# Defensive Medicine – A Well-Established Practice in the Low Risk Specialty of Psychiatry

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Defensive Medicine – A Well-Established Practice in the Low Risk Specialty of Psychiatry

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Abstract

**Objective:** Psychiatry is a low risk specialization; however, there is a steady increase in malpractice claims against psychiatrists. Defensive psychiatry (DP) refers to any action undertaken by a psychiatrist to avoid malpractice liability that is not for the sole benefit of the patient's mental health and well-being. The objectives of this study were to assess the scope of DP practiced by psychiatrists and to understand whether awareness of DP correlated with defensive behaviors.

**Methods:** A questionnaire was administered to 213 Israeli psychiatry residents and certified psychiatrists between May and June 2015 regarding demographic data and experience with malpractice claims, medico-legal literature, and litigation. Four clinical scenarios represented defensive behaviors and reactions (feelings and actions) to malpractice claims.

**Results:** Forty-four (20.6%) certified psychiatrists and four (1.9%) residents were directly involved in malpractice claims; while, 132 (62.1%) participants admitted to practicing DP. Residents acknowledged the practice of DP more than senior psychiatrists ($p = .038$). Awareness of DP correlated with unnecessary hospitalization of suicidal patients, increased unnecessary follow-up visits, and prescribing smaller drug dosages than required for pregnant women and elderly patients.

**Conclusion:** This study provides evidence that DP is well-established in the routine clinical daily practice of psychiatrists. Further studies are needed to reveal whether DP effectively protects psychiatrists from malpractice suits or, rather, if it impedes providing quality psychiatric care and represents an economic burden that leads to more harm for the patient.

**Keywords:** Defensive Medicine; Defensive Psychiatry (DP); Medical Malpractice
Significant Outcomes:

- Defensive medicine (DP) is well-established in routine clinical daily practice of psychiatry, although this specialty has a low risk for malpractice lawsuits.

- Awareness of DP correlated with several defensive behaviors including: unnecessary hospitalization of suicidal patients, increased unnecessary follow-up visits, and prescribing smaller dosages than required for pregnant women and elderly patients.

- There is a higher propensity of younger psychiatrists to report defensive behaviors and practice defensive medicine despite that complaints of malpractice typically characterize older psychiatrists.

Limitations:

- This study described psychiatrists’ perceptions of defensive medicine and not objective data that may describe this phenomenon, as objective methods for measuring defensive medicine are extremely difficult to employ.

- It is often difficult to identify the difference between liability-related motivation and other factors that influence clinical decision making. Some clinical decisions might reflect the policy of the institution where the physician works, the personal attitude of the physician, a less patriarchal standpoint that sees the patient’s right to decide about their treatment, and more.
Introduction:

Defensive Medicine comprises medical actions that deviate from sound medical practice, performed primarily to reduce exposure to malpractice liability or to provide legal protection in the case of a malpractice lawsuit [1-3]. Defensive psychiatry (DP) refers to any action undertaken by a psychiatrist mainly to avoid malpractice liability, rather than for the sole benefit of the patient's mental health and wellbeing [4]. There are two main forms of defensive medical behaviors described in the literature: 1) Assurance behavior ("positive defensive medicine"), which involves ordering diagnostic tests and/or treatments, referrals to other physicians, and additional services of marginal medical value merely to prevent or limit liability. An example in psychiatry would be a patient with suicidal ideation who could and should be treated as an outpatient, but is hospitalized merely for defensive reasons. 2) Avoidance behavior ("negative defensive medicine") refers to the physician's reluctance to be involved in the treatment of high-risk patients or procedures [2, 4]. An example of this is the reluctance to prescribe medication to pregnant women suffering from affective or anxiety disorders; although, there are clear indications to begin pharmacological treatment.

The practice of defensive medicine places a great economic burden on society; in addition, it is not supported by evidence-based studies and can be harmful due to complications from unnecessary tests and procedures [1, 3, 5-7]. Various studies have tried to evaluate the cost of defensive medicine over the years. Kessler and McClellan [5] showed that defensive medicine is responsible for up to 9% of total health spending. Others showed lower percentages (around 1.5% of the total health expenditure). Mello and colleagues [6] estimated the total annual cost of medical liability in 2008 to be more than 55 billion dollars in the United States. Nonetheless, it is
a widespread phenomenon rooted in various fields of medicine. Studdert et al. [2] showed that up to 93% of physicians in a high risk environment practice defensive medicine. Asher et al. [3] demonstrated, in a nationwide survey in Israel, that defensive behaviors are common (up to 60% prevalence) in eight medical disciplines, four of which are not considered to be at high risk for litigation. Another study showed that 97% of obstetricians and gynecologists felt their daily work practice was affected by concerns about being sued for medical negligence [8].

Psychiatry is considered a low risk specialization [9, 10]. However, data from recent years demonstrated that there is a steady increase in complaints of medical negligence, claims of malpractice, and complaints at the state board level against psychiatrists [4, 11]. Jena and colleagues [9] reported an annual probability of 2.6% for psychiatrists being sued in the United States. Furthermore, data show that the proportion of physicians facing malpractice claims in low risk specialties is about 36% by age 45, and rises up to 75% at age 65. Some of the allegations made in litigation cases in the field of psychiatry include incorrect diagnosis, incorrect or ineffective treatment, medication errors, improper detention while hospitalized, doctor-patient boundary violations, and inadequate assessment and management of suicidal patients [4, 10, 12]. Research regarding DP is scarce and mostly limited to suicide assessments.

**Aims of study:** The primary aim of this study was to assess the scope of defensive medicine practiced by Israeli psychiatrists in the public and private sectors. The secondary aim was to understand how one's awareness of defensive practices correlates with applying defensive behaviors and the psychological impact of past malpractice claims.
Methods

Two-hundred thirteen Israeli certified psychiatrists and residents in psychiatry volunteered to complete a survey on defensive practices and attitudes. This study was approved by the Israel psychiatric Association and was administered during the Tri-Annual Congress of the Israeli Psychiatric Association on May 2015. The survey was completely anonymous and included an introduction with explanation regarding the nature of the survey and definition for defensive medicine. There is only one previous questionnaire of defensive medicine in the psychiatric literature, reported by Passmore and Leung [13]; therefore, we started with a replication of the previous questionnaire and added more details to examine the scope of DP as well as its application. Our research team consulted with leading psychiatrists on important topics in the field to develop the questionnaire. It was pretested on 17 psychiatrists and minor changes were made according to the research team’s suggestions. It took approximately 10 min to complete the survey.

The final questionnaire asked about demographic data (age, gender, professional position within department, work experience, and work in public and private practices) as well as personal experience with malpractice claims and exposure to medico-legal literature and litigation. To survey the extent of defensive medicine, we asked a direct question: “Do you practice defensive medicine?” Admission of practicing defensive medicine with at least half of the physician's patients was considered as acknowledgment of defensive medicine by the participant. In addition, we asked participants about defensive behaviors in various clinical scenarios. Specifically, we inquired about 13 behaviors in four domains (see Tables 2 & 3). These domains were chosen by our research team to target major issues in the field of psychiatry.
and day-to-day practice, as well as high-risk cases for medico-legal actions. The four scenarios of possible defensive practice were: (1) treatment of suicidal patients, (2) treatment of pregnant women, (3) initiating or changing drug treatment, and (4) treatment of elderly patients. Participants scored the practice of specific defensive behaviors on a 5-point Likert scale as follows: 5 (“with every patient”), 4 (“with most patients”), 3 (“with half of the patients”), 2 (“with a few patients”), and 1 (“with no patient”). To assess the internal reliability, we calculated Cronbach’s Alpha of the 13 items that measured defensive behaviors, resulting in good internal consistency: α = 0.67. Participants were also asked about their feelings (anxious, restless, angry, loss of energy or tired, guilty, and mistrustful) and functioning (sleep problems and interference with work, family, or social activities) in the period they were involved in malpractice claims.

**Statistical analysis:** Continuous data were analyzed using the t-test for independent samples or Pearson correlation coefficients. Reported p values are two-sided. All analyses were performed using IBM SPSS 21.0 (IBM Corp, 2012) statistical software.

**Results**

The demographic characteristics of the psychiatrists surveyed are presented in Table 1. In our sample, both sexes were almost equally represented, about three quarters were certified psychiatrists and slightly less than half were in a management position. Most participants (77.9%) worked in a public hospital and more than half (53.5%) had a private practice. Of the 213 psychiatrists, only 48 (22%) were directly involved in malpractice claims. Among them, 44 (91.7%) were certified psychiatrists and four (8.3%) were residents.
Table 1. Demographic characteristics of the sample of Israeli psychiatrists

<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Age</strong></td>
<td>$M = 48.00$ ($SD = 11.82$)</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>117 (54.9%)</td>
</tr>
<tr>
<td>Female</td>
<td>96 (45.1%)</td>
</tr>
<tr>
<td><strong>Experience</strong></td>
<td></td>
</tr>
<tr>
<td>Resident</td>
<td>44 (20.7%)</td>
</tr>
<tr>
<td>Certified</td>
<td>169 (79.3%)</td>
</tr>
<tr>
<td><strong>Department position</strong></td>
<td></td>
</tr>
<tr>
<td>Resident</td>
<td>44 (20.7%)</td>
</tr>
<tr>
<td>Consultant</td>
<td>67 (31.4%)</td>
</tr>
<tr>
<td>Department head</td>
<td>102 (47.9%)</td>
</tr>
<tr>
<td><strong>Place of work</strong></td>
<td></td>
</tr>
<tr>
<td>Public hospital</td>
<td>166 (77.9%)</td>
</tr>
<tr>
<td>HMO</td>
<td>41 (19.2%)</td>
</tr>
<tr>
<td>Private practice</td>
<td>114 (53.5%)</td>
</tr>
<tr>
<td><strong>History of malpractice claims</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>48 (22.5%)</td>
</tr>
<tr>
<td>No</td>
<td>165 (77.5%)</td>
</tr>
<tr>
<td><strong>Reading medical-legal literature &amp; litigation</strong></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>104 (48.8%)</td>
</tr>
<tr>
<td>No</td>
<td>109 (51.2%)</td>
</tr>
</tbody>
</table>
There was a small, but significant negative correlation between the age of the participants and acknowledgment of defensive practice ($r = -.14, p = .049$), meaning that there is a tendency in younger participants to admit that they practice defensive medicine. In treating suicidal patients, female psychiatrists were more prone to consult with a senior psychiatrist than male practitioners (females: $M = 3.41, SD = 1.27$; males: $M = 2.85, SD = 1.20$; $t_{(171)} = -2.96; p = .004$) and more prone to refer to another mental health professional (females: $M = 3.28, SD = 0.87$; males: $M = 2.90, SD = 1.13$; $t_{(180)} = -2.59; p = .010$). There were no significant differences in the acknowledgement or practice of defensive medicine when examining the department position, place of work, or reading medical-legal literature. Participants reporting a history of malpractice claims were more prone to acknowledge defensive practice ($M = 3.02, SD = 0.96$) compared with those who did not ($M = 2.60, SD = 0.85$) and this difference was significant ($t_{(192)} = 2.82; p = .005$).

