provided with universal electronic health record or file for my patient	03.9 ±01.2	04.3 ±0.81	<0.001*
I see a large number of demanding patients	03.8 ±01.0	03.6 ±0.87	0.043 *
I have enough time to do proper consultation including health promotion and prevention service	02.2 ±0.88	03.2 ±0.97	<0.001*

§ P-value has been calculated using Mann Whitney U test.
* Statistically significant

Discussion

To the best of our knowledge, this is the first study on satisfaction of physicians regarding their plan. Some of the studies have included some items relating to the topic but the main topic was not the primary focus. Therefore, comparison to the results of other studies of job satisfaction of physicians might not be appropriate, but it will be done in our discussion to point where it was found relevant.

We found that the majority of Abha physicians were satisfied (80% by calculated satisfaction score and 64% by subjective statement). Bahnassy et al. mentioned that such variation between score and subjective statement of satisfaction has been reported in several satisfactions studies (16). They also reported similar finding of disparity in their study. They explained that even when the perceived satisfaction score is high, many individual items can still show substantial dissatisfaction (16).

The disparity might also be attributed to the fact that physicians could have higher expectations causing a lower perceived sense of satisfaction. Another reason for such discrepancy is that there might be a missing item(s) in our scale since it is the first. A fourth possible explanation for such variance is that when open discussion is made with each participant about each item, they might feel perhaps more satisfied given they were satisfied with multiple items.

Our study results demonstrated significant associations between almost all individual items in the scale and the final satisfaction score. For instance, difficulty or awkwardness with dealing with opposite sex was more frequently reported by the unsatisfied group (average score of 3.1 vs 2.4). More importantly, those unsatisfied physicians were also more likely to feel that this affected their management of care negatively (average score of 3 vs 2.2).

Alkabba et al. addressed this issue in their study of major medical and ethical challenges in Saudi Arabia that can impact care. They noted that while dealing with the opposite sex is not a problem in the west, it certainly could be an issue here due to the cultural and religious background (17). It is commonly encountered in our country, and causes some stress for some doctors, and it can affect health care management (17).

In order to overcome this issue, it is essential to remember that medicine is a holistic job and the physician is there to relieve patients not to embarrass them or put them in an awkward position. Moreover, it is actually allowed in Islam to examine an opposite sex patient, in case the same sex physician is unavailable (17). Therefore, the doctor should not be alarmed with these situations. Moreover, with good communication and excellent explanation of why the procedures/examinations are required, almost all patients will consent for procedures making the encounter easier.

Informed consent is another item with a strong association with satisfaction score. Our study indicated that satisfied physicians are more likely to have understood and applied the informed consent (average scores 4.3, 4.2 vs. 3.7, 3.4, respectively). The explanation of this association is that when a doctor fully explains the treatment or procedures to the patient, the patient will feel empowered and will give positive reinforcing feedback to their doctor. The doctor as a result will then feel that they are doing right and are thereby more satisfied.

Traditionally, informed consent concept has been taught to medical students as a part of their curriculum, but it seems that some doctors were unable to apply it (or improperly applied it) maybe due to high workload (patients are rushed to sign consent without fully reading it), language barrier, or other reasons (17). Therefore, we recommend devoting continuing medical education (CME) sessions to remind physicians of its importance and to discuss the obstacles that may discourage its application.

Satisfaction of relationship with colleagues was found to be positively associated with satisfaction score (average score 4.1 vs 3.1). Satisfied physicians were more likely to have satisfied relationships and more likely to report that their relationship is influencing management positively (average score 4.3 vs 3.7). Friedberg et al. noted that team members need to feel connected with others, need to get their respect, and need to gain their cooperation (6). Once these happen, the member will be more encouraged to be an active participant which will lead to successful and effective teamwork. This teamwork will result in improved healthcare outcomes and further satisfaction of members (6). This suggests that a physician should try to build a healthy relationship to increase his/her satisfaction.

While supporting staff, allied health, and several facilities (laboratory, pharmacy, radiology) might not be available in every practice, their availability is associated with higher physician satisfaction score (average scores 3.7, 3.2 vs 2.6, 2.2 respectively). It is common sense that health care needs teamwork and multidisciplinary planning and this would require other members and different services to be available to support the doctor (6). Several researchers have acknowledged that the unavailability of these is a common area of dissatisfaction that can potentially affect quality of care or care plan. (5,6, 8,15,17,18). Therefore, effort should be made to make them available.

