

# The Influence of Some Factors upon the Attitude of Physicians and their Practice of Defensive Medicine A Cross Sectional Study

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## Abstract

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**Background:** Defensive Medicine (DM) could be defined as a deviation from good, accepted medical practice, induced primarily by a threat or fear of professional legal liability.

**Aim of the Work** is to assess the association and the impact of some factors upon attitude, practice and ethical considerations of DM among a sample of Egyptian physicians.

**subjects and Methods:** A cross sectional study was done by using a 40- point detailed self-administered questionnaire to fulfill the aim of the study on 130 physicians with different four specialties working in different hospitals in Cairo.

**Results:** Out of 130 respondent physicians; 60.8% of them were knowledgeable about DM, and 68.4% of the participants agreed that DM is good for patients. Seventy physicians always recorded the treatment details and each patient's specific statement in their files. Sixty-six physicians (50.8%) sometimes gave extra details about medicine intake. Sixty-two physicians (47.7%) and 36 physicians (27.7%) respectively sometimes asked for unnecessary specialist's consultation or arranged for unnecessary hospitalization. 96.2% of them knew the meaning of malpractice. Ninety physicians (69.2%) had not faced any of these lawsuits or legal settlement in their career while 87 physicians (66.9%) had some colleagues who faced lawsuits or legal settlement. A great percentage of the participants agreed that defensive medicine would impair physician-patient relationships and induce new conflicts (53.1%) and that defensive medicine would restrict physicians' creativity and medical progress (46.9%).

**Conclusion:** The majority of physicians knew the concept of DM, and most of them agreed that DM is good for patients; female physicians practiced positive DM more than male physicians did.

## Key words

Attitude Physicians, Practice, Defensive Medicine

## Introduction

Defensive Medicine concept refers to all medical care provided by physicians without increasing benefits to the patient, the primary purpose of which is to prevent the risks of litigation (Calikoglu and Aras, 2020).

It is also called defensive medical decision-making, refers to the practice of recommending a diagnostic test or medical treatment that is not necessarily the best option for the patient, but mainly serves to protect the physician against the patient as potential plaintiff (Hasan et al., 2021).

The very first mention of DM in a public speech was probably that of the General Counsel of the American Medical Association in 1974, who recommended it after provocatively suggesting that his colleagues should do no medical action at all as the only way to avoid malpractice lawsuits (Garattini and Padula, 2020).

It is a broader term than extra request of investigations and medical care that adopted by physicians. It includes assurance or avoidance behaviors or both (Arafa et al., 2023).

Assurance behavior is a type of DM where the medical practitioner orders additional tests and

therapies that may not normally be required (Sayed et al., 2021).

In avoidance type defensive medicine could be in the form of replacing care (e.g., referral to another physician or health facility) or reducing care (e.g., refusal to treat patients) to avoid exposure to legal risks (Panella et al., 2017).

Manhandling of doctors and hospital vandalism by patients and their family members have significantly increased recently (Banerjee and Amitav, 2018).

Furthermore, there has been a steady rise in the number of medical practice lawsuits filed against hospitals, healthcare teams, and facilities (Azab, 2013).

Physicians' high levels of insecurity and litigation risk, along with their concern of reputational repercussions that could jeopardize their careers and respect, caused them to adopt a defensive medical mindset (Hasan et al., 2021).

Defensive Medicine is used by many doctors and healthcare professionals as a precaution against lawsuits and medical practice suits, as well as to prevent a patient from becoming a plaintiff (Ortashi et al., 2013).

## Aim of the Work

This study aimed to assess the association and the impact of some factors upon attitude, practice and ethical considerations of defensive medicine among a sample of Egyptian physicians.

## Subjects and Methods

Study design:

This is a cross-sectional study that was conducted on physicians of different specialties working in some different hospitals in Cairo.

Sample size:

A sample size of at least 102 participants produces a two-sided 95% confidence interval with a width equal to 0.200 when the sample proportion is 0.560.

Inclusion criteria:-

This study included physicians from different specialties (surgical and non-surgical) working in different health care facilities (governmental and private).

Exclusion criteria:

Physicians with period of work experience less than one year.

Study tool:

An on-line questionnaire developed by different experts of forensic medicine and ethics (proposed structured questionnaire) was administered through an open access Google survey. This questionnaire was distributed for 20 physicians to assess the efficiency of questions. The questionnaire was initially drafted and subsequently modified following advice obtained during piloting, the questionnaire was prepared by the researchers using English and Arabic language to ensure that all questions are understandable.

Study procedure:

Participation is voluntary and carries no risk for participants, responses was anonymous, and researchers made all reasonable attempts to protect their information and confidentiality, their agreement to fill in this questionnaire was considered an implied consent to participate in this research work. The questionnaire was revised by three experts of forensic medicine and toxicology Department, faculty of medicine, Ain Shams University for validity of the contents.

Questionnaire items:

The items of questionnaire were settled after reviewing previous similar studies in Egypt and other countries (Arafa et al., 2023; Hasan et al., 2018 and Zhu et al., 2018).

It included five sections:

The first section was concerned with characteristics of responders and demographic information of responders as age, gender, specialty, professional title, qualification, duration of experience and work place.

The second section comprised 6 items measuring participants' attitude towards defensive medicine. Participants were asked to respond on a point by using a 4-point scale whether they 'strongly agree', 'agree', 'neutral', 'disagree', or 'strongly disagree'.

Scoring system: Each item was given a score of 4 for 'strongly agree' to zero for 'strongly disagree' in question number 2, 3, 6. And vice versa for the other

questions. Thus, high scores reflected positive attitudes and low scores reflected negative attitudes (potential range: 6-22).

The third section consists of 12 items to assess participants' practice of defensive medicine. Participants were asked to respond on a point by using a 3-point scale whether they 'always', 'sometimes', 'never' or rarely.

Scoring system: Most of the items were reflective of more favorable practices towards positive DM, with scores of 3 for 'always' to zero for rarely in questions number 1,2,3 and vice versa for the others questions (potential range:11-31)

The fourth section consists of 11 items measuring medical litigation's experience. First question has score of one to zero whether they said yes or no. Each item using a 3-point scale whether they 'strongly agree', 'agree', 'disagree', or 'strongly disagree' for the next four questions. then the next six questions had score of zero to one whether it was yes or no.