There were significant differences between residents in psychiatry and certified psychiatrists for the practice of defensive medicine (Table 2). Residents acknowledged the practice of defensive medicine more than experienced psychiatrists ($p = .038$). For suicidal patients, residents were more prone to advise hospitalization ($p = .017$) and to consult with a senior psychiatrists ($p < .001$) than certified psychiatrists. Residents avoided the prescription of drugs to pregnant patients more than experienced psychiatrists ($p = .025$). For elderly patients treated with antipsychotics, certified psychiatrists explained the risks of cerebrovascular diseases more than residents ($p = .009$).
Table 2. Defensive medicine: comparison between residents and certified psychiatrists

<table>
<thead>
<tr>
<th></th>
<th>Certified M (SD)</th>
<th>Resident M (SD)</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledgement of defensive practice</td>
<td>2.62 (0.93)</td>
<td>2.90 (0.73)</td>
<td>2.11</td>
<td>196</td>
<td>.038</td>
</tr>
<tr>
<td>Defensive behaviors:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suicidal patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advises unwarranted hospitalization</td>
<td>2.82 (1.09)</td>
<td>3.34 (1.28)</td>
<td>2.46</td>
<td>199</td>
<td>.017</td>
</tr>
<tr>
<td>Increases follow-up</td>
<td>3.51 (1.10)</td>
<td>3.75 (1.04)</td>
<td>1.30</td>
<td>199</td>
<td>.195</td>
</tr>
<tr>
<td>Initiates contact with family</td>
<td>4.05 (0.83)</td>
<td>3.96 (0.87)</td>
<td>-0.51</td>
<td>178</td>
<td>.611</td>
</tr>
<tr>
<td>Consults senior psychiatrist</td>
<td>2.84 (1.14)</td>
<td>4.62 (0.75)</td>
<td>10.16</td>
<td>171</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Refers to another professional</td>
<td>3.03 (1.03)</td>
<td>3.35 (1.06)</td>
<td>1.47</td>
<td>180</td>
<td>.144</td>
</tr>
<tr>
<td>Prescribes medication without indication</td>
<td>1.71 (0.72)</td>
<td>2.00 (0.89)</td>
<td>1.83</td>
<td>180</td>
<td>.069</td>
</tr>
<tr>
<td>Changing or initiating new medication</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Informs about severe yet rare side effects</td>
<td>3.45 (1.29)</td>
<td>3.30 (1.27)</td>
<td>-0.69</td>
<td>208</td>
<td>.490</td>
</tr>
<tr>
<td>Records that explained about side effects</td>
<td>3.49 (1.25)</td>
<td>3.27 (1.28)</td>
<td>-1.02</td>
<td>207</td>
<td>.308</td>
</tr>
<tr>
<td>Informs of increased risk of suicidality</td>
<td>2.74 (1.44)</td>
<td>2.52 (1.37)</td>
<td>-0.88</td>
<td>205</td>
<td>.380</td>
</tr>
</tbody>
</table>
In our sample 62.1% of participants admitted practicing defensive medicine with at least half of their patients (Table 3), and this was very common in all four surveyed domains. To understand the relationship between acknowledging defensive practice and actually practicing defensive medicine, we computed the correlation between the answer to “Do you practice defensive medicine?” and self-reports of defensive practice behaviors in the four clinical scenarios mentioned above. As shown in Table 3, participants felt they were employing defensive procedures when treating suicidal patients when they advised hospitalization, even if not necessary, or increased the frequency of follow-up visits when not warranted. They also felt that they were practicing defensive medicine when prescribing smaller drug dosages than required in the treatment of pregnant women and elderly patients. Other behaviors, even if very frequent, were apparently not considered defensive medicine by our subjects; thus, they did not correlate with the acknowledgement of defensive practice.
### Table 3. Defensive medicine: frequencies and correlations with acknowledgement of defensive practice and with anxiety

<table>
<thead>
<tr>
<th>Acknowledgement of defensive practice</th>
<th>% of defensive practice or behaviors</th>
<th>Correlation with acknowledgement of defensive practice</th>
<th>Correlation with anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledgement of defensive practice</td>
<td>62.1%</td>
<td>1.00</td>
<td>.30*</td>
</tr>
<tr>
<td><strong>Defensive behaviors:</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Suicidal patients</strong></td>
<td></td>
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</tr>
<tr>
<td>Advises unwarranted hospitalization</td>
<td>54.2%</td>
<td>.34**</td>
<td>.47**</td>
</tr>
<tr>
<td>Increases follow-up</td>
<td>75.6%</td>
<td>.23**</td>
<td>.25†</td>
</tr>
<tr>
<td>Initiates contact with family</td>
<td>93.3%</td>
<td>-.11</td>
<td>.10</td>
</tr>
<tr>
<td>Consults senior psychiatrist</td>
<td>52.6%</td>
<td>.14</td>
<td>.20</td>
</tr>
<tr>
<td>Refers to another professional</td>
<td>65.9%</td>
<td>.01</td>
<td>.17</td>
</tr>
<tr>
<td>Prescribes medication without indication</td>
<td>10.4%</td>
<td>.09</td>
<td>-.03</td>
</tr>
<tr>
<td><strong>Changing or initiating new medication</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informs about severe yet rare side effects</td>
<td>72.9%</td>
<td>-.10</td>
<td>.18</td>
</tr>
<tr>
<td>Records that explained about side effects</td>
<td>74.2%</td>
<td>.06</td>
<td>.08</td>
</tr>
</tbody>
</table>
Informs of increased risk of suicidality | 47.3% | -0.01 | 0.23†
---|---|---|---
Pregnant patients
Avoids medication altogether | 46.8% | 0.05 | 0.39**
Prescribes smaller dosage | 45.6% | 0.27** | 0.05
Elderly patients
Informs of cerebrovascular diseases risk | 55.4% | -0.06 | 0.18
Prescribes smaller dosage | 91.9% | 0.23** | 0.01

** p < .001
† p < .10

Of the 58 participants who reported how they were affected by malpractice claims, 36 felt anxious, 33 angry, 26 restless, 16 distrustful, 14 guilty, 14 reported loss of energy or fatigue, 16 had sleeping problems, and 11 reported impaired functioning in work, family relations or social activities. As anxiety and anger were the most reported psychological symptoms, we further calculated Pearson correlation coefficients between levels of anxiety or anger and measures of defensive behavior and defensive practice. We found positive associations between the level of anxiety and acknowledging defensive practice, advising hospitalization in suicidal patients, and avoiding drug prescription in suicidal patients. We also found an almost significant trend between levels of anxiety and increased follow-up in suicidal patients and telling the patient about increased suicidal symptoms before starting selective serotonin reuptake inhibitors (Table 3). The only significant correlation with anger was advising hospitalization in suicidal patients (r = 0.37 p = .006).
Discussion

This is the first study to describe defensive medicine among psychiatrists that not only reports on the extent of the phenomenon, but also identifies specific actions taken by psychiatrists to avoid malpractice liability. This study confirms the assumption that defensive medicine is a well-rooted common practice among psychiatrists. The prevalence of defensive medicine in practice was 62.1% in this study. These results are similar to a prior study done among psychiatrists in the UK, focusing on four specified actions: admitting patients to the hospital when their condition could be managed as an outpatient, placing patients on a higher level of observation than warranted, writing in patients’ records specific remarks such as “not suicidal”, and dictating letters more than necessary for managing the patient’s illness. Overall, three quarters of psychiatrists have performed at least one of the four actions within the past month [13]. Together with our study, these results are surprising, especially in light of previous reports asserting that psychiatry is a low risk specialty [9]. A recent study portrayed psychiatry as responsible for only 1% of compensations paid during the period of the study (2005-2014), with the lowest risk of recurrence of lawsuits [14].

Another interesting finding was the tendency of younger psychiatrists to report defensive behaviors and practice defensive medicine (Table 2), despite that complaints of malpractice typically characterize older psychiatrists. Martin-Fumadó et al. [12] reported that, among Spanish doctors, the mean time from specialization to motivating a claim was 12 years. Similarly, Reich et al.[10] reported that the risk of disciplinary action increased with the years of practice. This recognition of defensive medical practice among young doctors may be unique to psychiatry, as studies of defensive medicine in other specialties failed to show correlation with
age [8]. In the US, a study regarding defensive medicine among high-risk specialist physicians showed that being in practice for over 30 years is a risk factor for practicing defensive medicine [2]. Regarding psychiatry specifically, Passmore and Leung [13] demonstrated there is a higher propensity of junior trainees to admit patients to the hospital and to place patients on higher levels of observation than is necessary. A US study found that walk-in psychiatric patients are more likely to be admitted if treated by a less experienced psychiatrist (first or second year residents) compared with more experienced staff (third year residents and attending physicians) [15].

We did not find any gender differences in the acknowledgment of defensive practice; however, in treating suicidal patients, female doctors consulted more often with a senior psychiatrist than males, and were also significantly more prone to refer to another mental health professional. This finding is noteworthy, especially in light of a recent review that found male doctors have nearly 2.5 times the odds of medico-legal actions compared with female doctors [16]. Studdert et al. [14] reported that 82% of paid malpractice claims involved male physicians. It is of note that the only gender differences in defensive practices were items related to seeking support from seniors or colleagues. This might reflect differences in gender attitudes in the practice of the profession more than defensive medicine per se, but there is a lack of literature in the field; thus, more research is required.

Beyond describing the scope of the phenomena of DP, we aimed to understand how one's awareness of practicing defensive medicine was related to actually applying defensive behaviors (Table 3). As expected, psychiatrists that were directly involved in malpractice claims were more prone to acknowledge defensive practice, as seen in other studies of defensive medicine in psychiatry [13] and other medical specialties [3]. When treating a suicidal patient, most
physicians reported practicing defensive behaviors on the questionnaire, except for prescribing medication without indication. Interestingly, only two items, “advising hospitalization even if unwarranted” and “increased frequency of follow-up even if not necessary”, were significantly correlated with acknowledgement of practicing defensive medicine and higher levels of anxiety concerning malpractice claims. Psychiatrists cannot always predict or prevent patient suicide, even if they provide the best medical care possible [17]. Nonetheless, the consequences of not preventing such an act hold a tremendous risk for malpractice liability [18]. This inherently affects the considerations and treatment decisions made by the treating psychiatrist, who mostly utilizes "positive" defensive medicine and assurance behaviors. Paradoxically, a referral to unnecessary hospitalization can lead to complaints about improper detention, one of the main reasons for lawsuits in this field [10]. This again raises the question whether defensive medicine is effective in preventing the physician's malpractice liability. Moreover, only these two defensive behaviors were recognized as defensive medicine and not, for example, the referral of the suicidal patient to another professional. This finding led us to question to what extent psychiatrists are aware of their defensive practices.

When examining the relationship between acknowledgment of defensive practice and treatment of pregnant women, we found that psychiatrists prescribe smaller dosages of medication than is customary. They may not recognize that they are practicing defensive medicine when avoiding prescribing proper dosages to these patients. However, psychiatrists who experience more anxiety about malpractice claims avoid giving pregnant women medication altogether, implying that this behavior is indeed related to defensive medicine. This practice raises special concerns as it is known that untreated depression or anxiety during pregnancy may negatively impact both the mother and fetus, and residual depression due to inefficient dosage of
psychotropic treatment may result in dual exposures for the fetus to both medication and 
untreated depression [19].

Prescribing smaller drug dosages than customary was also evident in the treatment of 
elderly patients. Certified psychiatrists, more often than residents, attributed this to the 
propensity of antipsychotic drugs to cause cerebrovascular diseases. This practice correlated with 
acknowledgment of defensive medicine, but not with higher levels of anxiety. These reported 
prescribing habits are in accordance with the FDA black box warning and guidelines from 2005 
and may represent not only malpractice concerns, but rather a more clinical standpoint in treating 
this population.

**Limitations:** This study described psychiatrists’ perceptions of defensive medicine and 
not objective data that may describe this phenomenon. Self-reports of defensive medicine may be 
biased, and may lead physicians to overstate the frequency of performing defensive medicine. 
Objective methods for measuring defensive medicine are extremely difficult to employ [1, 3]. It 
is often difficult to identify the difference between liability-related motivation and other factors 
that influence clinical decision making. For example, in this study, practices that could be 
viewed as defensive medicine, such as “initiate contact with the family of a suicidal patient” and 
“inform of severe yet rare side effects of new drug treatment”, characterized a high percentage of 
doctors, but were not correlated with defensive medicine or anxiety levels. These clinical 
decisions might reflect the policy of the institution where the physician works, the personal 
attitude of the physician, a less patriarchal standpoint that sees the patient’s right to decide about 
their treatment, and more.
Conclusions

Defensive medicine is well-established in routine clinical psychiatry, despite that this specialty has a low risk for malpractice lawsuits. Further studies are necessary to determine if the putative effect of defensive medicine impedes high quality clinical psychiatric care of patients and to examine the economic burden of DP on health care providers.

Author's Statements

All authors contributed extensively to the work presented in this paper.

I.R and I.P. designed the study, conducted data collection and wrote the manuscript; H.R conceived the study and edited the prepared manuscript; O.B. supervised the data collection and analysis and edited the manuscript; L.C. performed the statistical analysis, interpreted the data and wrote the manuscript.

Supporting data is available upon request: please contact the corresponding author

reuveni@hadassah.org.il.