Restriction of resources and services that would affect management has been addressed by both groups with slightly more in the unsatisfied group (average scores 3.7 vs 3.4). Friedberg et al. supported this by mentioning that putting restrictions on certain services that require authorities' approval can affect decision making and delay needed management and therefore affect satisfaction (6). However, it is worth mentioning that such restrictions and regulations are there to limit unnecessary procedures and cost. Therefore, instead of removing these restrictions, perhaps ensuring easy accessibility to the authority of such services can increase the satisfaction.

Satisfied physicians in our study were more frequently found to express that the practice is welcoming or supporting new ideas for improvement (average score 3.4 vs 2.8). Istiono et al. supported our finding in their study where they found that participation in quality improvement activities has increased doctors' satisfaction (19). Similarly, several other studies found that unsupported new ideas lead to dissatisfaction and can affect quality of care (6,20). Therefore, we recommend to assign a person or a department that can review new ideas from staff and assess if they can be applied or not.

Receiving feedback on referrals was more frequently stated in the satisfied group (score 2.9 vs 2.2). Feedback provides many benefits to the physician. For example, if I make a referral from PHC for a patient I am suspecting has appendicitis, and when the patient returns after appendectomy with the feedback showing that my diagnosis and management was right I will definitely be highly satisfied with my care. This feedback can reinforce existing knowledge. Feedback can also be helpful if a doctor makes a wrong diagnosis. It gives the chance to adjust and improve future decisions and therefore higher satisfaction with future consultations. While we have a system for feedback, it is not implemented well. Hopefully, with the introduction of an electronic file system, the feedback system will be better implemented and feedback will be viewed by multiple providers.

While dissatisfaction with medical health records was more prominent in the unsatisfied group, both groups agreed (but slightly higher in the satisfied group) for necessity of universal exchangeable health record between providers (average score 2.1, 3.9 vs 3.1, 4.3 respectively). According to Friedberg et al. (6) health record is a cause of physician dissatisfaction because it can be time-consuming to use, interfere with face to face consultation, or is un-exchangeable between different providers.

The current health record system in Saudi Arabia is a mixture of electronic and hardcopy with the movement now towards electronic. Both systems have disadvantages. The hard copy, which was the prominent at time of study, is a semi-organized file containing large number of papers where there is difficulty at times in finding specific information about the patient. Moreover, the full information of this file is not accessible by another health provider. The disadvantages of an electronic one, on the other hand, are system freezing, loss of access temporarily if power fails, complexity of technology, need training to use, additional time needed for data entry and many others (21). With these issues regarding health records, it is expected that physicians will be less satisfied with their plan.

Demanding patients can cause a lot of stress to physicians, affect the flow of work and even can affect decision making in some circumstances (6,10,18). For instance, a patient is having a viral infection but insisting on taking an antibiotic. Some doctors who want to remain trustworthy to the patient, might prescribe it even when there is no need. (22).

In our study, dissatisfied physicians were slightly more likely (3.8 vs 3.6) to report encountering demanding patients. Perhaps then training physicians on how to deal with these patients can alleviate the stress and improve satisfaction.

Having enough time to do proper consultation (including health prevention and promotion) was less frequently expressed by the unsatisfied group (score 2.2 vs 3.2). Physicians providing these services are more likely to be comprehensive, and more likely to feel a sense their plan is complete and excellent. Therefore, they will be more satisfied with their plan of care. A study in Saudi Arabia showed that a significant number of doctors were unable to attend CME activities and implement health promotion and prevention services due to high patient load (23). Mixed appointment system was suggested to help improve this problem (9, 23).

Emergency cases interrupting consultations can lead to disturbed flow of work, extra stress, loss of rapport, extra time to recap with previous consultation, and perhaps rushing the consultation to attend to an emergency case. It is evident in our study that the satisfied group were less frequently having emergency room (ER) cases interrupting their consultation. Alkhalaf et al. noted a negative relation between physician's job satisfaction and ER cases interruption (10). Unfortunately, there is no study discussing satisfaction of plan of care and ER cases interruption.

The ability to self-update during consultation can make a big difference as it can ensure providing patients with high quality care and the best evidence based treatment. Moreover, physicians will feel that they are on the right track which leads to higher satisfaction. This is clear in our study as the satisfied group were more frequently reporting having enough time to self-update during consultations.