Scoring system:

The first question was given one to yes and zero for no, then the next four questions were given 3 for strongly agree and zero for strongly disagree, then the next five questions were given zero for yes and one to no, and the last question was given one for yes and zero for no (potential range; 8-17).

The fifth section consists of 4 items measuring ethical considerations. Participants were asked to respond on a point by using a 4-point scale whether they 'strongly agree', 'agree', 'neutral', 'disagree', or 'strongly disagree'.

Scoring system: Each item was given 4 for strongly agree and zero for strongly disagree for the first three questions, but the last question was given zero for strongly agree and 4 for strongly disagree (potential range: 0-16).

Statistical analysis:

The collected data was coded and tabulated in an Excel sheet and software IBM SPSS statistics was used for statistical analysis. Descriptive statics were done using frequency and percentage for categorical variables; median range for quantitative variables. Chi square test was used to compare frequencies between groups. For testing significant differences of the measured attitude and practice scores between participants. The influence of some factors upon the Attitude of physicians and their practice of defensive medicine A cross sectional study.

## Results

### Results of personal characteristics of the 130 participants: Table (1)

Most of them were knowledgeable about DM (79 physicians, 60.8%), the rest did not know DM (50 physicians, 39.2%).

As regard the age distribution of the respondent physicians, the highest number of them was between 30 and 40 years old (50 physicians, 38.5%), followed by ages below 30 (40 physicians, 30.8%) and then ages more than 40 till 50 (30 physicians, 23.1%). The ages above 50 were the least number (10 physicians, 7.7%).

As regard the gender of the participants, the majority of them were females (107 physicians, 82.3%) while 23 physicians (17.7%) were males.

As regard the specialties of the participants, internal medicine represented by (41 physicians, 31.5%) followed by general surgery (37 physicians, 28.5%) then obstetrics and gynecology (33 physicians, 25.4%) and last Intensive care unit (ICU) (19 physicians, 14.6%).

As regard the professional title of the participants, specialists represented the highest number (43 physicians, 33.1%), followed by residents (37 physicians, 28.5%), then assistant lecturers (19 physicians, 14.6%), then lecturers (15 physicians, 11.5%), then consultants (13 physicians, 10%), while the rest were equally distributed (assistant professors, general practitioner and professor) 1 physician (0.8%).

As regard the qualification of the participants, high percentage of the participants had no post-graduate studies (52 physicians, 40%). Forty-seven physicians (36.2%) achieved master degree followed by diploma (18 physicians, 13.8%). The least percentage had medical doctorate (MD) (13 physicians, 10%).

As regard duration of work experience, participants with experience less than 5 years were 78 physicians (60%), followed by who had 5-10 years of experience (34 physicians, 26.2%). Physicians with period of experience more than 10 till 15 years were 15 (11.5%) while physicians with period of experience were more than 15 were 3 (2.3%).

As regard the work place of the participants, the majority were working at governmental hospitals (72 physicians, 55.4%), followed by private health care facilities (58 physicians, 44.6%).

#### **Results of the physicians' attitude towards DM: Table (2)**

Most of the participants agreed that DM is good for patients (89 physicians, 68.4%), while 13 physicians (10%) disagreed. A high percentage of them thought that DM should be decreased if evidence based medicine and related guidelines are implanted (67 physicians, 51.5%), while 32 physicians (24.6%) disagreed.

Regarding that DM is expensive and dangerous for patients and that it is expensive than medical litigations, 70 physicians (53.9%) and 79 physicians (60.8%) respectively disagreed, while 32 physicians (24.6%) and 21 physicians (16.1%) respectively agreed.

Also 59 physicians (45.4%) and 79 physicians (60.8%) respectively disagreed that physicians should not treat the patients of potential threat of medical lawsuits or physicians should be solely devoted to the patient best interest only. Only 32 physicians (30%) and 26 physicians (20%) respectively agreed towards this.

On application of both Independent T test and One Way ANOVA test, there was no significant difference between age groups, gender, specialty, duration of experience and work place.

#### **Results of physicians' practice of DM: Table (3)**

Seventy physicians (53.8%) always recorded the treatment details and each patient's specific statement in their files while 52 physicians (40%) sometimes did this. Most of them always took extra details about patient complaint and condition (82 physicians, 63.1), while 48 physicians (36.9%) sometimes did this. Sixty-six physicians (50.8%) sometimes gave extra details about medicine intake while 61 physicians (46.9%) always did this.

Most of them never prescribed unnecessary medications for patients (68 physicians, 52.3%) while 40 physicians (30.8%) sometimes did that to avoid any possible legal consequences.

Fifty-seven physicians (43.8%) and 58 physicians (44.6%) respectively never ordered unnecessary laboratory tests or imaging, while 52 physicians (40%) and 55 physicians (42.3%) respectively sometimes did this. Most of them (104 physicians, 80%) never ordered unnecessary biopsy, while only 14 physicians (10.8%) sometimes did this.

Sixty-seven physicians (51.5%) sometimes avoided performing high risky intervention; while 34 physicians (26.2%) always did this and 21 physicians (16.2%) never did this. Sixty-one physicians (46.9%) sometimes refuse to manage high-risk patients, while 52 physicians (40%) never did this.

Sixty-two physicians (47.7%) and 36 physicians (27.7%) respectively sometimes asked for unnecessary specialist's consultation or arranged for unnecessary hospitalization, while 43 physicians (33.1%) and 67 physicians (58.5%) respectively never did this.

Fifty-three physicians (40.8%) never arranged for unnecessary referrals to other specialists also 53 physicians (40.8%) sometimes did this

On application of Independent T test, there was significant difference between females and males as regard their practice of DM (Table 4).

On application of both Independent T test and On Way ANOVA test, there was no significant difference between age groups, specialty and duration of experience as regard their practice of DM.

#### **Results of physicians' medical litigations experience: Table (5)**

Almost all of them knew the meaning of malpractice (125 physicians, 96.2%). High percentage of the participants (112 physicians, 86.2%) agreed that there was unjustified increase of liability suits, while 18 physicians (13.8%) disagreed.

Also most of them agreed (118 physicians, 90.7%) that lawsuits represent a major burden upon medical practice and only 12 physicians (9.3%) disagreed. One hundred and twenty three physicians (94.6%) agreed that there should be insurance against professional errors while seven physicians (5.4%) disagreed.