We have read and understood BMJ policy on declaration of interests and declare that we have no competing interests.
References


Defensive Medicine in the Field of Psychiatry

The Department of Psychiatry in Hadassah Hebrew University Medical Center and the Faculty of Health Sciences in Ben Gurion University are conducting a survey on “Defensive Medicine in the field of psychiatry in a time of increasing malpractice claims”.

Defensive Medicine refers to any diagnostic or treatment measures undertaken mainly in order to avoid malpractice claims. According to previous studies in Israel, defensive medicine is very common among Israeli physicians. This practice may have significant implications on the quality of medicine practiced in Israel. Yet, no research has been done on this topic among Israeli psychiatrists.

The objectives of the present survey is to evaluate the influence of Defensive Medicine on decision making in daily practice of psychiatrists. If you work with children and the question is not relevant for your practice, please indicate this between brackets.

We will be glad if you agree to help us by filling out the questionnaire. The survey is anonymous, and although formulated in masculine gender it is intended for men and women as well.

Thank you for your cooperation.

2. Age _________
   How many years after certification? ________

Do you practice defensive medicine in your daily practice?

1. With no patient   2. In a few patients   3. With half of the patients   4. With most patients   5. With every patient

The following questions refer to the history of malpractice claims:

1. Did anyone of your patients / patients’ family members file a complaint against you to the director of the institution where you work?  Yes / No
2. Were you ever involved in a case of medical negligence that could have led to a malpractice claim?  Yes / No
3. Do you read medical-legal literature and litigation?  Yes / No
4. If yes, to which extent does it affect your decision-making in daily clinical practice?  
   1. Not at all   2. To a certain extent   3. To a great extent   4. Very much
The following questions refer to the treatment of suicidal patients:

1. Do you advise psychiatric hospitalization to a suicidal patient even if not warranted according to his/her mental state?
   1. With no patient   2. In a few patients   3. With half of the patients   4. With most patients   5. With every patient
2. Do you increase follow-up of a suicidal patient even if it is not warranted according to his/her mental state?
   1. With no patient   2. In a few patients   3. With half of the patients   4. With most patients   5. With every patient
3. Do you initiate contact with family member or other support networks?
   1. With no patient   2. In a few patients   3. With half of the patients   4. With most patients   5. With every patient
4. Do you consult with a senior psychiatrist / head of the department?
   1. With no patient   2. In a few patients   3. With half of the patients   4. With most patients   5. With every patient
5. Do you usually refer these patients to another professional (psychologist / social worker)?
   1. With no patient   2. In a few patients   3. With half of the patients   4. With most patients   5. With every patient
6. Do you prescribe medication even if there is no clear indication?
   1. With no patient   2. In a few patients   3. With half of the patients   4. With most patients   5. With every patient

The following questions refer to initiating or changing a patient's medication:

1. When initiating a new medication do you inform your patient about severe yet rare side effects?
   1. With no patient   2. In a few patients   3. With half of the patients   4. With most patients   5. With every patient
2. Do you usually record having explained to the patient about the side effects before initiating new medication?
   1. With no patient   2. In a few patients   3. With half of the patients   4. With most patients   5. With every patient
3. Do you inform your patient about increased risk of suicidality after initiating treatment with SSRI's (as stated by FDA black box warning)?
   1. With no patient   2. In a few patients   3. With half of the patients   4. With most patients   5. With every patient
The following questions refer to the treatment of pregnant women:

1. Do you avoid prescribing medication for pregnant women altogether?
   1. With no patient       2. In a few patients 3. With half of the patients 4. With most patients 5. With every patient
2. If you decide to initiate new medication for a pregnant patient do you prescribe smaller dosages than customary?
   1. With no patient       2. In a few patients 3. With half of the patients 4. With most patients 5. With every patient

The following questions refer to the treatment of elderly patients:

1. When you initiate antipsychotic treatment in an elderly patient do you inform the patient or his/her family member about increased risk of cerebrovascular events?
   1. With no patient       2. In a few patients 3. With half of the patients 4. With most patients 5. With every patient
2. If you decide to prescribe a new medication to an elderly patient do you prescribe smaller dosages than customary?
   1. With no patient       2. In a few patients 3. With half of the patients 4. With most patients 5. With every patient

If you were involved in the past in a case of a malpractice claim, during the period the claim was filed, did you feel any of the following?

8. Impaired functioning in work, family relations, or social activities:
   1. Not at all 2. Slightly 3. To a certain extent 4. Very Much
A Cross-Sectional Survey on Defensive Practices and Attitudes among Israeli Psychiatrists

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Primary Subject Heading: Mental health

Secondary Subject Heading: Medical management, Mental health

Keywords: Defensive Medicine, Defensive Psychiatry (DP), Medical Malpractice
A Cross-Sectional Survey on Defensive Practices and Attitudes among Israeli Psychiatrists

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Abstract

Objective: Psychiatry is a low risk specialization; however, there is a steady increase in malpractice claims against psychiatrists. Defensive psychiatry (DP) refers to any action undertaken by a psychiatrist to avoid malpractice liability that is not for the sole benefit of the patient's mental health and well-being. The objectives of this study were to assess the scope of DP practiced by psychiatrists and to understand whether awareness of DP correlated with defensive behaviors.

Methods: A questionnaire was administered to 213 Israeli psychiatry residents and certified psychiatrists between May and June 2015 regarding demographic data and experience with malpractice claims, medico-legal literature, and litigation. Four clinical scenarios represented defensive behaviors and reactions (feelings and actions) to malpractice claims.

Results: Forty-four (20.6%) certified psychiatrists and four (1.9%) residents were directly involved in malpractice claims; while, 132 (62.1%) participants admitted to practicing DP. Residents acknowledged the practice of DP more than senior psychiatrists ($p = .038$). Awareness of DP correlated with unnecessary hospitalization of suicidal patients, increased unnecessary follow-up visits, and prescribing smaller drug dosages than required for pregnant women and elderly patients.

Conclusion: This study provides evidence that DP is well-established in the routine clinical daily practice of psychiatrists. Further studies are needed to reveal whether DP effectively protects psychiatrists from malpractice suits or, rather, if it impedes providing quality psychiatric care and represents an economic burden that leads to more harm for the patient.

Keywords: Defensive Medicine; Defensive Psychiatry (DP); Medical Malpractice
Strengths and Limitation of this Study

- Defensive psychiatry (DP) refers to any action undertaken by a psychiatrist mainly to avoid malpractice liability, rather than for the sole benefit of the patient's mental health and wellbeing.
- A cross-sectional survey was conducted among Israeli Psychiatrists to assess defensive practices and attitudes.
- Four clinical scenarios represented defensive behaviors and reactions (feelings and actions) to malpractice claims.

Introduction:

Defensive Medicine comprises medical actions that deviate from sound medical practice, performed primarily to reduce exposure to malpractice liability or to provide legal protection in the case of a malpractice lawsuit [1-3]. Defensive psychiatry (DP) refers to any action undertaken by a psychiatrist mainly to avoid malpractice liability, rather than for the sole benefit of the patient's mental health and wellbeing [4]. There are two main forms of defensive medical behaviors described in the literature: 1) Assurance behavior ("positive defensive medicine"), which involves ordering diagnostic tests and/or treatments, referrals to other physicians, and additional services of marginal medical value merely to prevent or limit liability. An example in psychiatry would be a patient with suicidal ideation who could and should be treated as an outpatient, but is hospitalized merely for defensive reasons. 2) Avoidance behavior ("negative defensive medicine") refers to the physician's reluctance to be involved in the treatment of high-risk patients or procedures [2, 4]. An example of this is the reluctance to prescribe medication to
pregnant women suffering from affective or anxiety disorders; although, there are clear indications to begin pharmacological treatment.

The practice of defensive medicine places a great economic burden on society; in addition, it is not supported by evidence-based studies and can be harmful due to complications from unnecessary tests and procedures [1, 3, 5-7]. Various studies have tried to evaluate the cost of defensive medicine over the years. Kessler and McClellan [5] showed that defensive medicine is responsible for up to 9% of total health spending. Others showed lower percentages (around 1.5% of the total health expenditure). Mello and colleagues [6] estimated the total annual cost of medical liability in 2008 to be more than 55 billion dollars in the United States. Nonetheless, it is a widespread phenomenon rooted in various fields of medicine. Studdert et al. [2] showed that up to 93% of physicians in a high risk environment practice defensive medicine. Asher et al. [3] demonstrated, in a nationwide survey in Israel, that defensive behaviors are common (up to 60% prevalence) in eight medical disciplines, four of which are not considered to be at high risk for litigation. Another study showed that 97% of obstetricians and gynecologists felt their daily work practice was affected by concerns about being sued for medical negligence [8].

Psychiatry is considered a low risk specialization [9, 10]. However, data from recent years demonstrated that there is a steady increase in complaints of medical negligence, claims of malpractice, and complaints at the state board level against psychiatrists [4, 11]. Some of the allegations made in litigation cases in the field of psychiatry include incorrect diagnosis, incorrect or ineffective treatment, medication errors, improper detention while hospitalized, doctor-patient boundary violations, and inadequate assessment and management of suicidal patients [4, 10, 12]. Research regarding DP is scarce and mostly limited to suicide assessments.
Aims of study: The primary aim of this study was to assess the scope of defensive medicine practiced by Israeli psychiatrists in the public and private sectors. The secondary aim was to understand how one's awareness of defensive practices correlates with applying defensive behaviors and the psychological impact of past malpractice claims.

Methods

Two-hundred thirteen Israeli certified psychiatrists and residents in psychiatry volunteered to complete a cross-sectional survey on defensive practices and attitudes. This study was approved by the Israel psychiatric Association and was administered during the Tri-Annual Congress of the Israeli Psychiatric Association on May 2015. The survey was completely anonymous and included an introduction with explanation regarding the nature of the survey and definition for defensive medicine. There is only one previous questionnaire of defensive medicine in the psychiatric literature, reported by Passmore and Leung [13]; therefore, we started with a replication of the previous questionnaire and added more details to examine the scope of DP as well as its application. Our research team consulted with experienced psychiatrists holding academic positions in university medical centers on important topics in the field in order to develop the questionnaire. It was pretested on 17 psychiatry residents (mean age=33.8, SD=3.6) working in public hospitals, who volunteered to participate in the survey. Following the pretest, minor changes were made according to the research team’s suggestions. It took approximately 10 minutes to complete the survey.

The final questionnaire asked about demographic data (age, gender, professional position within department, work experience, and work in public and private practices) as well as personal experience with malpractice claims and exposure to medico-legal literature and
litigation. To survey the extent of defensive medicine, we asked a direct question: “Do you practice defensive medicine?” Admission of practicing defensive medicine with at least half of the physician's patients was considered as acknowledgment of defensive medicine by the participant. In addition, we asked participants about defensive behaviors in various clinical scenarios. Specifically, we inquired about 13 behaviors in four domains (see Tables 2 & 3). These domains were chosen by our research team to target major issues in the field of psychiatry and day-to-day practice, as well as high-risk cases for medico-legal actions. The four scenarios of possible defensive practice were: (1) treatment of suicidal patients, (2) treatment of pregnant women, (3) initiating or changing drug treatment, and (4) treatment of elderly patients.

Participants scored the practice of specific defensive behaviors on a 5-point Likert scale as follows: 5 (“with every patient”), 4 (“with most patients”), 3 (“with half of the patients”), 2 (“with a few patients”), and 1 (“with no patient”). To assess the internal reliability, we calculated Cronbach’s Alpha of the 13 items that measured defensive behaviors, resulting in good internal consistency: \( \alpha = 0.67 \). Participants were also asked about their feelings (anxious, restless, angry, loss of energy or tired, guilty, and mistrustful) and functioning (sleep problems and interference with work, family, or social activities) in the period they were involved in malpractice claims.

**Statistical analysis:** Continuous data were analyzed using the t-test for independent samples or Pearson correlation coefficients. Reported p values are two-sided. All analyses were performed using IBM SPSS 21.0 (IBM Corp, 2012) statistical software.

**Results**

The demographic characteristics of the psychiatrists surveyed are presented in Table 1. In our sample, both sexes were almost equally represented, about three quarters were certified
psychiatrists and slightly less than half were in a management position. Most participants
(77.9%) worked in a public hospital and more than half (53.5%) had a private practice. Of the
213 psychiatrists, only 48 (22%) were directly involved in malpractice claims. Among them, 44
(91.7%) were certified psychiatrists and four (8.3%) were residents.