Similarly, Alkhalaf et al. noted that insufficiency of time to update self is associated with poorer physician's job satisfaction score (10). There are no studies relating updating and satisfaction of plan of care but given the results it is suggested that each clinic should be provided with the latest guidelines for common problems that are constantly updateable and easily accessible to doctors. This can reduce the hassle of doctors trying to look for new evidence in a busy clinic and ensures a high quality of care.

Increasing the number of patients is associated with reduced quality of care per patient which perhaps leads to a lower satisfaction. Surprisingly, we found that satisfied physicians were actually more likely to mention that they are able to maintain high quality care with the increasing number of patients (average score 2.8 vs 1.9). This finding can be explained by perhaps a missing confounder that was not adjusted for during the study. Those who report higher satisfaction might have a psychological trait of self-confidence. This means that they are more likely to view themselves as competent enough to perform efficiently even with a higher number of patients. Since this piece of

data was not collected, it is imperative in future satisfaction studies to be included in the scale.

Generalized self-efficacy scale is an excellent tool that can be used to collect this data and improve our scale (24).

Encountering complex cases is the only item that was not found to be related to satisfaction score. This can be explained by some physicians enjoying encountering challenging cases, and therefore will feel more satisfied if they solve such cases. On the other hand, others prefer to see simple cases as they might feel overwhelmed or pressured if they encountered complicated ones. This feeling might make them perceive that they underperformed or are not skilled enough, which results in a lower satisfaction score.

Further findings in our study show there appears to be a gradual but substantial increase in satisfaction score with the increasing of age and working experience. Employees above 40 years of age and those having work experience above 10 years were more satisfied when compared to their counterparts (P=0.001). A similar pattern (but related to job satisfaction) was found by several studies (1,8,13,25).

With regard to gender, males were slightly more satisfied when compared to females although the result was not statistically significant. Similarly, the same finding was found in job satisfaction in the Kumar et al. study (1). However, most job satisfaction studies revealed no relation between gender and satisfaction (25, 26). These studies also reported that ethnicity, nationality and marital status were not found to be associated with job satisfaction (25,26).

In comparison to our study, marital status similarly was not found to be a factor in satisfaction of plan of care but in terms of nationality, non-Saudis were more satisfied (almost 90%) as compared to Saudis (76%) (P=0.004). The reverse was reported by the study of Al Khalaf and his colleagues, showing a slight difference in job satisfaction in female Qatari doctors when compared to non-Qatari females (10).

Across different specialties, satisfaction level regarding plan of care was not identical, but not statistically significant. Family medicine doctors were the least satisfied group (72%), followed by general physicians who are non-program residents (75%). Internal medicine doctors were the mostly satisfied group (85%) with pediatricians, surgeons, obstetrician and gynecologists being in the middle (84%). These findings could be explained by complexity of patients, time pressure (especially new visits), uncertainty, lack of support, inadequate facilities or services provided to the family physicians (13, 26, 27). Perhaps, family medicine physicians are having higher expectations or perceiving that they should do better given the responsibility they have. This could also explain why general practitioners are more satisfied because they might have lower responsibility and expectations.

Doctors working in hospitals are probably more satisfied due to better accessibility to services (radiological, laboratory, pharmacy, supporting staff and allied health professionals, internet and computer access), availability of feedback upon making consultations, ability to consult other specialists (which could reinforce and strengthen new knowledge which essentially improves plan of care), and superior health records systems (5).

The level of training was strongly associated with the level of satisfaction in our study. Non-program and junior program residents (R1, R2) had the lowest but comparable level of satisfaction (73%, 72% respectively). As the level of training is increasing, satisfaction of plan is also increasing with consultants at a highest satisfaction level of 96% followed by specialists at a level of 85%. This indicates the necessity of increasing availability of post-graduate programs for doctors to improve satisfaction of management plans in which about 30% of physicians in this study were not enrolled in any. This study was conducted only in Abha. Therefore, the percentage of non-program residents in Saudi Arabia might be even higher than 30%.

Lack of training (including training in psychosocial aspects of care) or uncooperative training policy has been addressed in the literature as a common cause of dissatisfaction and decline of quality of care (10,13,15,19). For instance, in a study of PHC physicians' self-perceived abilities, they were found to be 30% confident and competent in handling usual primary care cases (19). This further proves the association between training and plan of care satisfaction.

Other statistically significant associations with satisfaction of plan of care found in our study were the perceived proper consultation time, level of plan documentations, and availability of free time (p=0.045, 0.001, 0.001, respectively).