About 87% of the physicians (113) agreed that malpractice environment affects their decision and practice of defensive medicine. Ninety physicians (69.2%) had not faced any of these lawsuits or legal settlement in their career while 87 physicians (66.9%)

had some colleagues who faced lawsuits or legal settlement in their career.

Eighty-five physicians (65.4%) were not willing to manage patients who previously involved in medical litigation and 108 physicians (83.1%) thought that dealing with a patient who previously involved in medical litigation would affect their decision and practice of defensive medicine.

Eighty-six physicians (66.2%) had thought of career shift with the increase of malpractice suits. High percentage of the physicians (116, 89.2%) would share an insurance policy for doctors if available.

On application of both Independent T test and One Way ANOVA test, there was no significant difference between age groups, gender, specialty, duration of experience and work place.

### **Results of physicians' ethical considerations: Table (6)**

Great percentage of the participants agreed that defensive medicine would impair physicians - patients relationship and induced new conflicts (69 physicians, 53.1%) and that defensive medicine would restrict physicians creativity and medical progress(61 physicians, 46.9%).

In addition, the majority of them agreed that defensive medicine would protect physicians and patients from harm (96 physicians, 73.8%). Forty-eight physicians (36.9%) agreed that defensive medicine would impair patient's physical and psychological health but 49 physicians (37.7%) disagreed.

On application of both Independent T test and One Way ANOVA test, there was no significant difference between age groups, gender, specialty, duration of experience and work place.

**Table (1): Personal characteristics of 130 participants.**

	<b>Total number (130)</b>	<b>N/%</b>
Do you know about Defensive medicine?	No	51 (39.2%)
	Yes	79 (60.8%)
1/ Age in years:	<30	40 (30.8%)
	30-40	50 (38.5%)
	> 40-50	30 (23.1%)
	>50	10 (7.7%)
2/Gender	Female	107 (82.3%)
	Male	23 (17.7%)
3/Specialty	ICU	19 (14.6%)
	Internal medicine	41 (31.5%)
	General surgery	37 (28.5%)
	Obstetrics and Gynecology	33 (25.4%)
4/ Professional title	Consultant	13 (10%)
	Specialist	43 (33.1%)
	Resident	37 (28.5%)
	Assistant lecturer	19 (14.6%)
	Lecturer	15 (11.5%)
	Assistant professor	1 (0.8%)
	General practitioner	1 (0.8%)
	Professor	1 (0.8%)
5/ Qualifications	MD	13 (10%)
	Diploma	18 (13.8%)
	Master	47 (36.2%)
	Bachelor of medicine	52 (40%)
6/ Duration of experience	< 5	78 (60%)
	5 - 10	34 (26.2%)
	>10 – 15	15 (11.5%)
	> 15	3 (2.3%)
7/ work place	Private	58 (44.6%)
	Governmental	72 (55.4%)

**N: number**

**Table (2): Participants' responses to items assessing their attitude towards defensive medicine of 130 participants.**

Total number (130)		N/%
1/Do you think that defensive medicine is good for patients?	Strongly agree	31 (23.8%)
	Agree	58 (44.6%)
	Neutral	28 (21.5%)
	Disagree	11 (8.5%)
	Strongly disagree	2 (1.5%)
2/Defensive medicine should be decreased if evidence – based medicine and related guidelines are implemented?	Strongly agree	19 (14.6%)
	Agree	48 (36.9%)
	Neutral	31 (23.8%)
	Disagree	31 (23.8%)
	Strongly disagree	1 (0.8%)
3/Defensive medicine is expensive and dangerous for patients?	Strongly agree	4 (3.1%)
	Agree	28 (21.5%)
	Neutral	28 (21.5%)
	Disagree	63 (48.5%)
	Strongly disagree	7 (5.4%)
4/Defensive medicine is more expensive than medical litigation?	Strongly agree	2 (1.5%)
	Agree	19 (14.6%)
	Neutral	30 (23.1%)
	Disagree	68 (52.3%)
	Strongly disagree	11 (8.5%)
5/Physicians should not treat the patients of potential threat of medical lawsuits?	Strongly agree	8 (6.2%)
	Agree	31 (23.8%)
	Neutral	32 (24.6%)
	Disagree	50 (38.5%)
	Strongly disagree	9 (6.9%)
6/Physicians should be solely devoted to the patient best interest only?	Strongly agree	8 (6.2%)
	Agree	18 (13.8%)
	Neutral	25 (19.2%)
	Disagree	68 (52.3%)
	Strongly disagree	11 (8.5%)

**N:number**

**Table (3): Participant's responses to items assessing their practice of defensive medicine of 130 participants.**

Total number (130)		N/%
1/Do you record the treatment details and each patient's specific statement in their files?	Never	3 (2.3%)
	Always	70 (53.8%)
	Rarely	5 (3.8%)
	Sometimes	52 (40%)
2/Do you take extra details about patient complaint and condition?	Never	0 (0%)
	Always	82 (63.1%)
	Rarely	0 (0%)
	Sometimes	48 (36.9%)
3/Do you give extra details about medicine intake?	Never	1 (0.8%)
	Always	61 (46.9%)
	Rarely	2 (1.5%)
	Sometimes	66 (50.8%)
4/In order to avoid any possible legal consequences, have you A/ prescribed unnecessary medications for patients?	Never	68 (52.3%)
	Always	1 (0.8%)
	Rarely	21 (16.2%)
	Sometimes	40 (30.8%)
B\ ordered unnecessary laboratory tests?	Never	57 (43.8%)
	Always	5 (3.8%)
	Rarely	16 (12.3%)
	Sometimes	52 (40%)
c/ ordered unnecessary imaging?	Never	58 (44.6%)
	Always	4 (3.1%)
	Rarely	13 (10%)
	Sometimes	55 (42.3%)
D/ordered unnecessary biopsy?	Never	104 (80%)
	Always	1 (0.8%)
	Rarely	11 (8.5%)
	Sometimes	14 (10.8%)
E/ avoided performing high risky intervention?	Never	21 (16.2%)
	Always	34 (26.2%)
	Rarely	8 (6.2%)
	Sometimes	67 (51.5%)
F/ refused to manage high-risk patients?	Never	52 (40%)
	Always	4 (3.1%)
	Rarely	13 (10%)
	Sometimes	61 (46.9%)
G/ asked for unnecessary specialist's consultation?	Never	43 (33.1%)
	Always	10 (7.7%)
	Rarely	15 (11.5%)
	Sometimes	62 (47.7%)
H/arranged for unnecessary hospitalization?	Never	76 (58.5%)
	Always	2 (1.5%)
	Rarely	16 (12.3%)
	Sometimes	36 (27.7%)
I/ arranged for unnecessary referrals to other specialists	Never	53 (40.8%)
	Always	7 (5.4%)
	Rarely	17 (13.1%)
	Sometimes	53 (40.8%)