Table 1. Demographic characteristics of the sample of Israeli psychiatrists

<table>
<thead>
<tr>
<th>Age</th>
<th>$M = 48.00$ ($SD = 11.82$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>117 (54.9%)</td>
</tr>
<tr>
<td>Female</td>
<td>96 (45.1%)</td>
</tr>
<tr>
<td>Experience</td>
<td></td>
</tr>
<tr>
<td>Resident</td>
<td>44 (20.7%)</td>
</tr>
<tr>
<td>Certified</td>
<td>169 (79.3%)</td>
</tr>
<tr>
<td>Department position</td>
<td></td>
</tr>
<tr>
<td>Resident</td>
<td>44 (20.7%)</td>
</tr>
<tr>
<td>Consultant</td>
<td>67 (31.4%)</td>
</tr>
<tr>
<td>Department head</td>
<td>102 (47.9%)</td>
</tr>
<tr>
<td>Place of work</td>
<td></td>
</tr>
<tr>
<td>Public hospital</td>
<td>166 (77.9%)</td>
</tr>
<tr>
<td>HMO</td>
<td>41 (19.2%)</td>
</tr>
<tr>
<td>Private practice</td>
<td>114 (53.5%)</td>
</tr>
<tr>
<td>History of malpractice claims</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>48 (22.5%)</td>
</tr>
</tbody>
</table>
There was a small, but significant negative correlation between the age of the participants and acknowledgment of defensive practice ($r = -.14, p = .049$), meaning that there is a tendency in younger participants to admit that they practice defensive medicine. In treating suicidal patients, female psychiatrists were more prone to consult with a senior psychiatrist than male practitioners (females: $M = 3.41, SD = 1.27$; males: $M = 2.85, SD = 1.20$; $t_{(171)} = -2.96; p = .004$) and more prone to refer to another mental health professional (females: $M = 3.28, SD = 0.87$; males: $M = 2.90, SD = 1.13$; $t_{(180)} = -2.59; p = .010$). There were no significant differences in the acknowledgement or practice of defensive medicine when examining the department position, place of work, or reading medical-legal literature. Participants reporting a history of malpractice claims were more prone to acknowledge defensive practice ($M = 3.02, SD = 0.96$) compared with those who did not ($M = 2.60, SD = 0.85$) and this difference was significant ($t_{(192)} = 2.82; p = .005$).

There were significant differences between residents in psychiatry and certified psychiatrists for the practice of defensive medicine (Table 2). Residents acknowledged the practice of defensive medicine more than experienced psychiatrists ($p = .038$). For suicidal patients, residents were more prone to advise hospitalization ($p = .017$) and to consult with a senior psychiatrists ($p < .001$) than certified psychiatrists. Residents avoided the prescription of drugs to pregnant patients more than experienced psychiatrists ($p = .025$). For elderly patients
treated with antipsychotics, certified psychiatrists explained the risks of cerebrovascular diseases more than residents \( (p = .009) \).

Table 2. Defensive medicine: comparison between residents and certified psychiatrists

<table>
<thead>
<tr>
<th></th>
<th>Certified M (SD)</th>
<th>Resident M (SD)</th>
<th>( t )</th>
<th>df</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledgement of defensive practice</td>
<td>2.62 (0.93)</td>
<td>2.90 (0.73)</td>
<td>2.11</td>
<td>196</td>
<td>.038</td>
</tr>
<tr>
<td><strong>Defensive behaviors:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suicidal patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advises unwarranted hospitalization</td>
<td>2.82 (1.09)</td>
<td>3.34 (1.28)</td>
<td>2.46</td>
<td>199</td>
<td>.017</td>
</tr>
<tr>
<td>Increases follow-up</td>
<td>3.51 (1.10)</td>
<td>3.75 (1.04)</td>
<td>1.30</td>
<td>199</td>
<td>.195</td>
</tr>
<tr>
<td>Initiates contact with family</td>
<td>4.05 (0.83)</td>
<td>3.96 (0.87)</td>
<td>-0.51</td>
<td>178</td>
<td>.611</td>
</tr>
<tr>
<td>Consults senior psychiatrist</td>
<td>2.84 (1.14)</td>
<td>4.62 (0.75)</td>
<td>10.16</td>
<td>171</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Refers to another professional</td>
<td>3.03 (1.03)</td>
<td>3.35 (1.06)</td>
<td>1.47</td>
<td>180</td>
<td>.144</td>
</tr>
<tr>
<td>Prescribes medication without indication</td>
<td>1.71 (0.72)</td>
<td>2.00 (0.89)</td>
<td>1.83</td>
<td>180</td>
<td>.069</td>
</tr>
<tr>
<td>Changing or initiating new medication</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informs about severe yet rare side effects</td>
<td>3.45 (1.29)</td>
<td>3.30 (1.27)</td>
<td>-0.69</td>
<td>208</td>
<td>.490</td>
</tr>
<tr>
<td>Records that explained about side effects</td>
<td>3.49 (1.25)</td>
<td>3.27 (1.28)</td>
<td>-1.02</td>
<td>207</td>
<td>.308</td>
</tr>
</tbody>
</table>
In our sample 62.1% of participants admitted practicing defensive medicine with at least half of their patients (Table 3), and this was very common in all four surveyed domains. To understand the relationship between acknowledging defensive practice and actually practicing defensive medicine, we computed the correlation between the answer to “Do you practice defensive medicine?” and self-reports of defensive practice behaviors in the four clinical scenarios mentioned above. As shown in Table 3, participants felt they were employing defensive procedures when treating suicidal patients when they advised hospitalization, even if not necessary, or increased the frequency of follow-up visits when not warranted. They also felt that they were practicing defensive medicine when prescribing smaller drug dosages than required in the treatment of pregnant women and elderly patients. Other behaviors, even if very frequent, were apparently not considered defensive medicine by our subjects; thus, they did not correlate with the acknowledgement of defensive practice.

<p>| | | | | | |</p>
<table>
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</thead>
<tbody>
<tr>
<td>Informs of increased risk of suicidality</td>
<td>2.74 (1.44)</td>
<td>2.52 (1.37)</td>
<td>-0.88</td>
<td>205</td>
<td>.380</td>
</tr>
<tr>
<td><strong>Pregnant patients</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avoids medication altogether</td>
<td>2.56 (1.04)</td>
<td>3.09 (1.08)</td>
<td>2.25</td>
<td>186</td>
<td>.025</td>
</tr>
<tr>
<td>Prescribes smaller dosage</td>
<td>2.44 (1.21)</td>
<td>2.46 (1.25)</td>
<td>0.062</td>
<td>191</td>
<td>.950</td>
</tr>
<tr>
<td><strong>Elderly patients</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informs of cerebrovascular diseases risk</td>
<td>3.00 (1.30)</td>
<td>2.37 (1.38)</td>
<td>-2.65</td>
<td>191</td>
<td>.009</td>
</tr>
<tr>
<td>Prescribes smaller dosage</td>
<td>3.95 (0.93)</td>
<td>3.95 (0.66)</td>
<td>-0.02</td>
<td>195</td>
<td>.986</td>
</tr>
</tbody>
</table>
Table 3. Defensive medicine: frequencies and correlations with acknowledgement of defensive practice and with anxiety

<table>
<thead>
<tr>
<th>% of defensive practice or behaviors</th>
<th>Correlation with acknowledgement of defensive practice</th>
<th>Correlation with anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledgement of defensive practice</td>
<td>62.1% 1.00 .30*</td>
<td></td>
</tr>
<tr>
<td><strong>Defensive behaviors:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Suicidal patients</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advises unwarranted hospitalization</td>
<td>54.2% .34** .47**</td>
<td></td>
</tr>
<tr>
<td>Increases follow-up</td>
<td>75.6% .23** .25†</td>
<td></td>
</tr>
<tr>
<td>Initiates contact with family</td>
<td>93.3% .11 .10</td>
<td></td>
</tr>
<tr>
<td>Consults senior psychiatrist</td>
<td>52.6% .14 .20</td>
<td></td>
</tr>
<tr>
<td>Refers to another professional</td>
<td>65.9% .01 .17</td>
<td></td>
</tr>
<tr>
<td>Prescribes medication without indication</td>
<td>10.4% .09 -.03</td>
<td></td>
</tr>
<tr>
<td><strong>Changing or initiating new medication</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informs about severe yet rare side effects</td>
<td>72.9% -.10 .18</td>
<td></td>
</tr>
<tr>
<td>Records that explained about side</td>
<td>74.2% .06 .08</td>
<td></td>
</tr>
</tbody>
</table>
effects

<table>
<thead>
<tr>
<th>Informs of increased risk of suicidality</th>
<th>47.3%</th>
<th>-.01</th>
<th>.23†</th>
</tr>
</thead>
</table>

**Pregnant patients**

<table>
<thead>
<tr>
<th>Avoids medication altogether</th>
<th>46.8%</th>
<th>.05</th>
<th>.39**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescribes smaller dosage</td>
<td>45.6%</td>
<td>.27**</td>
<td>.05</td>
</tr>
</tbody>
</table>

**Elderly patients**

<table>
<thead>
<tr>
<th>Informs of cerebrovascular diseases risk</th>
<th>55.4%</th>
<th>-.06</th>
<th>.18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescribes smaller dosage</td>
<td>91.9%</td>
<td>.23**</td>
<td>.01</td>
</tr>
</tbody>
</table>

**p < .001
† p < .10

Of the 58 participants who reported how they were affected by malpractice claims, 36 felt anxious, 33 angry, 26 restless, 16 distrustful, 14 guilty, 14 reported loss of energy or fatigue, 16 had sleeping problems, and 11 reported impaired functioning in work, family relations or social activities. As anxiety and anger were the most reported psychological symptoms, we further calculated Pearson correlation coefficients between levels of anxiety or anger and measures of defensive behavior and defensive practice. We found positive associations between the level of anxiety and acknowledging defensive practice, advising hospitalization in suicidal patients, and avoiding drug prescription in suicidal patients. We also found an almost significant trend between levels of anxiety and increased follow-up in suicidal patients and telling the patient about increased suicidal symptoms before starting selective serotonin reuptake inhibitors (Table
3). The only significant correlation with anger was advising hospitalization in suicidal patients ($r = .37 \ p = .006$).

**Discussion**

This is the first study to describe defensive medicine among psychiatrists that not only reports on the extent of the phenomenon, but also identifies specific actions taken by psychiatrists to avoid malpractice liability. This study confirms the assumption that defensive medicine is a well-rooted common practice among psychiatrists. The prevalence of defensive medicine in practice was 62.1% in this study. These results are similar to a prior study done among psychiatrists in the UK, focusing on four specified actions: admitting patients to the hospital when their condition could be managed as an outpatient, placing patients on a higher level of observation than warranted, writing in patients’ records specific remarks such as “not suicidal”, and dictating letters more than necessary for managing the patient’s illness. Overall, three quarters of psychiatrists have performed at least one of the four actions within the past month [13]. Together with our study, these results are surprising, especially in light of previous reports asserting that psychiatry is a low risk specialty [9]. A recent study portrayed psychiatry as responsible for only 1% of compensations paid during the period of the study (2005-2014), with the lowest risk of recurrence of lawsuits [14]. Nevertheless, Jena and colleagues [9] reported an annual probability of 2.6% for psychiatrists being sued in the United States. Data also show that the proportion of physicians facing malpractice claims in low risk specialties is about 36% by age 45, and rises up to 75% at age 65.

Another interesting finding was the tendency of younger psychiatrists to report defensive behaviors and practice defensive medicine (Table 2), despite that complaints of malpractice
typically characterize older psychiatrists. Martin-Fumadó et al. [12] reported that, among Spanish doctors, the mean time from specialization to motivating a claim was 12 years. Similarly, Reich et al. [10] reported that the risk of disciplinary action increased with the years of practice. This recognition of defensive medical practice among young doctors may be unique to psychiatry, as studies of defensive medicine in other specialties failed to show correlation with age [8]. In the US, a study regarding defensive medicine among high-risk specialist physicians showed that being in practice for over 30 years is a risk factor for practicing defensive medicine [2]. Regarding psychiatry specifically, Passmore and Leung [13] demonstrated there is a higher propensity of junior trainees to admit patients to the hospital and to place patients on higher levels of observation than is necessary. A US study found that walk-in psychiatric patients are more likely to be admitted if treated by a less experienced psychiatrist (first or second year residents) compared with more experienced staff (third year residents and attending physicians) [15].

