

Physicians' Views On Defensive Medicine: A National Survey in Imam Abdulrahman Bin Faisal Hospital at National Guard, Dammam City, Eastern Province Saudi Arabia 2018-2019

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Abstract: ***Aim:** Aim of the study was to evaluate the prevalence of defensive medicine among physicians working in Imam Abdulrahman Bin Faisal Hospital (IABFH) in Dammam, Saudi Arabia. **Method:** This cross sectional study was conducted during December 2018 to January 2019 in which all doctors who were working in medicine and surgery department at IABFH participated in the study. Closed ended questionnaire was provided to each participant after explaining the purpose of the study. **Result:** Total of 52 out of 232 doctors participated in the study and hence participation rate was 83%. Doctors from surgery department showed significant disagreement compare to medicine doctor regarding practicing defensive medicine (P-value 0.032). Significantly high proportion of female (p-value 0.05) than male doctors was disagreed that defensive medicine practice would impair physician-patient relationship. **Conclusion:** Physicians were in favor of practicing defensive medicine as well as they also did not want to compromise the patients care. Doctors from surgery compare to medicine department showed higher agreement towards defensive medicine. Neither practicing defensive medicine would impairment between physician-patient nor restrict physician mentality or creativity stated by female participants. **Acknowledgment:** Data were collected by Dr Marzooq Alshammery, Zainab Alhassar and Adel alrwili*

1. Introduction

There was a time when society relied on doctors' diagnosis and prescriptions solely and medical practitioners had liberty and very less fear of medical dispute or lawsuits (1). However, in the modern era, society became more aware about their rights, availability of choices and that made them proactive. Therefore it is become less likely that just because of face value they accept whatever recommended by the doctors. That starts creating problems for the doctors who do not use to get challenged by their patients about their diagnosis or prescription (2). As people get more aware about the potential harm or threat associated with medical care and interventions, they often refuse to accept the prescribed medical actions (3). Hence, that makes the doctors to practice safely and defensively and avoid getting in any litigation (4).

Defensive medicine is defined as 'medical actions performed mainly to prevent being sued rather than to aid the patients' this definition came from US congress's office (5). In general, it is defined as when a doctor starts deviation from normal practice by asking for unnecessary tests, visits, avoiding high risk patients to prevent from complaints and criticism from patients or their families (6). Some of the defensive medicine practices are termed as assurance behavior (or positive defensive medicine) which involves additional tests, procedures and visits that reduce the chance of adverse event or outcome as well as protect doctors for any legal proceedings. On the other hand, negative defensive medicine or avoidance behavior is when doctors try to distance from those patients who can cause legal problems for them (7, 8).

A survey conducted in china in which 69% of neurosurgeons were strongly agreed or agreed with the statement that 'I view every patient as a potential lawsuit' (9). Whereas in USA 96% of neurosurgeons reported practicing defensive medicine (10). In Europe, 94% and 83% of

gastroenterologist and surgeons were practicing defensive medicine respectively (11, 12). As a result, additional tests, consultations and visits ordered to avoid legal prosecution and that increase healthcare expenditures (13). According to Jackson healthcare, healthcare expenditures increased by 34% because of the cost of defensive medicine (14).

Several studies conducted in various countries to access doctors' perception about defensive medicine. However, to the authors' best knowledge no study conducted in Saudi Arabia so far. That provided the rational for this study and authors designed the present study to evaluate the prevalence of defensive medicine among physicians working in Imam Abdulrahman Bin Faisal Hospital in Dammam, Saudi Arabia.

2. Method

This cross sectional study was conducted at Imam Abdulrahman bin Faisal hospital (IABFH) situated at national guards and King Fahad Military facilities. Study conducted during December 2018 to January 2019 by inviting all those doctors who were working at IABFH under medicine and surgery departments. Doctors who were working as rotator from outside could not be participants of the study as it was only exclusion criteria. Approval from Research Committee at the Saudi Council for Health Specialties at eastern province of Saudi Arabia was obtained.

A 2 pages questionnaire was developed from a previously conducted study in China. Questionnaire contained 23 questions which were distributed into 5 sections. Section 1 had demographic questions, section 2 asked about frequency of medical dispute during last year, section 3 was about practice during past 12 months and section 4 and 5 was evaluating harm of defensive medicine and physicians' role in defensive medicine respectively. 5-point Likert scale (Strongly agreed, agreed, Neutral, Disagreed, Strongly disagreed) was used to answer the questions which were

under section 4 and 5. Last two sections of the questionnaire were evaluating doctors' perception about defensive medicine.