**N: number**

**Table (4): Descriptive statistics using Independent (t) test for 130 participants' practice scores as regard their gender.**

Total number (130)		Female	Male	(t) test	P-value
		N= 107	N = 23		
Practice of defensive medicine (Total = 36)	Mean $\pm$ SD	22.42 $\pm$ 4.11	20.43 $\pm$ 3.79	2.129	0.035*
	Range	11-31	12-27		

**P<0.05: \*Significant / N: number /SD: standard deviation.**

**Table (5): Participant's responses to items assessing medical litigation's experience of 130 participants.**

Total number (130)	N/%	
1/ Do you know the meaning of malpractice?	No	5 (3.8%)
	Yes	125 (96.2%)
2/Do you think that there is unjustified increase of liability suits?	Strongly agree	24 (18.5%)
	Agree	88 (67.7%)
	Disagree	18 (13.8%)
	Strongly disagree	0 (0%)
3/Do these lawsuits represent a major burden upon medical practice?	Strongly agree	38 (29.2%)
	Agree	80 (61.5%)
	Disagree	11 (8.5%)
4/Do you think that there should be insurance against professional errors?	Strongly disagree	1 (0.8%)
	Strongly agree	45 (34.6%)
	Agree	78 (60%)
5/Is this malpractice environment affects your decision and practice of defensive medicine?	Disagree	7 (5.4%)
	Strongly disagree	0 (0%)
	Strongly agree	24 (18.5%)
6/Have you faced any of these lawsuits or legal settlement in your career?	Agree	89 (68.5%)
	Disagree	17 (13%)
	Strongly disagree	0 (0%)
7/Have any of your close colleagues faced any of these lawsuits or legal settlement in their career?	No	90 (69.2%)
	Yes	40 (30.8%)
8/Are you willing to manage patients who previously involved in medical litigation?	No	43 (33.1%)
	Yes	87 (66.9%)
9/Do you think that dealing with a patient who previously involved in medical ligation will affect your decision and practice of defensive medicine?	No	85 (65.4%)
	Yes	45 (34.6%)
10/Have you ever thought of career shift with the increase of malpractice suits?	No	22 (16.9%)
	Yes	108 (83.1%)
11/Will you share an insurance policy for doctors if available?	No	44 (33.8%)
	Yes	86 (66.2%)
11/Will you share an insurance policy for doctors if available?	No	14 (10.8%)
	Yes	116 (89.2%)

**N:number**

**Table (6): Participants' responses to items assessing ethical consideration for 130 participants.**

	<b>Total number (130)</b>	<b>N/%</b>
1/Defensive medicine will impair Physicians - patients relationship and induce new conflicts	Strongly agree	16 (12.3%)
	Agree	53 (40.8%)
	Neutral	34 (26.2%)
	Disagree	24 (18.5%)
	Strongly disagree	3 (2.3%)
2/Defensive medicine will impair patients physical and psychological health	Strongly agree	3 (2.3%)
	Agree	45 (34.6%)
	Neutral	33 (25.4%)
	Disagree	45 (34.6%)
	Strongly disagree	4 (3.1%)
3/Defensive medicine will restrict physicians creativity and medical progress	Strongly agree	17 (13.1%)
	Agree	44 (33.8%)
	Neutral	28 (21.5%)
	Disagree	37 (28.5%)
	Strongly disagree	4 (3.1%)
4/Defensive medicine will protect physicians and patients from harm	Strongly agree	35 (26.9%)
	Agree	61 (46.9%)
	Neutral	24 (18.5%)
	Disagree	8 (6.2%)
	Strongly disagree	2 (1.5%)

**N: number**

## Discussion

Since Defensive Medicine DM is a large and diverse phenomenon, it is imperative to fully comprehend all of its facets, including underlying and contextual elements as well as intricately linked structures (Eftekhari et al., 2023).

Patients frequently complain about healthcare practitioners because of medical errors, disappointing results, or treatment problems. Physicians may respond by taking defensive measures to allay criticism, avoid grievances, and handle drawn-out trial procedures or other possible dangers. However, there are concerns associated with such DM procedures, such as the possibility of patient injury and the imposition of needless expenses on patients and the healthcare system. Furthermore, these actions can violate widely recognized medical ethics. The practice of DM is so pervasive in medicine that it often is practiced unintentionally (Silberstein et al., 2016).

It appears that DM is a pandemic, according to multiple reports from the US, Canada, Europe, Sudan, China, and Japan (Panella et al., 2017).

In order to treat DM, the current study identified a variety of hypothesized underlying and environmental causes, instances, and preventive measures.

The current study aimed to assess the association and the impact of some factors upon attitude, practice and ethical considerations of DM among a sample of Egyptian physicians.

The present study included 130 physicians were approached from different hospitals in Cairo from four different specialties in which the questionnaire was distributed. The respondents were of both sex and varied in age groups within various specialties, different job grades and experience levels.

As regard the characteristics of the respondent physicians; the majority of participant's physicians in the current study were females (82.3%), with ages represented mainly the age groups between (30-40), below 30 and ages more than 40 till 50 years (38.5%, 30.8% and 23.1%) respectively.

Internist, surgeons and obstetricians were equally represented to some extent (31.5%, 28.5% and 25.4%) respectively and they were mostly specialists and residents (33.1% and 28.5%). They either had no post graduate studies (40%) or achieved master degree (36.2%), mostly with short periods of experience (less than 5 years 60%) and were working in governmental hospitals (55.4%).

This could be explained by the inclusion criteria of participants in the current study that fulfilled the aim of the current study.

Similar findings were reported in a study conducted by Hasan et al., (2021) among junior physicians in Kasr Al Ainy Hospitals, Egypt which found that 166 (63.6%) were females out of 261 physicians. But unlike our results the age of participants was mostly between 26-30 years (77%).