We did not find any gender differences in the acknowledgment of defensive practice; however, in treating suicidal patients, female doctors consulted more often with a senior psychiatrist than males, and were also significantly more prone to refer to another mental health professional. This finding is noteworthy, especially in light of a recent review that found male doctors have nearly 2.5 times the odds of medico-legal actions compared with female doctors [16]. Studdert et al. [14] reported that 82% of paid malpractice claims involved male physicians. It is of note that the only gender differences in defensive practices were items related to seeking support from seniors or colleagues. This might reflect differences in gender attitudes in the practice of the profession more than defensive medicine per se, but there is a lack of literature in the field; thus, more research is required.
Beyond describing the scope of the phenomena of DP, we aimed to understand how one's awareness of practicing defensive medicine was related to actually applying defensive behaviors (Table 3). We considered the psychiatrist’s answer to the question “Do you practice defensive medicine?” as evidence of conscious practice of defensive medicine, as previous studies have done [17]. However, reporting specific behaviors in different scenarios is not necessarily conscious or unconscious behavior. We aimed to ascertain conscious versus unconscious behavior by calculating the correlation between the answer to the previous question and self-reports of defensive practice behaviors in the four clinical scenarios. We assumed that a positive correlation between the self-acknowledgment of defensive practices and any specific behaviors (for example increasing follow-up with suicidal patients) is good evidence that participants are conscious of practicing defensive medicine (the more they admit defensive medicine the more they increase follow-up). Conversely, no correlation implicates that they do not consider that behavior as practicing defensive medicine, for example prescribing medication without indication to suicidal patients is apparently an unconscious defensive practice because it was not associated with self-acknowledgment of defensive medicine.

As expected, psychiatrists that were directly involved in malpractice claims were more prone to acknowledge defensive practice, as seen in other studies of defensive medicine in psychiatry [13] and other medical specialties [3]. When treating a suicidal patient, most physicians reported practicing defensive behaviors on the questionnaire, except for prescribing medication without indication. Interestingly, only two items, “advising hospitalization even if unwarranted” and “increased frequency of follow-up even if not necessary”, were significantly correlated with acknowledgement of practicing defensive medicine and higher levels of anxiety concerning malpractice claims. Psychiatrists cannot always predict or prevent patient suicide,
even if they provide the best medical care possible [18]. Nonetheless, the consequences of not preventing such an act hold a tremendous risk for malpractice liability [19]. This inherently affects the considerations and treatment decisions made by the treating psychiatrist, who mostly utilizes "positive" defensive medicine and assurance behaviors. Paradoxically, a referral to unnecessary hospitalization can lead to complaints about improper detention, one of the main reasons for lawsuits in this field [10]. This again raises the question whether defensive medicine is effective in preventing the physician's malpractice liability. Moreover, only these two defensive behaviors were recognized as defensive medicine and not, for example, the referral of the suicidal patient to another professional. This finding led us to question to what extent psychiatrists are aware of their defensive practices.

When examining the relationship between acknowledgment of defensive practice and treatment of pregnant women, we found that psychiatrists prescribe smaller dosages of medication than is customary. They may not recognize that they are practicing defensive medicine when avoiding prescribing proper dosages to these patients. However, psychiatrists who experience more anxiety about malpractice claims avoid giving pregnant women medication altogether, implying that this behavior is indeed related to defensive medicine. This practice raises special concerns as it is known that untreated depression or anxiety during pregnancy may negatively impact both the mother and fetus, and residual depression due to inefficient dosage of psychotropic treatment may result in dual exposures for the fetus to both medication and untreated depression [20].

Prescribing smaller drug dosages than customary was also evident in the treatment of elderly patients. Certified psychiatrists, more often than residents, attributed this to the propensity of antipsychotic drugs to cause cerebrovascular diseases. This practice correlated with
acknowledgment of defensive medicine, but not with higher levels of anxiety. These reported prescribing habits are in accordance with the FDA black box warning and guidelines from 2005 and may represent not only malpractice concerns, but rather a more clinical standpoint in treating this population.

One alarming finding is that 10.4% of participants in the survey state they prescribe medication without indication. As it has no significant correlation with acknowledgement of defensive practice or anxiety, we concluded this may be an expression of unconscious defensive behavior. Though there may be other, patient as well as doctor-specific, factors that influence whether or not to prescribe medication. Bradley [21] demonstrated in his study that 44.3% of doctors that reported they were prescribing medication in order to preserve the doctor-patient relationship experience discomfort. This was described in terms of avoiding litigation or complaints, but also as avoiding damage to the doctor-patient relationship, avoiding conflict and "keeping the peace".

Finally, the study showed that among participants of the study malpractice claims raised distressful feelings suggesting they are the “second victims”, meaning they, the caregivers, may be extremely distressed by the mistakes they have done (22). Furthermore, the caregiver subjected to legal proceedings may experience the “clinical judicial syndrome” (CJS) that comprises of a series of physical, psychological and behavioral symptoms (23). The associations between levels of anxiety or anger after malpractice complaints among study participants, and measures of defensive behaviors and defensive practices are in line with Pellino and Pellino's (24) assertion that defensive medicine, the concept of “second victim” and CJS are indeed an intertwined phenomena.
Limitations: This study described psychiatrists’ perceptions of defensive medicine and not objective data that may describe this phenomenon. Self-reports of defensive medicine may be biased, and may lead physicians to overstate the frequency of performing defensive medicine. Objective methods for measuring defensive medicine are extremely difficult to employ [1, 3]. It is often difficult to identify the difference between liability-related motivation and other factors that influence clinical decision making. For example, in this study, practices that could be viewed as defensive medicine, such as “initiate contact with the family of a suicidal patient” and “inform of severe yet rare side effects of new drug treatment”, characterized a high percentage of doctors, but were not correlated with defensive medicine or anxiety levels. These clinical decisions might reflect the policy of the institution where the physician works, the personal attitude of the physician, a less patriarchal standpoint that sees the patient’s right to decide about their treatment, and more.

There is no available data on the respondent’s annual incomes and malpractice premiums. In Israel premium is paid by the employer as part of the national work contracts with the Israeli Medical Association. Thus, since this is not "out of pocket money", both these factors probably do not influence the daily practice of defensive medicine in our cohort.

Conclusions

Defensive medicine is well-established in routine clinical psychiatry, despite that this specialty has a low risk for malpractice lawsuits. Coping with the defensive medicine is a challenging task. Although there are several suggested strategies, evidence is lacking and there is not one efficient solution to resolve this issue [25]. Any solution should include changes in both the physician's, as well as the patient's, perspective and behavior. This may include giving more
information to the public regarding the recommended care and relevant diagnostic and treatment
options in clinical situations prone for defensive medicine. Also developing and applying clinical
practice guidelines targeting risky clinical situations may aid doctors when faced with difficult
situations. Finally, making reforms in the liability and compensation systems available today
may be a way to preserve the beneficial effects of defensive medicine while diminishing its
hazardous effects. Further studies are necessary to determine if the putative effect of defensive
medicine impedes high quality clinical psychiatric care of patients, to examine the economic
burden of DP on health care providers and explore different strategies to cope with this troubling
phenomenon.

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**Author's Statements**

All authors contributed extensively to the work presented in this paper.

I.R and I.P. designed the study, conducted data collection and wrote the manuscript; H.R
conceived the study and edited the prepared manuscript; O.B. supervised the data collection and
analysis and edited the manuscript; L.C. performed the statistical analysis, interpreted the data
and wrote the manuscript.

Supporting data is available upon request: please contact the corresponding author

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We have read and understood BMJ policy on declaration of interests and declare that we have no competing interests.
References


Defensive Medicine in the Field of Psychiatry

The Department of Psychiatry in Hadassah Hebrew University Medical Center and the Faculty of Health Sciences in Ben Gurion University are conducting a survey on “Defensive Medicine in the field of psychiatry in a time of increasing malpractice claims”.

Defensive Medicine refers to any diagnostic or treatment measures undertaken mainly in order to avoid malpractice claims. According to previous studies in Israel, defensive medicine is very common among Israeli physicians. This practice may have significant implications on the quality of medicine practiced in Israel. Yet, no research has been done on this topic among Israeli psychiatrists.

The objectives of the present survey is to evaluate the influence of Defensive Medicine on decision making in daily practice of psychiatrists. If you work with children and the question is not relevant for your practice, please indicate this between brackets.

We will be glad if you agree to help us by filling out the questionnaire. The survey is anonymous, and although formulated in masculine gender it is intended for men and women as well.

Thank you for your cooperation.

2. Age __________
      How many years after certification? ________

Do you practice defensive medicine in your daily practice?

1. With no patient  2. In a few patients  3. With half of the patients  4. With most patients  5. With every patient

The following questions refer to the history of malpractice claims:

1. Did anyone of your patients / patients’ family members file a complaint against you to the director of the institution where you work?   Yes / No
2. Were you ever involved in a case of medical negligence that could have led to a malpractice claim?   Yes / No
3. Do you read medical-legal literature and litigation?   Yes / No
4. If yes, to which extent does it affect your decision-making in daily clinical practice?
   1. Not at all   2. To a certain extent   3. To a great extent   4. Very much
The following questions refer to the treatment of suicidal patients:

1. Do you advise psychiatric hospitalization to a suicidal patient even if not warranted according to his/her mental state?
   1. With no patient  2. In a few patients  3. With half of the patients  4. With most patients  5. With every patient

2. Do you increase follow-up of a suicidal patient even if it is not warranted according to his/her mental state?
   1. With no patient  2. In a few patients  3. With half of the patients  4. With most patients  5. With every patient

3. Do you initiate contact with family member or other support networks?
   1. With no patient  2. In a few patients  3. With half of the patients  4. With most patients  5. With every patient

4. Do you consult with a senior psychiatrist / head of the department?
   1. With no patient  2. In a few patients  3. With half of the patients  4. With most patients  5. With every patient

5. Do you usually refer these patients to another professional (psychologist / social worker)?
   1. With no patient  2. In a few patients  3. With half of the patients  4. With most patients  5. With every patient

6. Do you prescribe medication even if there is no clear indication?
   1. With no patient  2. In a few patients  3. With half of the patients  4. With most patients  5. With every patient

The following questions refer to initiating or changing a patient's medication:

1. When initiating a new medication do you inform your patient about severe yet rare side effects?
   1. With no patient  2. In a few patients  3. With half of the patients  4. With most patients  5. With every patient

2. Do you usually record having explained to the patient about the side effects before initiating new medication?
   1. With no patient  2. In a few patients  3. With half of the patients  4. With most patients  5. With every patient

3. Do you inform your patient about increased risk of suicidality after initiating treatment with SSRI's (as stated by FDA black box warning)?
   1. With no patient  2. In a few patients  3. With half of the patients  4. With most patients  5. With every patient
The following questions refer to the treatment of pregnant women:

1. Do you avoid prescribing medication for pregnant women altogether?
   1. With no patient  
   2. In a few patients  
   3. With half of the patients  
   4. With most patients  
   5. With every patient

2. If you decide to initiate new medication for a pregnant patient do you prescribe smaller dosages than customary?
   1. With no patient  
   2. In a few patients  
   3. With half of the patients  
   4. With most patients  
   5. With every patient

The following questions refer to the treatment of elderly patients:

1. When you initiate antipsychotic treatment in an elderly patient do you inform the patient or his/her family member about increased risk of cerebrovascular events?
   1. With no patient  
   2. In a few patients  
   3. With half of the patients  
   4. With most patients  
   5. With every patient

2. If you decide to prescribe a new medication to an elderly patient do you prescribe smaller dosages than customary?
   1. With no patient  
   2. In a few patients  
   3. With half of the patients  
   4. With most patients  
   5. With every patient

If you were involved in the past in a case of a malpractice claim, during the period the claim was filed, did you feel any of the following?