Instead of sending the questionnaire electronically to the doctors, authors of the study personally visited to every doctor to get their response. At first, they were explained purpose of the study and get their consent. Filled questionnaires were collected at the end of the same day.

Data was analyzed using the Statistical Package for the Social Sciences (SPSS V. 23). Descriptive statistics was done for all variables. Likelihood ratio test was used to determine the relation between demographic variables (gender, speciality, professional title and experience) and questions under section 2 to 5. Statistical significance will be set at the 0.05 alpha level.

3. Results

Total of 52 medical practitioners participated in the study. Proportion of male doctors (n=37, 71.2%) were higher in the study compare to females (n=15, 28.8%). 26(51%) out of 52 belonged to medicine and rest were from surgery department (n=25, 49%). It was found that 32% (n=16) consultant, 15 (30%) residents, 11 (22%) specialist, and 8 (16%) associate specialist who participated in the study. Evaluation of question related to working experience revealed that 9 (18%) were having less than 5 years of experience, 10 (20%)

having 5 to 9 years, 8 (16%) having 10 to 14 years, 10 (20%) having 15 to 19 years and 13 (26%) having more than 20 years of working experience. Furthermore, 43 out of 52 stated that they were never encountered with any medical dispute, 6 (12%) were having once and 1 (2%) were having more than 4 medical disputes during their practicing career.

Table 1: Frequency of medical dispute and/or lawsuits during past 10 years

	Medical Dispute	Medical Lawsuits	Losing lawsuits	Colleagues Experience
None	43(86.0%)	49(98.0%)	48(100%)	37(75.5%)
Once	6(12.0%)	1(2.0%)	0(0%)	6(12.2%)
Twice	0(0%)	0(0%)	0(0%)	1(2.0%)
Three times	1(2.0%)	0(0%)	0(0%)	3(6.2%)
≥ Four times	0(0%)	0(0%)	0(0%)	2(4.1%)

Analysis of the responses against the questions related to any medical disputes and/or lawsuits revealed that most of them never faced such circumstances (Table 1). However, when they asked about any of their colleague who ever had such experience, 12 out of 52 doctors replied affirmatively. Medicine doctors had significantly large number of colleagues compare to surgery doctors who had any dispute or lawsuit (P-value 0.008). When participants were asked about their general agreement towards defensive medicine, more surgery doctors showed disagreement compare to medicine doctors and that was statistically significant with p-value 0.032.

Table 2: Physicians' practice during past 12 months

	Usually	Many times	Some times	Seldom	Never
Refuse to provide treatment for critically ill patients	0(0%)	3(5.9%)	4(7.8%)	1(2.0%)	43(84.3%)
Prescription for unnecessary test/examination/consultation	2(3.9%)	1(2.0%)	11(21.6%)	11(21.6%)	26(51.0%)
Arrangement for unnecessary hospital administration/surgeries	0(0%)	0(0%)	10(19.6%)	8(15.7%)	33(64.7%)
Cesarean section without indication	0(0%)	0(0%)	1(2.6%)	1(2.6%)	37(94.9%)

Most of the doctors, when asked questions listed in table 2, said they never did that during past year. Furthermore, their responses were also correlated with the demographic

variables of the participants but no statistical significance was observed.

Table 3: Harm of defensive medicine and Physicians' role

	Strongly Agreed	Agree	Neutral	Disagreed	Strongly Disagreed
Harm of Defensive Medicine (DM)					
DM would impair physician-patient relationship	8(16.3%)	20(40.8%)	11(22.4%)	9(18.4%)	1(2.0%)
DM would impair patients' physical and physiological health	9(17.6%)	20(39.2%)	9(17.6%)	13(25.5%)	0(0%)
DM would restrict physicians' mentality, creativity and medical progression	10(19.6%)	17(33.3%)	14(27.5%)	9(17.6%)	1(2.0%)
DM would protect physician/patients from harm despite its defects	3(6.1%)	22(44.9%)	12(24.5%)	9(18.4%)	3(6.1%)
Physicians' role in defensive medicine					
Physician Shouldn't seek protection by DM for rights, interests and security	6(12.0%)	15(30.0%)	11(22.0%)	14(28.0%)	4(8.0%)
Physician Shouldn't treat patient as potential threat of a medical lawsuit	9(18.4%)	20(40.8%)	10(20.4%)	8(16.3%)	2(4.1%)
Physician Should stick to guideline and basic principles in daily practice	28(57.1%)	19(38.8%)	1(2.0%)	0(0%)	1(2.0%)
Physician Should be solely devoted to patients' best interest even if that is expensive	13(26.0%)	22(44.0%)	5(10.0%)	6(12.0%)	4(8.0%)

Over 50 percent of the doctors were agreed with the statements provided under section "harm of defensive medicine" and "physicians' role in defensive medicine". Only one question which was "Physician shouldn't seek protection by DM for rights, interests and security", proportion of agreed and disagreed doctors with the statement was not varied a lot (Table 3).