Similar to a study conducted by Abdo et al., (2021), twenty-five percent of the respondents had a master's degree, while 79.5% had no post-graduate education, according to a survey of 117 residents who worked at Kasr Al Ainy Hospital between 2018 and 2020.

Contrary to our results, the participants of the study of AL Awar et al., (2023) were mostly males (71.9%), their ages mostly above 50 years with periods of experience above 15 years. The majority were consultants.

Another study conducted by Al-Balas et al., (2023) among Jordanian physicians found that



surgeons comprised the largest specialty group among respondents (17.14%), followed by general medicine and primary care (15.43%).

Our results were in disagreement with a study conducted by Albettar and Elgebaly, (2023) in Kasr Alainy Obstetrics and Gynecology hospital on 250 physicians which found that professor represented the highest number (40 physicians, 25%).

These differences could be attributed to the criteria of the chosen sample and the aim of each study and the issues to be studied.

The current study revealed that most of the participants (60.8%) were knowledgeable about the concept of DM.

This finding was in agreement to the findings of many studies:

Ortashi et al., (2013) in their study in the UK found that 98% were aware of the DM concept.

Assefa et al., (2023) on their study on 236 surgeon in Ethiopia found that nearly (51.7%) of the surgeons who participated in the survey were aware of the concept of DM.

Al Awar et al., (2023) reported that (54.6%) of the participants of their study who working in Abu Dhabi and Dubai were aware about positive DM and (45.9%) were aware about negative DM.

This reveals the spread of the concept of DM which could be explained by the finding of Johnston et al., (2014) who claimed that medical school students were directed to DM during their education.

On contrary the study conducted by Ali et al., (2016) among Sudanese doctors working in obstetrics and gynecology found that less than one half (42.7%) of the surveyed doctors knew the concept of DM.

In contrast to the study of Sayed et al., (2021) that carried out physicians from Ain-Shams university hospitals reported that only 20% of their sample knew the concept of DM with no difference between juniors and seniors. This could be attributed to the fact that malpractice claims have been increasing in Egyptian health care setting.

As regard participants' attitude towards DM, most of the participants agreed that DM is good for patients and it should be decreased if evidence-based medicine and related guidelines are implemented. But they disagreed that DM is expensive and dangerous for patients or more expensive than medical litigations. They also disagreed that physicians should not treat the patients of potential threat of medical lawsuits and should be solely devoted to the patient best interest only.

These findings were in consistent mostly with those of Hasan et al., (2018) where their sample agreed that DM is good and it should be decreased if evidence-based medicine and related guidelines are implemented. They disagreed that DM is costly and most of time dangerous for patients and more expensive than medical litigations.

The study of Al Awar et al., (2023) also revealed that the majority (76.7%) disagreed that DM was costly and dangerous to the patients.

Zhu et al., (2018) reported that being claimed of malpractice on criticized of unqualified doctors were regarded as personal abuse, loss of reputation is overwhelmingly and payment. The extent to which DM costs is unclear.

Unlike a study performed by Salem, (2017) who emphasized that DM was bad medicine, it was wrong, harmful and unethical for patients. This can be explained by that the response of physicians can be influenced by self-motives and desires that may not reflect reality, or by fear of criticism.

On comparing the impact of some factors (age, gender, speciality, duration of experience and work place) on participants responses to attitude to DM the current study revealed that no statistical significant difference of these factors. Except for the response to the question (DM is more expensive than medical litigations) as females significantly disagreed more than males.

Also as regard the duration of experience, there was significant difference in the response to question (physicians should be solely devoted to the patient best interest only) as physicians with duration of experience between 5 and 10 years disagreed more than other physicians.

The descriptive statistics for the participants' attitude scores showed that non significant difference between age groups, gender, different specialties, duration of experience or work place.

Zhu et al., (2018) who found that participants' age, professional title or employment period did not influence preferences or decisions about DM in multivariate analysis. Their participants were more prone to accept to endorse DM if they were female physicians.

As regard the participants' practice of DM, it was found that taking extra details about the patient complaint and condition and recording the treatment details in the patients' files were the most forms of practicing DM. This followed by avoiding performing high risky intervention. Arranging unnecessary procedures including specialists consultations, referrals to other specialists and ordering laboratory tests or imaging and refusal to manage high-risk patients were the next. The majority of the participants never ordered unnecessary biopsies, while a high percentage of them neither arrange for unnecessary hospitalization nor prescribed unnecessary medications.

These results were concordant with most of the studies:

Hasan et al., (2018) on their study carried out in Bahrain emphasized that the most common forms of practicing DM were extra detail history (66.4%) and avoiding risky procedures and interventions (59.1%).

In a study conducted by Hasan et al., (2021) on 261 junior physicians in Kasr Al Ainy Hospitals found that mostly their participant took extra details about the disease (positive DM) and avoiding high risk procedures (negative DM).

This could be explained by the subjective nature of over-documentation and lack of clear guidelines for the documentations of patients records in Egypt and

lack of computerized archives for patients' data. All studies about practicing DM showed prevalence of different forms with different incidence rates.

A study performed by Ortashi et al., (2013) in UK found that ordering unnecessary tests was the most common form of DM practiced by the sampled hospital doctors (59%) followed by arranging un-necessary referral to other specialties (55%). Nine percent would refuse to treat high risk patients. However, over the double(21%) would avoid high risks procedures all together.

Arafa et al., (2023) study on 1797 physicians working in Egypt which found that this was done by 84.9% of people who ordered unneeded tests (19.5% infrequently, 54.5% occasionally, and 10.9% usually). This pattern might be explained by the participants' comparatively young ages (average age of  $36.8 \pm 9.1$  years). Younger doctors may choose avoidance as a tactic because they are worried about their experience with high-risk patients or carrying out operations that have inherent dangers.

In another study conducted by Assefa et al., (2023) on 236 surgeons in Ethiopia found that avoiding high risk procedures was the commonest defensive act performed by 60% of the participants.

The inconsistency between the finding of different studies may be attributed to the fact that respondents were from different countries and with different criteria

In the present study, chi square test comparing the impact of the chosen factors on participants' responses to practice of DM and the descriptive statistics of participants' practice scores showed non statistical significant difference between the participants in different age groups, periods of experience and work places.