Regarding the first, we found that doctors were less likely to be satisfied if they spend more than 20 minutes in consultations. According to the results, the ideal duration of consultation is around 10 to 20 minutes. Howie and his colleagues (28) investigated GP consultations and noted 3 styles of consultations based on the duration of consultations. Styles were faster (defined less than 5 minutes), intermediate (6-9 minutes), and slow (10 minutes and more). Slower style doctors addressed more psychosocial issues related to patient's care as well as longer term problems. These GPs also managed to provide more health education. They reported higher patients' satisfaction with slower consultations.

Even though this result is statistically significant and was supported by Howie et al. (28), we cannot advise all doctors to strictly adhere to the duration specified above (10-20 minutes) due to several reasons. One of the reasons is that the content of the consultation is more important than the length (28).

Although, some authors have raised some concerns regarding the brevity of consultation, there is not any specified ideal length in the literature due to the recognized variation of it across different countries, patients, and doctors (29, 30). For instance, Guanghui et al. mentioned that the average duration of consultation was about 2 minutes, whereas in Sweden the average was 20 minutes (30, 31). These could be attributed to differences in the health care systems, practice characteristics, workload, cultural factors, political factor or even others (30).

Examples of patients' factor that could require longer consultations are new or first visits, old patients, female or those with mental health issues (30). With regard to doctors, different specialists are very likely to have different approaches to patients' complaints and therefore different consultation durations. For example, a dermatologist might require 5 minutes in his helping a patient with a wart, whereas a psychiatrist might require at least 30 minutes for managing patients with severe depression. In addition, it has been found that old, female, mental and social health professionals are more likely to have lengthier consultation than their counterparts (30).

With respect to level of documentation, there is a clear escalating effect where better plan documentation is seen with superior satisfaction regarding the plan. It can be explained both ways. Doctors who are more satisfied are more likely to ensure their plan to be well-documented. Moreover, excellent documentation will ensure higher physician's satisfaction. For instance, a physician who reviews a previous visit plan that is well-documented on a follow up visit will definitely be more satisfied when writing the new plan.

Availability of free time was also a strong positive factor in satisfaction in our study. Almost 90% of physicians who stated having free time were found to be satisfied compared to 73% in those having no free time (p=0.004). Unavailability of free time could mean excessive devotion of a person's time in work and at the same time have no extra time to spend on other aspects of life (e.g. family). These can potentially lead to burn-out syndrome which is an emotional, physical, and mental exhaustion which occurs due to persistent and excessive stressors at a job. Burnout syndrome can lead to reduced level of enthusiasm, lower sense of accomplishment, feeling overwhelmed, lower performance, and inability to meet constant demands (21). These consequences might have a strong negative impact on satisfaction of a physician's plan. Unfortunately, there is not any article studying the relationship between burnout syndrome and satisfaction of plan of care but there are plenty of others reporting a lower job satisfaction with higher burnout rate. Coplan et al's study is an example of that (21).

Another aspect or area of satisfaction with relation to burnout that was studied in the literature is satisfaction with work-life integration. Tait et al. found in their study that a physician with burnout syndrome is more likely to be dissatisfied with work-life integration (24).

Given the potential of burnout syndrome to lead to the above consequences and our finding above, it is essential that those at risk or suffering from it be identified and given perhaps a vacation where that can relax for a while and then get back to work with full energy to ensure better job performance and satisfaction.

Statistically insignificant associated factors with satisfaction were number of patients seen in a regular shift, number of on-calls per month, and the perceived maximum number of patients per shift. Doctors who were in the middle (in terms of number of patients seen or number of shifts) had the highest satisfaction. We initially hypothesized that over-worked physicians (high number of patients and shifts e.g., >25 patients, >5 calls) will not be satisfied as they can rush consultations and become tired with workload. Rushing and high workload can adversely affect concentration and clinical judgment and thereby can affect satisfaction. This is true in our findings as over-worked were the least satisfied group which is also in keeping with the notion stated above regarding burnout syndrome (in which the over worked are more likely to be burned out). In addition, it seems that even under-working can negatively affect satisfaction. All of this can be explained by the Eustress model demonstrated by inverted U shape graph indicating both high and low levels of stress (workload) are associated with the low level of performance and productivity and therefore satisfaction (32).

The average working hours per days and number of patients seen during on-call days were not found to be affecting satisfaction.

In conclusion, this study demonstrated that the majority of physicians in Abha were satisfied with their plan. Several factors have contributed to this satisfaction. By knowing these factors and applying the aforementioned recommendations, this satisfaction can be further improved to ensure better health outcome and superior quality care.

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