1. Anxious: 1. Not at all  
2. Slightly  
3. To a certain extent  
4. Very Much

2. Restless: 1. Not at all  
2. Slightly  
3. To a certain extent  
4. Very Much

3. Loss of energy / fatigue: 1. Not at all  
2. Slightly  
3. To a certain extent  
4. Very Much

4. Sleeping problems: 1. Not at all  
2. Slightly  
3. To a certain extent  
4. Very Much

5. Anger: 1. Not at all 
2. Slightly  
3. To a certain extent  
4. Very Much

6. Guilt: 1. Not at all  
2. Slightly  
3. To a certain extent  
4. Very Much

7. Distrustful: 1. Not at all  
2. Slightly  
3. To a certain extent  
4. Very Much

8. Impaired functioning in work, family relations, or social activities:
   1. Not at all  
   2. Slightly  
   3. To a certain extent  
   4. Very Much
# A Cross-Sectional Survey on Defensive Practices and Defensive Behaviors among Israeli Psychiatrists

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A Cross-Sectional Survey on Defensive Practices and Defensive Behaviors among Israeli Psychiatrists

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Abstract

Objective: Psychiatry is a low risk specialization; however, there is a steady increase in malpractice claims against psychiatrists. Defensive psychiatry (DP) refers to any action undertaken by a psychiatrist to avoid malpractice liability that is not for the sole benefit of the patient's mental health and well-being. The objectives of this study were to assess the scope of DP practiced by psychiatrists and to understand whether awareness of DP correlated with defensive behaviors.

Methods: A questionnaire was administered to 213 Israeli psychiatry residents and certified psychiatrists between May and June 2015 regarding demographic data and experience with malpractice claims, medico-legal literature, and litigation. Four clinical scenarios represented defensive behaviors and reactions (feelings and actions) to malpractice claims.

Results: Forty-four (20.6%) certified psychiatrists and four (1.9%) residents were directly involved in malpractice claims; while, 132 (62.1%) participants admitted to practicing DP. Residents acknowledged the practice of DP more than senior psychiatrists ($p = .038$). Awareness of DP correlated with unnecessary hospitalization of suicidal patients, increased unnecessary follow-up visits, and prescribing smaller drug dosages than required for pregnant women and elderly patients.

Conclusion: This study provides evidence that DP is well-established in the routine clinical daily practice of psychiatrists. Further studies are needed to reveal whether DP effectively protects psychiatrists from malpractice suits or, rather, if it impedes providing quality psychiatric care and represents an economic burden that leads to more harm for the patient.

Keywords: Defensive Medicine; Defensive Psychiatry (DP); Medical Malpractice
Strengths and Limitation of this Study

- This is the first survey among Israeli Psychiatrists to assess the scope of defensive practices and behaviours carried out in the public and private sectors.
- Defensives practices were assessed in four clinical domains (suicidal, pregnant, and elderly patients, and medication initiation/change) to target major issues in the field of psychiatry liable to medico-legal actions.
- The study identified specific actions taken by psychiatrists in order to avoid malpractice liability.
- Psychiatrists’ perceptions of defensive medicine, contrary to objective data, may be biased, and may lead physicians to overstate the frequency of performing defensive medicine.

Introduction:

Defensive Medicine comprises medical actions that deviate from sound medical practice, performed primarily to reduce exposure to malpractice liability or to provide legal protection in the case of a malpractice lawsuit [1-3]. Defensive psychiatry (DP) refers to any action undertaken by a psychiatrist mainly to avoid malpractice liability, rather than for the sole benefit of the patient's mental health and wellbeing [4]. There are two main forms of defensive medical behaviors described in the literature: 1) Assurance behavior ("positive defensive medicine"), which involves ordering diagnostic tests and/or treatments, referrals to other physicians, and additional services of marginal medical value merely to prevent or limit liability. An example in psychiatry would be a patient with suicidal ideation who could and should be treated as an
outpatient, but is hospitalized merely for defensive reasons. 2) Avoidance behavior ("negative defensive medicine") refers to the physician's reluctance to be involved in the treatment of high-risk patients or procedures [2, 4]. An example of this is the reluctance to prescribe medication to pregnant women suffering from affective or anxiety disorders; although, there are clear indications to begin pharmacological treatment.

The practice of defensive medicine places a great economic burden on society; in addition, it is not supported by evidence-based studies and can be harmful due to complications from unnecessary tests and procedures [1, 3, 5-7]. Various studies have tried to evaluate the cost of defensive medicine over the years. Kessler and McClellan [5] showed that defensive medicine is responsible for up to 9% of total health spending. Others showed lower percentages (around 1.5% of the total health expenditure). Mello and colleagues [6] estimated the total annual cost of medical liability in 2008 to be more than 55 billion dollars in the United States. Nonetheless, it is a widespread phenomenon rooted in various fields of medicine. Studdert et al. [2] showed that up to 93% of physicians in a high risk environment practice defensive medicine. Asher et al. [3] demonstrated, in a nationwide survey in Israel, that defensive behaviors are common (up to 60% prevalence) in eight medical disciplines, four of which are not considered to be at high risk for litigation. Another study showed that 97% of obstetricians and gynecologists felt their daily work practice was affected by concerns about being sued for medical negligence [8].

Psychiatry is considered a low risk specialization [9, 10]. However, data from recent years demonstrated that there is a steady increase in complaints of medical negligence, claims of malpractice, and complaints at the state board level against psychiatrists [4, 11]. Some of the allegations made in litigation cases in the field of psychiatry include incorrect diagnosis, incorrect or ineffective treatment, medication errors, improper detention while hospitalized,
doctor-patient boundary violations, and inadequate assessment and management of suicidal patients [4, 10, 12]. Research regarding DP is scarce and mostly limited to suicide assessments.

**Aims of study:** The primary aim of this study was to assess the scope of defensive medicine practiced by Israeli psychiatrists in the public and private sectors. The secondary aim was to understand how one's awareness of defensive practices correlates with applying defensive behaviors and the psychological impact of past malpractice claims.

**Methods**

Two-hundred thirteen Israeli certified psychiatrists and residents in psychiatry volunteered to complete a cross-sectional survey on defensive practices and attitudes. This study was approved by the Israel psychiatric Association and was administered during the Tri-Annual Congress of the Israeli Psychiatric Association on May 2015. The survey was completely anonymous and included an introduction with explanation regarding the nature of the survey and definition for defensive medicine. There is only one previous questionnaire of defensive medicine in the psychiatric literature, reported by Passmore and Leung [13]; therefore, we started with a replication of the previous questionnaire and added more details to examine the scope of DP as well as its application. Our research team consulted with experienced psychiatrists holding academic positions in university medical centers on important topics in the field in order to develop the questionnaire. It was pretested on 17 psychiatry residents (mean age=33.8, SD=3.6) working in public hospitals, who volunteered to participate in the survey. Following the pretest, minor changes were made according to the research team’s suggestions. The survey took approximately 10 minutes to complete.
The final questionnaire asked about demographic data (age, gender, professional position within department, work experience, and work in public and private practices) as well as personal experience with malpractice claims and exposure to medico-legal literature and litigation. To survey the extent of defensive medicine, we asked a direct question: “Do you practice defensive medicine?” Admission of practicing defensive medicine with at least half of the physician's patients was considered as acknowledgment of defensive medicine by the participant. In addition, we asked participants about defensive behaviors in various clinical scenarios. Specifically, we inquired about 13 behaviors in four domains (see Tables 2 & 3). These domains were chosen by our research team to target major issues in the field of psychiatry and day-to-day practice, as well as high-risk cases for medico-legal actions. The four scenarios of possible defensive practice were: (1) treatment of suicidal patients, (2) treatment of pregnant women, (3) initiating or changing drug treatment, and (4) treatment of elderly patients. Participants scored the practice of specific defensive behaviors on a 5-point Likert scale as follows: 5 (“with every patient”), 4 (“with most patients”), 3 (“with half of the patients”), 2 (“with a few patients”), and 1 (“with no patient”). To assess the internal reliability, we calculated Cronbach’s Alpha of the 13 items that measured defensive behaviors, resulting in good internal consistency: $\alpha = 0.67$. Participants were also asked about their feelings (anxious, restless, angry, loss of energy or tired, guilty and mistrustful) and functioning (sleep problems and interference with work, family or social activities) in the period they were involved in malpractice claims.

**Statistical analysis:** Continuous data were analyzed using the t-test for independent samples or Pearson correlation coefficients. Reported p values are two-sided. All analyses were performed using IBM SPSS 21.0 (IBM Corp, 2012) statistical software.
Results

The demographic characteristics of the psychiatrists surveyed are presented in Table 1. In our sample, both sexes were almost equally represented, about three quarters were certified psychiatrists and slightly less than half were in a management position. Most participants (77.9%) worked in a public hospital and more than half (53.5%) had a private practice. Of the 213 psychiatrists, only 48 (22%) were directly involved in malpractice claims. Among them, 44 (91.7%) were certified psychiatrists and four (8.3%) were residents.

Table 1. Demographic characteristics of the sample of Israeli psychiatrists

<table>
<thead>
<tr>
<th>Age</th>
<th>M = 48.00 (SD = 11.82)</th>
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<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>117 (54.9%)</td>
</tr>
<tr>
<td>Female</td>
<td>96 (45.1%)</td>
</tr>
<tr>
<td>Experience</td>
<td></td>
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<tr>
<td>Resident</td>
<td>44 (20.7%)</td>
</tr>
<tr>
<td>Certified</td>
<td>169 (79.3%)</td>
</tr>
<tr>
<td>Department position</td>
<td></td>
</tr>
<tr>
<td>Resident</td>
<td>44 (20.7%)</td>
</tr>
<tr>
<td>Consultant</td>
<td>67 (31.4%)</td>
</tr>
<tr>
<td>Department head</td>
<td>102 (47.9%)</td>
</tr>
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<td>Place of work</td>
<td></td>
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<tr>
<td>Public hospital</td>
<td>166 (77.9%)</td>
</tr>
<tr>
<td>HMO</td>
<td>41 (19.2%)</td>
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<tr>
<td>------------</td>
<td>------------</td>
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<tr>
<td>Private practice</td>
<td>114 (53.5%)</td>
</tr>
<tr>
<td>History of malpractice claims</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>48 (22.5%)</td>
</tr>
<tr>
<td>No</td>
<td>165 (77.5%)</td>
</tr>
<tr>
<td>Reading medical-legal literature &amp; litigation</td>
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<tr>
<td>Yes</td>
<td>104 (48.8%)</td>
</tr>
<tr>
<td>No</td>
<td>109 (51.2%)</td>
</tr>
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There was a small, but significant negative correlation between the age of the participants and acknowledgment of defensive practice ($r = -.14, p = .049$), meaning that there is a tendency in younger participants to admit that they practice defensive medicine. In treating suicidal patients, female psychiatrists were more prone to consult with a senior psychiatrist than male practitioners (females: $M = 3.41, SD = 1.27$; males: $M = 2.85, SD = 1.20$; $t_{(171)} = -2.96; p = .004$) and more prone to refer to another mental health professional (females: $M = 3.28, SD = 0.87$; males: $M = 2.90, SD = 1.13$; $t_{(180)} = -2.59; p = .010$). There were no significant differences in the acknowledgement or practice of defensive medicine when examining the department position, place of work, or reading medical-legal literature. Participants reporting a history of malpractice claims were more prone to acknowledge defensive practice ($M = 3.02, SD = 0.96$) compared with those who did not ($M = 2.60, SD = 0.85$) and this difference was significant ($t_{(192)} = 2.82; p = .005$).

There were significant differences between residents in psychiatry and certified psychiatrists for the practice of defensive medicine (Table 2). Residents acknowledged the
practice of defensive medicine more than experienced psychiatrists \((p = .038)\). For suicidal patients, residents were more prone to advise hospitalization \((p = .017)\) and to consult with a senior psychiatrists \((p < .001)\) than certified psychiatrists. Residents avoided the prescription of drugs to pregnant patients more than experienced psychiatrists \((p = .025)\). For elderly patients treated with antipsychotics, certified psychiatrists explained the risks of cerebrovascular diseases more than residents \((p = .009)\).