These results were in consistent to some extent with those of the study of Al Awar et al., (2023). According to their findings, the variables linked to DM were not statistically significant. Various specialties, employment grades, experience levels, and age and gender groups were among the factors. Hospitals in the public and private sectors employed the responders. They attributed these findings to a small sample size because only 562 respondents participated in the study. This might possibly account for our study's findings

In the literatures, many studies suggested significant association between age and practicing DM:

Bakir et al., (2022) and Arafa et al., (2023) agreed with this, they underlined that younger doctors may have concerns about their experience level, handling high-risk patients, or carrying out treatments that have inherent hazards.

Eftekhari et al., (2023) added that when health care providers lack adequate scientific or practical training they are more prone to practice DM. Because they usually lack expertise, younger doctors may order extra tests or treatments to be sure of everything and avoid dangerous circumstances so they don't make mistakes. In addition, younger doctors could experience peer or patient pressure to prescribe

needless tests or drugs in an effort to avoid legal action or to deliver the highest quality of treatment.

Regarding gender impact on practicing DM, the present study showed a statistical significance between the different forms of DM and gender, where males significantly practiced negative DM than female physicians

This can be explained by cultural reasons, It could be challenging for Egyptian women doctors to pursue high-risk specialty, which typically involve more negative DM.

In concordant with this Hasan et al., (2021) revealed a substantial disparity between gender and the practice of several types of DM.

In disagreement with our results, the study conducted by Moosazadeh et al., (2014) in Iran concluded that compared to their male counterparts, female physicians were more likely to practice negative defensive medicine (83.6% vs. 76%), and this difference was statistically significant.

Also the study conducted by Hasan et al., (2018) in Bahrain, which revealed that Compared to male physicians, female physicians practiced negative DM at a considerably higher rate. The availability of basic laboratory and radiographic diagnostics in the clinical context can lead to physicians using these facilities to overcome the uncertainties that arise in primary care practice, which explains Bahrain's high rate of practicing negative DM.

Regarding the speciality impact, chi square test showed no significant difference between different specialties except for ordering unnecessary imaging, asked for unnecessary specialist's consultations and arranged for unnecessary referrals to other specialists, most of surgeon never did this but most of obstetricians always did this. So obstetrics practiced more negative DM. While the descriptive statistics of participant practice score declared no significant difference.

This goes hand in hand with Ortashi et al., (2013) and Ali et al., (2016) who did not find any significant difference in the practice of DM among different specialties.

However, the majority of related studies suggested the predominance of DM among certain specialties.

96% of neurosurgeons in the USA reported having DM, 83% of surgeons and anesthesiologist in Italy (Bourne et al., 2015).

Other studies showed increased DM among obstetricians from Brazil, UK, Turkey and China. It was believed that DM was the cause of the growing rates of cesarean sections (Rudey et al., 2021).

Unlike a study conducted by Calikoglu and Aras, (2020) on 220 physicians who working in the surgical departments of a Turkish university hospital, found that the highest negative DM behavior Scale scores were among participants from the pediatric surgery department.

As regard the participants medical litigations' experience, the present study reported that the majority of the participants knew the meaning of malpractice (96.2%), thought that there was unjustified increase of

liability suits, agreed that these lawsuits represented a major burden upon medical practice, agreed that there should be insurance against professional errors and they were willing to manage patients who previously involved in medical litigations. A considerable percentage of them agreed that this malpractice environment and dealing with patients who previously involved in medical litigations would affect their decision and practice of DM. Also high percentage didn't face any of these lawsuits in their career but their close colleagues did. Many of them had thought of career shift with the increase of malpractice suits.

The majority of related studies concluded that Medical practice lawsuits and legal claims against healthcare teams, facilities, and hospitals are steadily rising (Pepper and Nothing, 2011, Azab, 2013, Ali et al., 2016, Abdo et al., 2021, Assefa et al., 2023 and Arafa et al., 2023).

Banerjee and Amitav, (2018) reported that Manhandling of doctors and hospital vandalism by patients and their family members have significantly increased.

It was discovered that hundreds of malpractice cases are filed against the Egyptian Medical Syndicate's Committee of Medical Ethics annually. Over the previous ten years, this number has risen steadily (Abdo et al., 2021).

This could be explained by increasing the patients' awareness of their rights in the context of an overburdened health system (Abdo et al., 2021).

The complexity of contemporary health care may not be adequately addressed by the current legal framework. Egyptian legislation outlining medical obligations and ambiguous (Arafa et al., 2023).

Typically, Egyptian doctors are subject to personal lawsuits, which can have serious repercussions for them, including the suspension of their medical license, financial penalties, and even jail time (Arafa et al., 2023).

Promoting a protective and supportive umbrella of liability insurance and boosting insurance coverage will soothe physicians' anxieties and encourage them to practice without worrying about patients' complaints and the financial ramifications (Eftekhari et al., 2023).

Also in Ethiopia insurance or institutions are not involved in the compensation process for malpractice claims (Assefa et al., 2023). On contrary Neurosurgeons from Nepal, the United States, Japan, and the Netherlands do not consider their insurance rates to be a hardship (Yan et al., 2017).

Albettar and Elgebaly, (2023) reported that experiencing malpractice litigations or witnessing colleagues getting sued mostly influence doctors decisions, making them uncertain and concerned about how to protect themselves.

Eftekhari et al., (2023) emphasized that Significant mental and financial burdens are imposed on doctors by the experience of being called to court and the stress they endure because of their colleagues' unpleasant experiences with the trial process in courts or other complaint handling organizations, where they are unable to regain their dignity or receive

compensation for their damages. This typically motivates and inspires them to look for a new career.

In the current study, comparing the chosen factors on responses of participants medical litigations experience, both the chi-square test and descriptive statistics of participants' medical litigations experience scores showed non statistical significant difference in age, gender or work place. Participants' speciality showed that most of obstetricians agreed that there was unjustified increase of liability suits followed by ICU physicians, internist and surgeons. Also there was a Significant difference between duration of experience and the incidence of facing lawsuits and legal settlement of the physicians' colleagues in their career. On the other hand, the descriptive statistics of participants' medical litigations experience scores did not show any statistical difference for both factors.

In agreement Ortashi et al., (2013) study revealed no significant correlation between litigation and different investigated variables (as age, gender and work place).

Kamel et al., (2012), evaluated malpractice allegations in the Egyptian governorates of Damietta and Dakhalia. Anesthesia accounted for the largest percentage of claims, followed by general surgery, obstetrics and gynecology, orthopedics, and ophthalmology.

