Are the Mentally Ill Dangerous?

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The author reviews studies that address the question, "Are the mentally ill dangerous?" She points out that as psychiatrists, we have the responsibility of evaluating the mentally ill and making judgments about their dangerousness that may restrict their civil liberties. Therefore, the more practical question for us is: "Which mentally ill, under what circumstances, are dangerous?" She discusses data from her research group and others that show that short-term predictions of violence can be relatively accurate, that we are better at predicting violence for some patients than for others, that specific symptom patterns in the acute phase of illness are related to violent acts, that the most likely victims of violence by decompensating psychiatric patients are caretakers rather than strangers, and that a history of violence, co-morbid substance abuse, and treatment noncompliance are related to a higher risk of violence in psychiatric patients.

A personal friend, whom I will call Mary, lives in an upper middle class area of San Francisco. She has been involved in public hearings trying to prevent the establishment of a halfway house for the mentally ill next door to her house. Mary is personally frightened about the safety of her children were the halfway house to be opened. She called me and asked if her fears were rational.

This article will review studies that address the issues raised by Mary's inquiry. At the end of the paper, I will tell you what I said to Mary.

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Background

Historical Perspective People have wondered for centuries whether the mentally ill are dangerous. In a fascinating article written by Dr. John Monahan[1] a few years ago, he points out that the relationship between mental illness and dangerousness was addressed in Greek and Roman literature. For example, Plato, in *Alcibiades II* describes a conversation between Alcibiades and Socrates where they are discussing whether many citizens in Athens are "mad." Socrates says: "How could we live in safety with so many crazy people? Should we not long ago have paid the penalty at their hands, and have been struck and beaten and endured every other form of ill usage which madmen are wont to inflict?" In addition, Aristotle in *Nicomachean Ethics* notes that madness could be the cause of bizarre murders. Also, Plutarch in *Pompey* says

that those who were mentally deranged were likely to throw stones or exhibit other kinds of aggressive behavior when agitated. In addressing this issue further, the Roman philosopher Philo Judaeus divided the mentally ill into two groups: those with an easygoing gentle style and those whose madness was of the fierce and savage kind, which is dangerous to the madmen themselves and to those who approach them.

Moving forward in history to colonial America, this relationship was noted in 1751 by Benjamin Franklin. He stated that a mental hospital in Pennsylvania was necessary to contain the mentally ill because: "Some of them going at large are a terror to their neighbors, who are daily apprehensive of the violence they may commit" (as quoted by Monahan).[1]

Twentieth Century Studies Interest in exploring the relationship between mental illness and dangerousness continued into the twentieth century. Studies of the 1920s through 1940s found that mentally ill persons had a lower arrest rate than the general population.[2] Therefore, it was claimed that mentally ill individuals were no more dangerous than other people. In addition, in 1983, Drs. Henry Steadman and John Monahan[3] reviewed over 200 studies on the association between mental disorder and crime. They reported that when appropriate statistical controls were applied for factors such as age, gender, race, social class, and previous institutionalization, whatever relations had been noted between crime and mental disorder tended to disappear. Drs. Monahan and Steadman subsequently modified their opinion.

More recently, epidemiologic studies have addressed the issue of the mentally ill and dangerousness. For example, the National Institute of Mental Health epidemiologic catchment area (ECA) survey looked at 10,000 adults from a representative sample of adult households in 1980 to 1983 in several cities, using structured interviews.[4, 5] This epidemiologic data showed that having a major mental illness (schizophrenia, major affective disorder), substance abuse only, or a major mental disorder and substance abuse combined were each significantly related to a self-report of violence in the last year. Being male, young, and of lower socioeconomic status increased the risk substantially, apart from psychiatric illness.

Moreover, Link and others[6, 7] analyzed data from a project using the Psychiatric Epidemiology Research Interview. They found higher (two to three times as high) rates of violence (measured by self-reports and arrests) in a sample of mental patients compared with residents of the same community in New York City.

Many reports in the press have served to reinforce the perception that the mentally ill are violent. For example, newspaper articles have highlighted recent tragedies such as the murder committed by a schizophrenic Yale Law School graduate and the Capitol Hill murders committed by a schizophrenic man.[8, 9]

The question about whether or not mental illness is associated with dangerousness is important for several reasons. First, there are social implications to the question, especially involving stigma against the mentally ill. One of the most vivid examples of stigma comes from the

following article written for the *Journal of the California Alliance for the Mentally Ill.*[10]

> When Libby Cowan's 37-year-old son, Tom, was having a heart attack at the Long Beach Veterans Administration Hospital, the cardiologist was fearful of transferring him to the Coronary Care Unit. He knew that Cowan was a mental patient with a diagnosis of paranoid schizophrenia. He had been told that Cowan once struck a nurse, and had been in restraints, shackled to his bed; hardly the kind of risk to bring into the fragile environment of the CCU. And so, Libby Cowan stood by helplessly as VA doctors allowed her son to have one heart attack after another and denied him the benefit of life saving procedures. Tom Cowan died.

Another example of stigma is illustrated in the personal vignette that began this article. There are politically conservative members of the community who would use the fear of dangerousness as a means of denying the mentally ill access to housing in certain neighborhoods.