Table 2. Defensive medicine: comparison between residents and certified psychiatrists

<table>
<thead>
<tr>
<th></th>
<th>Certified M (SD)</th>
<th>Resident M (SD)</th>
<th>(t)</th>
<th>(df)</th>
<th>(p)</th>
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<tr>
<td>Acknowledgement of defensive practice</td>
<td>2.62 (0.93)</td>
<td>2.90 (0.73)</td>
<td>2.11</td>
<td>196</td>
<td>.038</td>
</tr>
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<td>Defensive behaviors:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>Suicidal patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Advises unwarranted</td>
<td>2.82 (1.09)</td>
<td>3.34 (1.28)</td>
<td>2.46</td>
<td>199</td>
<td>.017</td>
</tr>
<tr>
<td>hospitalization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Increases follow-up</td>
<td>3.51 (1.10)</td>
<td>3.75 (1.04)</td>
<td>1.30</td>
<td>199</td>
<td>.195</td>
</tr>
<tr>
<td>Initiates contact with family</td>
<td>4.05 (0.83)</td>
<td>3.96 (0.87)</td>
<td>-0.51</td>
<td>178</td>
<td>.611</td>
</tr>
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<td>Consults senior psychiatrist</td>
<td>2.84 (1.14)</td>
<td>4.62 (0.75)</td>
<td>10.16</td>
<td>171</td>
<td>&lt;.001</td>
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<td>Refers to another professional</td>
<td>3.03 (1.03)</td>
<td>3.35 (1.06)</td>
<td>1.47</td>
<td>180</td>
<td>.144</td>
</tr>
<tr>
<td>Prescribes medication without indication</td>
<td>1.71 (0.72)</td>
<td>2.00 (0.89)</td>
<td>1.83</td>
<td>180</td>
<td>.069</td>
</tr>
<tr>
<td>Changing or initiating new medication</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Informs about severe yet rare side effects | 3.45 (1.29) | 3.30 (1.27) | -0.69 | 208 | .490
---|---|---|---|---|---
Records that explained about side effects | 3.49 (1.25) | 3.27 (1.28) | -1.02 | 207 | .308
Informs of increased risk of suicidality | 2.74 (1.44) | 2.52 (1.37) | -0.88 | 205 | .380

**Pregnant patients**

Avoids medication altogether | 2.56 (1.04) | 3.09 (1.08) | 2.25 | 186 | .025
Prescribes smaller dosage | 2.44 (1.21) | 2.46 (1.25) | 0.062 | 191 | .950

**Elderly patients**

Informs of cerebrovascular diseases risk | 3.00 (1.30) | 2.37 (1.38) | -2.65 | 191 | .009
Prescribes smaller dosage | 3.95 (0.93) | 3.95 (0.66) | -0.02 | 195 | .986

In our sample 62.1% of participants admitted practicing defensive medicine with at least half of their patients (Table 3), and this was very common in all four surveyed domains. To understand the relationship between acknowledging defensive practice and actually practicing defensive medicine, we computed the correlation between the answer to “Do you practice defensive medicine?” and self-reports of defensive practice behaviors in the four clinical scenarios mentioned above. As shown in Table 3, participants felt they were employing defensive procedures when treating suicidal patients when they advised hospitalization, even if not necessary, or increased the frequency of follow-up visits when not warranted. They also felt that they were practicing defensive medicine when prescribing smaller drug dosages than
required in the treatment of pregnant women and elderly patients. Other behaviors, even if very frequent, were apparently not considered defensive medicine by our subjects; thus, they did not correlate with the acknowledgement of defensive practice.

Table 3. Defensive medicine: frequencies and correlations with acknowledgement of defensive practice and with anxiety

<table>
<thead>
<tr>
<th>Acknowledgement of defensive practice</th>
<th>% of defensive practice or behaviors</th>
<th>Correlation with acknowledgement of defensive practice</th>
<th>Correlation with anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledgement of defensive practice</td>
<td>62.1%</td>
<td>1.00</td>
<td>.30*</td>
</tr>
<tr>
<td><strong>Defensive behaviors:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Suicidal patients</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advises unwarranted hospitalization</td>
<td>54.2%</td>
<td>.34**</td>
<td>.47**</td>
</tr>
<tr>
<td>Increases follow-up</td>
<td>75.6%</td>
<td>.23**</td>
<td>.25†</td>
</tr>
<tr>
<td>Initiates contact with family</td>
<td>93.3%</td>
<td>-.11</td>
<td>.10</td>
</tr>
<tr>
<td>Consults senior psychiatrist</td>
<td>52.6%</td>
<td>.14</td>
<td>.20</td>
</tr>
<tr>
<td>Refers to another professional</td>
<td>65.9%</td>
<td>.01</td>
<td>.17</td>
</tr>
<tr>
<td>Prescribes medication without indication</td>
<td>10.4%</td>
<td>.09</td>
<td>-.03</td>
</tr>
<tr>
<td><strong>Changing or initiating new</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>medication</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>------------------------------------------------</td>
<td>--------</td>
<td>--------</td>
<td></td>
</tr>
<tr>
<td>Informs about severe yet rare side effects</td>
<td>72.9%</td>
<td>-.10</td>
<td></td>
</tr>
<tr>
<td>Records that explained about side effects</td>
<td>74.2%</td>
<td>.06</td>
<td></td>
</tr>
<tr>
<td>Informs of increased risk of suicidality</td>
<td>47.3%</td>
<td>-.01</td>
<td></td>
</tr>
</tbody>
</table>

### Pregnant patients

| Informs of cerebrovascular diseases risk       | 55.4%  | -.06   |
| Avoids medication altogether                    | 46.8%  | .05    |
| Prescribes smaller dosage                       | 45.6%  | .27**  |

### Elderly patients

| Prescribes smaller dosage                       | 91.9%  | .23**  |

** p < .001
† p < .10

Of the 58 participants who reported how they were affected by malpractice claims, 36 felt anxious, 33 angry, 26 restless, 16 distrustful, 14 guilty, 14 reported loss of energy or fatigue, 16 had sleeping problems, and 11 reported impaired functioning in work, family relations or social activities. As anxiety and anger were the most reported psychological symptoms, we further calculated Pearson correlation coefficients between levels of anxiety or anger and measures of defensive behavior and defensive practice. We found positive associations between the level of anxiety and acknowledging defensive practice, advising hospitalization in suicidal patients, and
avoiding drug prescription in suicidal patients. We also found an almost significant trend between levels of anxiety and increased follow-up in suicidal patients and telling the patient about increased suicidal symptoms before starting selective serotonin reuptake inhibitors (Table 3). The only significant correlation with anger was advising hospitalization in suicidal patients ($r = .37 \ p = .006$).

**Discussion**

This is the first study to describe defensive medicine among psychiatrists that not only reports on the extent of the phenomenon, but also identifies specific actions taken by psychiatrists to avoid malpractice liability.

This study demonstrates that defensive medicine is a well-rooted common practice among psychiatrists as the prevalence of defensive medicine was 62.1%. These results are similar to a prior study done among psychiatrists in the UK, focusing on four specified actions: admitting patients to the hospital when their condition could be managed as an outpatient, placing patients on a higher level of observation than warranted, writing in patients’ records specific remarks such as “not suicidal”, and dictating letters more than necessary for managing the patient’s illness. Overall, three quarters of psychiatrists have performed at least one of the four actions within the past month [13]. Together with our study, these results are surprising, especially in light of previous reports asserting that psychiatry is a low risk specialty [9]. A recent study portrayed psychiatry as responsible for only 1% of compensations paid during the period of the study (2005-2014), with the lowest risk of recurrence of lawsuits [14]. Nevertheless, Jena and colleagues [9] reported an annual probability of 2.6% for psychiatrists
being sued in the United States. Data also show that the proportion of physicians facing malpractice claims in low risk specialties is about 36% by age 45, and rises up to 75% at age 65.

Another interesting finding was the tendency of younger psychiatrists to report defensive behaviors and practice defensive medicine (Table 2), despite that complaints of malpractice typically characterize older psychiatrists. Martin-Fumadó et al. [12] reported that, among Spanish doctors, the mean time from specialization to motivating a claim was 12 years. Similarly, Reich et al. [10] reported that the risk of disciplinary action increased with the years of practice. This recognition of defensive medical practice among young doctors may be unique to psychiatry, as studies of defensive medicine in other specialties failed to show correlation with age [8]. In the US, a study regarding defensive medicine among high-risk specialist physicians showed that being in practice for over 30 years is a risk factor for practicing defensive medicine [2]. Regarding psychiatry specifically, Passmore and Leung [13] demonstrated there is a higher propensity of junior trainees to admit patients to the hospital and to place patients on higher levels of observation than is necessary. A US study found that walk-in psychiatric patients are more likely to be admitted if treated by a less experienced psychiatrist (first or second year residents) compared with more experienced staff (third year residents and attending physicians) [15].

We did not find any gender differences in the acknowledgment of defensive practice; however, in treating suicidal patients, female doctors consulted more often with a senior psychiatrist than males, and were also significantly more prone to refer to another mental health professional. This finding is noteworthy, especially in light of a recent review that found male doctors have nearly 2.5 times the odds of medico-legal actions compared with female doctors [16]. Studdert et al. [14] reported that 82% of paid malpractice claims involved male physicians.
It is of note that the only gender differences in defensive practices were items related to seeking
support from seniors or colleagues. This might reflect differences in gender attitudes in the
practice of the profession more than defensive medicine per se, but there is a lack of literature in
the field; thus, more research is required.

Beyond describing the scope of the phenomena of DP, we aimed to understand how one's
awareness of practicing defensive medicine was related to actually applying defensive behaviors
(Table 3). We considered the psychiatrist’s answer to the question “Do you practice defensive
medicine?” as evidence of conscious practice of defensive medicine, as previous studies have
done [17]. However, reporting specific behaviors in different scenarios is not necessarily
conscious or unconscious behavior. We aimed to ascertain conscious versus unconscious
behavior by calculating the correlation between the answer to the previous question and self-
reports of defensive practice behaviors in the four clinical scenarios. We assumed that a positive
correlation between the self-acknowledgment of defensive practices and any specific behaviors
(for example increasing follow-up with suicidal patients) is good evidence that participants are
conscious of practicing defensive medicine (the more they admit defensive medicine the more
they increase follow-up). Conversely, no correlation implicates that they do not consider that
behavior as practicing defensive medicine, for example prescribing medication without
indication to suicidal patients is apparently an unconscious defensive practice because it was not
associated with self-acknowledgment of defensive medicine.

As expected, psychiatrists that were directly involved in malpractice claims were more
prone to acknowledge defensive practice, as seen in other studies of defensive medicine in
psychiatry [13] and other medical specialties [3]. When treating a suicidal patient, most
physicians reported practicing defensive behaviors on the questionnaire, except for prescribing
medication without indication. Interestingly, only two items, “advising hospitalization even if unwarranted” and “increased frequency of follow-up even if not necessary”, were significantly correlated with acknowledgement of practicing defensive medicine and higher levels of anxiety concerning malpractice claims. Psychiatrists cannot always predict or prevent patient suicide, even if they provide the best medical care possible [18]. Nonetheless, the consequences of not preventing such an act hold a tremendous risk for malpractice liability [19]. This inherently affects the considerations and treatment decisions made by the treating psychiatrist, who mostly utilizes "positive" defensive medicine and assurance behaviors. Paradoxically, a referral to unnecessary hospitalization can lead to complaints about improper detention, one of the main reasons for lawsuits in this field [10]. This again raises the question whether defensive medicine is effective in preventing the physician's malpractice liability. Moreover, only these two defensive behaviors were recognized as defensive medicine and not, for example, the referral of the suicidal patient to another professional. This finding led us to question to what extent psychiatrists are aware of their defensive practices.

When examining the relationship between acknowledgment of defensive practice and treatment of pregnant women, we found that psychiatrists prescribe smaller dosages of medication than is customary. They may not recognize that they are practicing defensive medicine when avoiding prescribing proper dosages to these patients. However, psychiatrists who experience more anxiety about malpractice claims avoid giving pregnant women medication altogether, implying that this behavior is indeed related to defensive medicine. This practice raises special concerns as it is known that untreated depression or anxiety during pregnancy may negatively impact both the mother and fetus, and residual depression due to inefficient dosage of
psychotropic treatment may result in dual exposures for the fetus to both medication and untreated depression [20].