Significantly high proportion (P-value 0.05) of female compare to male doctors was disagreed that defensive medicine would impair physician-patient relationship. Furthermore, females showed higher agreement level in contrast with males when asked "defensive medicine impairs patients' physical and physiological health" (p-value 0.046). "Defensive medicine would restrict physicians' mentality, creativity and medical progression" when this question

compared with gender, it was found that more females were disagreed compare to male doctors (P-value 0.04) (Figure 1).

More than 70 percent of medicine specialty doctors agreed that defensive medicine protects physician/patient from harm despite its defects while only 33.3 percent of surgery doctors were agreed about it and the difference was statistically significant too with p-value 0.018. Similarly, significantly high proportion of residents and specialist, despite consultants, were agreed that defensive medicine protect physician/patients from harm (P-value <0.001). Significantly high proportion of the doctors (p-value 0.044), regardless of their title and experience, were agreed that physician should protect patients' interest. In addition, years of experience had negative and significant relation with question "defensive medicine would protect physician/patients from harm (P-value 0.015).

4. Discussion

Number of participants in the current study was not high and there were only 52 doctors who participated in the study. Reason of small sample size was, this study was conducted in one hospital and doctors from two departments (medicine and surgery) were invited to participate. As far as response rate was concern it was quite high and found 83%. High response rate could be due to two reasons; data was collected by personally visited to doctors instead of sending the questionnaire electronically. Secondly, the topic of the study caught attention of participants and they were interested to share their view point.

General perception of the sampled doctors about the defensive medicine was that it is better to do a safe practice rather than having any medical dispute or lawsuit. 51 percent of them were strongly agreed or agreed to practice defensive medicine while 23.5% remained neutral and only 25.5% showed negative attitude towards practicing of defensive medicine. Possible explanation for this could be the doctors believed to work in blame free environment and they wanted to avoid getting in any lawsuit in case of malpractice. Many studies around the globe added in the literature that doctors like to practicing defensive medicine (15-19). Defensive medicine was highly prevalent among the various medical specialties, according to survey conducted in Pennsylvania (20). Previous medical disputes could also play a major role to get associated with defensive medicine (21). A nationwide survey conducted in China reported two-third of the physicians were strongly agreed or agreed to practice defensive medicine (22). Ortashi O et al in 2013 conducted a study in United Kingdom and found 78% of the doctors were practicing defensive medicine (18).

In the present study agreement level among female was higher than male doctors about defensive medicine. Furthermore, significantly high proportion of female compare to male doctors was disagreed with the statements that "Defensive medicine would impair physician-patient relation" and "Defensive medicine would restrict physicians' mentality, creativity and medical progression". However, authors could not find any significance between years of experience and practicing defensive medicine. Contrary to our findings, Marin et al conducted a survey among hospital

doctors in wales and found age and seniority were associated with defensive practice (23). In addition, Ortashi et al did not find any significant relation between gender and practice of defensive medicine (18).

Due to the small sample size of the present study most of the doctors did not have medical dispute or lawsuits during past year. However, analysis revealed that doctors from medicine department had more colleagues who had such situation compare to surgery doctors. Some previously published studies found that of litigation was associated with specialty (24)while some did not get any association (18).

Small sample size was the major limitation of the study. This study was only conducted in one hospital inclusion of different hospitals from the city could help to generalize the results. Due to small sample logistic regression analysis could not run and hence odd ratios could not be calculated. Inclusion of limited demographic variables was another limitation.

In general, doctors were in favor of practicing defensive medicine. However, they were agreed to provide best care to the patients by sticking to the guidelines and basic principle. Use of defensive medicine is good for patients and doctors as long as it is using to protect the rights and to create a healthy and safe working environment. This study was first of its kind in Saudi Arabia and purpose was not only to provide knowledge about defensive medicine practice in Saudi Arabia but also to promote this topic among the research community in Saudi Arabia to conduct more researches in different cities with comparatively large sample size.