Unlike a study conducted by Hasan et al., (2018) shows that about half of female physicians have been involved in medical litigations, compared to about half of male physicians.

Unlike a study conducted by Bakir et al., (2022) in Dicle University Faculty of Dentistry in Oral and Dental Health Hospital in southeast Turkey which found that only 10.85% of them had knowledge about the content of the malpractice concept and a very small portion (6.28%) stated that the malpractice lawsuit to be filed against them would not affect their physician performance.

This can be explained by the fact that dentists are unusually can fronted with malpractice claims.

In the present study, the majority of participants agreed that DM would protect physicians and patient from harm and they agreed that DM would impair physicians- patients' relationship and induce new conflicts and would restrict physician's creativity and medical process. They were equally agreed and disagreed that DM would impair patient's physical and psychological health.

On comparing the impact of age, gender, speciality, duration of experience and work place on participants' responses to ethical considerations. No significant difference found neither on applying chi-square test nor calculating the descriptive statistics of participants' ethical consideration scores.

In most of the studies, physicians practiced DM in order to avoid legal problems and thus protect them against harm (Bakir et al., 2022, Arafa et al., 2023).

In contrast to this Katz, (2019) emphasized that DM is not necessarily wrong or unethical. In many cases it may lead to improving the level of healthcare recieved by the patient.

Eftekhari et al., (2023) declared that mutual trust between the patient and the doctor is associated with diabetes mellitus. Patients who do not trust their doctors may adopt defensive behavior, which might further erode their trust in their physicians. The important doctor-patient relationship could be severely ruined by this.

Albettar and Elgebaly, (2023) reported that 39.4% of their participants stated that the physician-patient relationship is severely limited and 38.1% stated that it is slightly limited while 22.5% stated that there is no limitations for them.

These results are directly related to malpractice claims as being subjected to complaints or being sued which can lead to emotional reactions in healthcare professionals such as embarrassment, guilt, anger and depression. Even if the lawsuit will result in favor of the physician, it will cause loss of reputation (Miziara and miziara, 2022).

Bakir et al., (2022) suggested that health news which only included patient rights discredit health care professionalism the eyes of the public. This negatively affects the physician patient relationship.

Albettar and Elgebaly, (2023) reported that facing the threats of working under medical liability creates bad physiologoca burdens that is not conducive to the optimal use of staff in a medical system.

Bakir et al., (2022) reported that press and social media suppression of health care providers plays a major role in promoting physicians to worry and uneasiness.

Abdo et al., (2021) reported that The majority of their respondents reported feeling physically insecure while practicing medicine, which they linked to the sharp rise in hospital patient and family vandalism and physician manhandling.

## Conclusion

Defensive Medicine is quiet knowledgeable by majority of the physicians and appreciated to be good and not expensive to the patients. Various forms of DM are practiced based on social, cultural and professional background. Taking extra details about the patient complaint and condition and recording treatment were the most forms of positive DM , avoiding performing high risky intervention was the most forms of negative DM. Male physicians were significantly practice negative DM than female physicians. One of the common causes of persisting DM is concerned with legal insecurity for health care professionals specially with inadequate social support and insurance coverage. DM had negative reflection with deterioration of physician-patient relationship. Career shift is one of the suggested options to stay away from the insecurity feelings. The impact of the studied factors showed non-significant difference in most items which could be attributed to small sample size.

## References

**Abdo H, Aboubakr H and Basyoni H (2021) :** How prevalent is the defensive medicine practice among the Egyptian', *The Egyptian Journal of*

*Forensic Sciences and Applied Toxicology*, 21(4), pp.57-64.

**Al Awar S, Ucenic TE and Elbiss H (2023):** The practice of defensive medicine among physicians in the United Arab Emirates: A clinician survey. *Medicine (Baltimore)*, 102(34), pp, e34701.

**Al-Balas Q, Altawalbeh S, Rinaldi C et al., (2023):** The practice of defensive medicine among Jordanian physicians: a cross sectional study. *PLoS One*, 18(11), e0289360.

**Albettar O and Elgebaly A (2023):** Defensive medicine and medical liability: A Cross-sectional study in Kasr Alainy Obstetrics and Gynecology hospital. *Majmaah Journal of Health Sciences*, 11(1), pp.1.

**Ali AA, Hummeida ME, Elhassan YA et al., (2016):** Concept of defensive medicine and litigation among Sudanese doctors working in obstetrics and gynecology. *BMC Med Ethics*, 17(12).

**Arafa A, Negida A, Elsheikh M et al., (2023):** Defensive medicine practices as a result of malpractice claims and workplace physical violence: a cross-sectional study from Egypt. *Sci Rep*, 13(1), pp, 22371.

**Assefa EA, Teferi YA, Alemu BN et al., (2023):** Practice of defensive medicine among surgeons in Ethiopia: cross-sectional study. *BMC Med Ethics*, 24(95). <https://doi.org/10.1186/s12910-023-00979-w>.

**Azab S (2013):** Claims of malpractice investigated by the Committee of medical ethics, Egyptian medical syndicate, Cairo, *Egyptian Journal of Forensic Sciences*, 3(4), pp.104-111.

**Bakir Ş, Ünal S and Eratilla V (2022):** Effects of defensive medicine practices on health care in southeast Turkey. *Journal of Health Sciences and Medicine*, 5, pp.399-409.

**Banerjee and Amitav (2018):** Perspectives on Violence against Doctors. *Perspectives in Medical Research*, 6(3), pp 1-13.

**Bourne T, Wynants L, Peters M et al., (2015):** The impact of complaints procedures on the welfare, health and clinical practice of 7926 doctors in the UK: a cross-sectional survey. *BMJ Open*, 5(1), e006687.

**Calikoglu O and Aras A (2020):** Defensive medicine among different physicians' disciplines: A descriptive cross-sectional study. *Journal of Forensic and Legal Medicine*, 73, pp. 101-970.