Prescribing smaller drug dosages than customary was also evident in the treatment of elderly patients. Certified psychiatrists, more often than residents, attributed this to the propensity of antipsychotic drugs to cause cerebrovascular diseases. This practice correlated with acknowledgment of defensive medicine, but not with higher levels of anxiety. These reported prescribing habits are in accordance with the FDA black box warning and guidelines from 2005 and may represent not only malpractice concerns, but rather a more clinical standpoint in treating this population.

One alarming finding is that 10.4% of participants in the survey state they prescribe medication without indication. As it has no significant correlation with acknowledgement of defensive practice or anxiety, we concluded this may be an expression of unconscious defensive behavior. Though there may be other, patient as well as doctor-specific, factors that influence whether or not to prescribe medication. Bradley [21] demonstrated in his study that 44.3% of doctors that reported they were prescribing medication in order to preserve the doctor-patient relationship experience discomfort. This was described in terms of avoiding litigation or complaints, but also as avoiding damage to the doctor-patient relationship, avoiding conflict and "keeping the peace".

Finally, the study showed that among participants of the study malpractice claims raised distressful feelings suggesting they are the “second victims”, meaning they, the caregivers, may be extremely distressed by the mistakes they have done (22). Furthermore, the caregiver subjected to legal proceedings may experience the “clinical judicial syndrome” (CJS) that comprises of a series of physical, psychological and behavioral symptoms (23). The associations
between levels of anxiety or anger after malpractice complaints among study participants, and measures of defensive behaviors and defensive practices are in line with Pellino and Pellino's (24) assertion that defensive medicine, the concept of “second victim” and CJS are indeed an intertwined phenomena.

**Limitations:** The survey was voluntary, therefore it is possible that physicians who agreed to participate were more prone to acknowledge practicing defensive medicine thus biasing the results. Furthermore, physicians were recruited among attendants to a psychiatric congress, which may limit the generalization of the findings. This study described psychiatrists’ perceptions of defensive medicine and not objective data that may describe this phenomenon. Self-reports of defensive medicine may be biased, and may lead physicians to overstate the frequency of performing defensive medicine. Objective methods for measuring defensive medicine are extremely difficult to employ [1, 3]. It is often difficult to identify the difference between liability-related motivation and other factors that influence clinical decision making. For example, in this study, practices that could be viewed as defensive medicine, such as “initiate contact with the family of a suicidal patient” and “inform of severe yet rare side effects of new drug treatment”, characterized a high percentage of doctors, but were not correlated with defensive medicine or anxiety levels. These clinical decisions might reflect the policy of the institution where the physician works, the personal attitude of the physician, a less patriarchal standpoint that sees the patient’s right to decide about their treatment, and more.

There is no available data on the respondent’s annual incomes and malpractice premiums. In Israel premium is paid by the employer as part of the national work contracts with the Israeli...
Medical Association. Thus, since this is not "out of pocket money", both these factors probably do not influence the daily practice of defensive medicine in our cohort.

Conclusions

Defensive medicine is well-established in routine clinical psychiatry, despite that this specialty has a low risk for malpractice lawsuits. Coping with the defensive medicine is a challenging task. Although there are several suggested strategies, evidence is lacking and there is not one efficient solution to resolve this issue [25]. Any solution should include changes in both the physician's, as well as the patient's, perspective and behavior. This may include giving more information to the public regarding the recommended care and relevant diagnostic and treatment options in clinical situations prone for defensive medicine. Also developing and applying clinical practice guidelines targeting risky clinical situations may aid doctors when faced with difficult situations. Finally, making reforms in the liability and compensation systems available today may be a way to preserve the beneficial effects of defensive medicine while diminishing its hazardous effects. Further studies are necessary to determine if the putative effect of defensive medicine impedes high quality clinical psychiatric care of patients, to examine the economic burden of DP on health care providers and explore different strategies to cope with this troubling phenomenon.
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Author's Statements

All authors contributed extensively to the work presented in this paper.

I.R and I.P. designed the study, conducted data collection and wrote the manuscript; H.R conceived the study and edited the prepared manuscript; O.B. supervised the data collection and analysis and edited the manuscript; L.C. performed the statistical analysis, interpreted the data and wrote the manuscript.

Supporting data is available upon request: please contact the corresponding author

reueni@hadassah.org.il

We have read and understood BMJ policy on declaration of interests and declare that we have no competing interests.
References


Defensive Medicine in the Field of Psychiatry

The Department of Psychiatry in Hadassah Hebrew University Medical Center and the Faculty of Health Sciences in Ben Gurion University are conducting a survey on “Defensive Medicine in the field of psychiatry in a time of increasing malpractice claims”.

Defensive Medicine refers to any diagnostic or treatment measures undertaken mainly in order to avoid malpractice claims. According to previous studies in Israel, defensive medicine is very common among Israeli physicians. This practice may have significant implications on the quality of medicine practiced in Israel. Yet, no research has been done on this topic among Israeli psychiatrists.

The objectives of the present survey is to evaluate the influence of Defensive Medicine on decision making in daily practice of psychiatrists. If you work with children and the question is not relevant for your practice, please indicate this between brackets.

We will be glad if you agree to help us by filling out the questionnaire. The survey is anonymous, and although formulated in masculine gender it is intended for men and women as well.

Thank you for your cooperation.

2. Age __________
                    How many years after certification? ________

Do you practice defensive medicine in your daily practice?

1. With no patient   2. In a few patients   3. With half of the patients   4. With most patients  5. With every patient

The following questions refer to the history of malpractice claims:

1. Did anyone of your patients / patients’ family members file a complaint against you to the director of the institution where you work?    Yes / No
2. Were you ever involved in a case of medical negligence that could have led to a malpractice claim?    Yes / No
3. Do you read medical-legal literature and litigation?    Yes / No
4. If yes, to which extent does it affect your decision-making in daily clinical practice?
   1. Not at all    2. To a certain extent    3. To a great extent    4. Very much
The following questions refer to the treatment of suicidal patients:

1. Do you advise psychiatric hospitalization to a suicidal patient even if not warranted according to his/her mental state?
   1. With no patient  
   2. In a few patients  
   3. With half of the patients  
   4. With most patients  
   5. With every patient

2. Do you increase follow-up of a suicidal patient even if it is not warranted according to his/her mental state?
   1. With no patient  
   2. In a few patients  
   3. With half of the patients  
   4. With most patients  
   5. With every patient

3. Do you initiate contact with family member or other support networks?
   1. With no patient  
   2. In a few patients  
   3. With half of the patients  
   4. With most patients  
   5. With every patient

4. Do you consult with a senior psychiatrist / head of the department?
   1. With no patient  
   2. In a few patients  
   3. With half of the patients  
   4. With most patients  
   5. With every patient

5. Do you usually refer these patients to another professional (psychologist / social worker)?
   1. With no patient  
   2. In a few patients  
   3. With half of the patients  
   4. With most patients  
   5. With every patient

6. Do you prescribe medication even if there is no clear indication?
   1. With no patient  
   2. In a few patients  
   3. With half of the patients  
   4. With most patients  
   5. With every patient

The following questions refer to initiating or changing a patient's medication:

1. When initiating a new medication do you inform your patient about severe yet rare side effects?
   1. With no patient  
   2. In a few patients  
   3. With half of the patients  
   4. With most patients  
   5. With every patient

2. Do you usually record having explained to the patient about the side effects before initiating new medication?
   1. With no patient  
   2. In a few patients  
   3. With half of the patients  
   4. With most patients  
   5. With every patient

3. Do you inform your patient about increased risk of suicidality after initiating treatment with SSRI's (as stated by FDA black box warning)?
   1. With no patient  
   2. In a few patients  
   3. With half of the patients  
   4. With most patients  
   5. With every patient
The following questions refer to the treatment of pregnant women:

1. Do you avoid prescribing medication for pregnant women altogether?
   1. With no patient  2. In a few patients  3. With half of the patients  4. With most patients  5. With every patient

2. If you decide to initiate new medication for a pregnant patient do you prescribe smaller dosages than customary?
   1. With no patient  2. In a few patients  3. With half of the patients  4. With most patients  5. With every patient

The following questions refer to the treatment of elderly patients:

1. When you initiate antipsychotic treatment in an elderly patient do you inform the patient or his/her family member about increased risk of cerebrovascular events?
   1. With no patient  2. In a few patients  3. With half of the patients  4. With most patients  5. With every patient

2. If you decide to prescribe a new medication to an elderly patient do you prescribe smaller dosages than customary?
   1. With no patient  2. In a few patients  3. With half of the patients  4. With most patients  5. With every patient

If you were involved in the past in a case of a malpractice claim, during the period the claim was filed, did you feel any of the following?

8. Impaired functioning in work, family relations, or social activities:
   1. Not at all  2. Slightly  3. To a certain extent  4. Very Much
### STROBE 2007 (v4) Statement—Checklist of items that should be included in reports of cross-sectional studies

<table>
<thead>
<tr>
<th>Section/Topic</th>
<th>Item #</th>
<th>Recommendation</th>
<th>Reported on page #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title and abstract</td>
<td>1</td>
<td>(a) Indicate the study’s design with a commonly used term in the title or the abstract</td>
<td>Page 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) Provide in the abstract an informative and balanced summary of what was done and what was found</td>
<td>Page 2</td>
</tr>
<tr>
<td>Introduction</td>
<td>2</td>
<td>Explain the scientific background and rationale for the investigation being reported</td>
<td>Pages 3-5</td>
</tr>
<tr>
<td>Objectives</td>
<td>3</td>
<td>State specific objectives, including any prespecified hypotheses</td>
<td>Page 5 –Our aims were stated but we did not write prespecified hypotheses due to the paucity of literature on the subject</td>
</tr>
<tr>
<td>Methods</td>
<td>4</td>
<td>Present key elements of study design early in the paper</td>
<td>Page 5</td>
</tr>
<tr>
<td>Study design</td>
<td>5</td>
<td>Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection</td>
<td>Page 5</td>
</tr>
<tr>
<td>Setting</td>
<td>6</td>
<td>(a) Give the eligibility criteria, and the sources and methods of selection of participants</td>
<td>Pages 5-6</td>
</tr>
<tr>
<td>Participants</td>
<td>7</td>
<td>Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable</td>
<td>Pages 7-13</td>
</tr>
<tr>
<td>Variables</td>
<td>8</td>
<td>For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group</td>
<td>Page 6</td>
</tr>
<tr>
<td>Data sources/ measurement</td>
<td></td>
<td></td>
<td>Not applicable (discussed in the limitations section page 18)</td>
</tr>
<tr>
<td>Bias</td>
<td>9</td>
<td>Describe any efforts to address potential sources of bias</td>
<td></td>
</tr>
</tbody>
</table>
Study size 10 Explain how the study size was arrived at Not applicable

Quantitative variables 11 Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why Page 7

Statistical methods 12 (a) Describe all statistical methods, including those used to control for confounding Page 7

(b) Describe any methods used to examine subgroups and interactions Page 6

(c) Explain how missing data were addressed Table 2 (df)

(d) If applicable, describe analytical methods taking account of sampling strategy Not applicable

(e) Describe any sensitivity analyses Not applicable

Results

Participants 13* (a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed Page 5

(b) Give reasons for non-participation at each stage Not applicable

(c) Consider use of a flow diagram Not applicable

Descriptive data 14* (a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders Page 7

(b) Indicate number of participants with missing data for each variable of interest Pages 9-10 and table 2

Outcome data 15* Report numbers of outcome events or summary measures Pages 9-10 and table 2

Main results 16 (a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included Results pages 7-13, otherwise not applicable

(b) Report category boundaries when continuous variables were categorized Not applicable

(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period Not applicable

Other analyses 17 Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses Not applicable

Discussion

Key results 18 Summarise key results with reference to study objectives Page 13

Limitations 19 Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias Page 18

Interpretation 20 Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from Page 19
<table>
<thead>
<tr>
<th>Generalisability</th>
<th>21</th>
<th>Discuss the generalisability (external validity) of the study results</th>
<th>Page 18-19</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Other information</strong></td>
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</tr>
<tr>
<td><strong>Funding</strong></td>
<td>22</td>
<td>Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based</td>
<td>Page 20</td>
</tr>
</tbody>
</table>

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

**Note:** An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.
Cross-sectional survey on defensive practices and defensive behaviours among Israeli psychiatrists

I Reuveni, I Pelov, H Reuveni, O Bonne and L Canetti

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