References

- [1] Thorpe KE: The medical malpractice 'crisis': recent trends and the impact of state tort reforms. *Health Aff (Millwood)*. 2004; Suppl Web Exclusives: W4-20-30.
- [2] Nguyen Thi PL, Briangon S, Empereur F, Guillemin F: Factors determining inpatient satisfaction with care. *SocSci Med* 2002, 54(4):493-504.
- [3] Sethi MK, Obremskey WT, Natividad H, Mir HR, Jahangir AA: Incidence and costs of defensive medicine among orthopedic surgeons in the United States: a national survey study. *Am J Orthop (Belle Mead NJ)* 2012, 41(2):69-73.
- [4] Brilla R, Evers S, Deutschlander A, et al: Are neurology residents in the United States being taught defensive medicine. *ClinNeurolNeurosurg* 2006, 108(4):374-377.
- [5] US Congress Office of Technology Assessment. *Defensive medicine and medical malpractice*, OTA-H-602. Washington, DC: US Government Printing Office, 1994.
- [6] NCBI. Defensive medicine. <http://www.ncbi.nlm.nih.gov/mesh/?term=defensive+medicine>
- [7] Rosenblatt RA, Detering B. Changing patterns of obstetric practice in Washington State: the impact of tort reform. *Fam Med*. 1988;20:101-107.
- [8] Grumbach K, Vranizan K, Rennie D, Luft HS. Charges for Obstetric Liability Insurance and Discontinuation of Obstetric Practice in New York: Report to the Office of

- Technology Assessment. Washington, DC: Office of Technology Assessment; 1993.
- [9] Nahed BV, Babu MA, Smith TR, et al. Malpractice liability and defensive medicine: a national survey of neurosurgeons. *PLoS One* 2012;7:e39237.
- [10] Sethi MK, Obremskey WT, Natividad H, Mir HR, Jahangir AA: Incidence and costs of defensive medicine among orthopedic surgeons in the United States: a national survey study. *Am J Orthop (Belle Mead NJ)* 2012, 41(2):69–73.
- [11] Elli L, Tenca A, Soncini M, Spinzi G, Buscarini E, Conte D: Defensive medicine practices among gastroenterologists in Lombardy: between lawsuits and the economic crisis. *Dig Liver Dis* 2013, 45(6):469–473. doi:10.1016/j.dld.2013.01.004.
- [12] Catino M, Celotti S: The problem of defensive medicine: two Italian surveys. *Stud Health Technol Inform* 2009, 148:206–221.
- [13] Institute of Medicine. The healthcare imperative: lowering costs and improving outcomes: workshop series summary. Washington, DC: The National Academies Press, 2010.
- [14] Jackson Healthcare. Physician study: quantifying the cost of defensive medicine. <http://www.jacksonhealthcare.com/media-room/surveys/defensive-medicine-study-2010.aspx>
- [15] Ali AA, Hummeida ME, Elhassan YA, et al. Concept of defensive medicine and litigation among Sudanese doctors working in obstetrics and gynecology. *BMC Med Ethics* 2016;17:12.
- [16] AlDakhil LO. Obstetric and gynecologic malpractice claims in Saudi Arabia: Incidence and cause. *J Forensic Leg Med* 2016;40:8–11.
- [17] Bourne T, Wynants L, Peters M, et al. The impact of complaints procedures on the welfare, health and clinical practise of 7926 doctors in the UK: a cross-sectional survey. *BMJ Open* 2015;5:e006687.
- [18] Ortashi O, Virdee J, Hassan R, et al. The practice of defensive medicine among hospital doctors in the United Kingdom. *BMC Med Ethics* 2013;14:42.
- [19] Asher E, Greenberg-Dotan S, Halevy J, et al. Defensive medicine in Israel - a nationwide survey. *PLoS One* 2012;7:e42613.
- [20] Studdert DM, Mello MM, Sage WM, et al. Defensive medicine among high-risk specialist physicians in a volatile malpractice environment. *JAMA* 2005;293:2609–17.
- [21] He AJ, Aj H. The doctor-patient relationship, defensive medicine and overprescription in Chinese public hospitals: evidence from a crosssectional survey in Shenzhen city. *SocSci Med* 2014;123:64–71.
- [22] Zhu L, Li L, Lang J. The attitudes towards defensive medicine among physicians of obstetrics and gynaecology in China: a questionnaire survey in a national congress. *BMJ Open* 2018;8:e019752. doi:10.1136/bmjopen-2017-019752
- [23] Marin PP, Bayer AJ, Tomlinson A, Pathy MS: Attitudes of hospital doctors in Wales to use of intravenous fluids and antibiotics in the terminally ill. *Postgrad Med J* 1989, 65(767):650.
- [24] Hiyama T, Yoshihara M, Tanaka S, Urabe Y, Ikegami Y, Fukuhara T, Chayama K: Defensive medicine practices among gastroenterologists in Japan. *World J Gastroenterol* 2006, 12(47):7671–7675.