- Eftekhari MH, Parsapoor A, Ahmadi A et al., (2023):** Exploring defensive medicine: examples, underlying and contextual factors, and potential strategies - a qualitative study. *BMC Med Ethics*, 24(1), pp.82.
- Garattini L and Padula A (2020):** Defensive medicine in Europe: a 'full circle'? *Eur J Health Econ*, 21(2), pp.165-170. <https://doi.org/10.1007/s10198-019-01144-0>
- Hasan B, Abdulrahim H, AlMukhtar M et al. (2018):** The practice of defensive medicine by doctors in primary health care in the Kingdom of Bahrain. *Saudi J Med*, 1, pp.2518–3389.
- Hasan MDA, Shokry DA, Mahmoud RH et al., (2021):** Defensive Medicine Practice in Different Specialties among Junior Physicians in KasrAlAiny Hospitals, Egypt. *Indian J Community Med*, 46(4), pp.752-756.
- Johnston WF, Rodriguez RM, Suarez D et al., (2014):** Study of medical students' malpractice fear and defensive medicine: a "hidden curriculum?". *West J Emerg Med*, 15(3), pp.293-8.
- Kamel F, El-Bakary A, Attalla S et al., (2012):** Malpractice Claims in Dakhalia and Damietta Governorates: A 10 Year Evaluation Study. *Mansoura Journal of Forensic Medicine and Clinical Toxicology*, 1(6).
- Katz E (2019):** Defensive medicine: a case and review of its status and possible solutions. *Clin Pract Cases Emerg Med*, 3(4), pp.329-332.
- Miziara ID and Miziara CSMG (2022):** Medical errors, medical negligence and defensive medicine: A narrative review. *Clinics (Sao Paulo)*, 77.
- Moosazadeh M, Movahednia M, Movahednia N et al., (2014):** Determining the frequency of defensive medicine among general practitioners in Southeast Iran. *Int J Health Policy Manag*, 2(3), pp.119–123.
- Ortashi O, Virdee J, Hassan R et al., (2013):** The practice of defensive medicine among hospital doctors in the United Kingdom. *BMC medical ethics*, 14(1), pp. 1-6.
- Panella M, Rinaldi C, Leigheb F et al., (2017):** Prevalence and costs of defensive medicine: a national survey of Italian physicians. *Journal of health services research & policy*, 22(4), pp.211-217.
- Pepper MS and Nothling MS (2011):** Is South Africa on the verge of a medical malpractice litigation storm? *SAJBL*, 4(1), pp.29–35.
- Rudey E, Leal M and Rego G (2021):** Defensive medicine and cesarean sections in Brazil. *Medic*, 100, e24176.
- Salem R (2017):** 'Defensive Medicine and the Protective Extras', *Al-Azhar Medical Journal*, 46(4), pp. 1-1.
- Sayed HMM, EL-Sigini AI, AL-Akid YF et al., (2021):** Assessment of the Prevalence of Practicing Defensive Medicine among Physicians at Ain-Shams University Cited by thesis submitted for partial fulfillment of master degree in forensic medicine and clinical toxicology faculty of medicine Ain shams university .pp: 46-76.
- Silberstein E, Shir Az O, Reuveni H et al. (2016):** Defensive medicine among plastic and aesthetic surgeons in Israel. *Aesthet Surg J*, 36(10), pp.299–304.
- Yan SC, Hulsbergen AFC, Musken IS et al. (2017):** Defensive medicine among neurosurgeons in the Nether - lands: a national survey. *Acta Neurochir*, 159(12), pp.2341–50.
- Zhu L, Li L and Lang J (2018):** The attitude towards defensive medicine among physicians of obstetrics and Gynecology in China: a questionnaire survey in a national congress. *BMJ open*, 8(2), e019752.

## تأثير بعض العوامل على موقف الأطباء وممارستهم للطب الدفاعي: دراسة مقطعية

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### الملخص العربي

**المقدمة:** يمكن تعريف الطب الدفاعي على أنه انحراف عن الممارسة الطبية الجيدة والمقبولة ويتم تحفيزه في المقام الأول عن طريق التهديد أو الخوف من المسؤولية القانونية المهنية.

**الهدف من البحث:** الهدف من الدراسة الحالية هو تقييم الارتباط وتأثير بعض العوامل على المواقف والممارسة والاعتبارات الأخلاقية للطب الدفاعي بين عينة من الاطباء المصريين.

**المرضي وطرق العلاج:** تم إجراء دراسة مقطعية باستخدام استبيان مفصل ذاتيا مكون من اربعين نقطة لتحقيق هدف الدراسة على مئة وثلاثين طبيبا بأربعة تخصصات مختلفة من بعض المستشفيات المختلفة في القاهرة.

**النتائج:** من اصل ١٣٠ طبيبا مستجيبا، كان معظمهم على دراية بالطب الدفاعي (٦٠.٨٪ أطباء). اتفق معظم المشاركين على أن الطب الدفاعي مفيد للمرضى (٨٩ طبيبا، ٦٨.٤٪). قام سبعون طبيبا (٥٣.٨٪) دائما بتسجيل تفاصيل العلاج والبيان المحدد لكل مريض في ملفاتهم. قدم ستة وستون طبيبا (٥٠.٨٪) أحيانا تفاصيل إضافية حول تناول الدواء. اثنان وستون طبيبا (٤٧.٧٪) و٣٦ طبيبا (٢٧.٧٪) على التوالي طلبوا في بعض الأحيان استشارة أخصائي غير ضرورية أو رتبوا لدخول المستشفى غير الضروري. مارست الطبيبات الطب الدفاعي التأكيدى أكثر من الأطباء الذكور. جميعهم تقريبا يعرفون معنى سوء الممارسة الطبية (١٢٥ طبيبا، ٩٦.٢٪). لم يواجه تسعون طبيبا (٦٩.٢٪) أيًا من هذه الدعاوى القضائية أو التسوية القانونية في حياتهم المهنية بينما كان لدى ٨٧ طبيبا (٦٦.٩٪) بعض زملائهم الذين واجهوا دعاوى قضائية أو تسوية قانونية في حياتهم المهنية. اتفقت نسبة كبيرة من المشاركين على أن الطب الدفاعي من شأنه أن يضعف العلاقة بين الأطباء والمرضى ويسبب صراعات جديدة (٦٩ طبيبا، ٥٣.١٪) وأن الطب الدفاعي من شأنه أن يحد من إبداع الأطباء والتقدم الطبي (٦١ طبيبا، ٤٦.٩٪).

**الخلاصة:** عرف غالبية الأطباء مفهوم الطب الدفاعي، واتفق معظمهم على أن الطب الدفاعي مفيد للمرضى، ومارس الأطباء الإناث الطب الدفاعي الإيجابي أكثر من الأطباء الذكور.