Second, there are clear legal implications related to this question. In terms of civil commitment, society and the legal system need to address whether and when the mentally ill should be institutionalized because they pose a danger to society. Civil commitment laws have generally mandated that the mentally ill be released from institutions when they are no longer acutely dangerous. There are those who argue that civil commitments should be much longer and that patients should be kept in hospitals and medicated involuntarily on an ongoing basis to prevent future violence. In fact, the supporters of this approach state that there is more violence in the community now compared with the first part of the century because of deinstitutionalization and increased civil liberties for the mentally ill that allow refusal of medications.

In addition, there are legal issues related to incarceration of the mentally ill offender. An often quoted statistic is that on an average day 200,000 people behind bars (10% of total prisoners) are known to suffer from schizophrenia, bipolar disorder, or major depression (four times the rate in the general population)[11] Is this the result of the change in commitment laws? Are these prisoners "mad" or "bad"?

There are also issues related to malpractice actions. Are the mentally ill dangerous? The courts since *Tarasoff* have imposed a duty to protect. How do we decide whom to admit to hospitals and especially whom to discharge? If the wrong decision is made, there is the risk of malpractice litigation (as well as potential harm to victims).

In thinking about the question of whether the mentally ill are dangerous, it seems clear that recent epidemiologic studies suggest that this may be true (depending on whom the mentally are compared with), and there are certainly individual cases of mentally ill individuals who have been violent. However, it seems clear that the question "Are the mentally ill dangerous?" may not be the most relevant research question for mental health professionals. Society requires the mental health system to evaluate and manage the mentally ill. We are not responsible for all dangerous people (e.g., drunk drivers). We are responsible for people who are identified as mentally ill and potentially violent. Because we have the responsibility to evaluate the level of dangerousness in this population, the

most relevant and practical question for us is: which mentally ill are violent? Who should be admitted to a hospital? When should we make a "Tarasoff" warning to a potential victim because there is serious risk of harm? When are patients safe enough to be discharged?

Research

The research of the team with whom I have worked for the last 15 years has focused on the question of which mentally ill persons are violent. First, we had to decide how to measure dangerousness or violence. In the earlier epidemiologic studies, violence was assessed through arrest records and/or self-reports. The MacArthur Violence Risk Assessment study group measured violence by self-report, reports of collateral informants, and official agency records.[12] Each of these data sources carries the risk of unreliability and their interpretations are complicated when they give conflicting information.

Another methodologic question that needed to be answered to focus our research efforts was what setting should be used. Violence by the mentally ill is influenced by situational factors (i.e., mentally ill individuals may be more or less violent in different settings and under different circumstances). We decided to examine the research question of which mentally ill patients are violent by studying the acutely mentally ill in a variety of settings (prior to hospitalization, in emergency rooms, and during acute hospitalization). These are the patients that come to the attention of mental health clinicians, who are asked to assess their risk of violence. The rate of violence among the mentally ill peaks around the time of hospital admission.[12] Also, recent reports describe that 10 to 17 percent of patient visits to psychiatric emergency services are occasioned by concern about homicidal thoughts.[13] Therefore, it is crucial to understand as much as we can about which patients are likely to become violent, to make informed admission and discharge decisions and also to protect mental health clinicians and patients and families/caretakers from violence. Measuring violence on an inpatient unit has huge methodologic advantages. First, there is close to 100 percent participation, because official records are generally filled out on all patients. Second, in measuring violent acts, there is no need to rely on self-reports, agency reports, police reports, or collaterals. In studying inpatient violence on a relatively small, well staffed unit, reports about violence can be tallied on a shift by shift basis, and there is minimal controversy about whether violence did or did not occur.

However, measurement of violence on an inpatient unit also has potential limitations. For example, the question can be raised whether inpatient violence is representative of community violence. Perhaps on an inpatient unit violence may be provoked, or conversely, violence may be diminished in a structured setting. Therefore, we did an early study to see whether inpatient violence was representative of community violence, defined as occurring within the two weeks prior to hospitalization. We found a significant correlation between pre-admission violence and violence during the first 72 hours of

hospitalization. Patients who were violent in the community were more likely to be violent in the hospital.[14] (It appears that patients who are hospitalized after violent acts are more likely to continue to be violent in the hospital until their most acute symptoms are decreased by treatment.)

Accuracy of Judgments About Dangerousness One issue that our research tried to address was: when are clinicians able to make accurate judgments about dangerousness? A 1983 American Psychiatric Association *Statement on Prediction of Dangerousness* says: "Studies show that even with patients in which there is a history of violent acts, predictions of future violence will be wrong for two out of every three patients."[15] In the *Tarasoff* case, *amici curiae* representing the major organizations of psychiatrists, psychologists, and social workers argued that therapists cannot accurately predict violent acts.[16] Our clinical experience on an acute inpatient unit seemed to be at variance with these pronouncements. Therefore, we looked at this question on our unit.

We first looked at the situation of emergency civil commitment. When clinicians decide to institute a 72-hour civil commitment, they make judgments about whether patients are a danger to others, a danger to themselves, or gravely disabled. Our question was: are these judgments accurate? Therefore, we compared the group of patients admitted on the basis of being a danger to others with the group of patients admitted under the other criteria and looked at assault-related events for each 24-hour period following admission (physical assault, seclusion for dangerousness, four-point restraints for dangerousness, verbal assaults).

We found that patients hospitalized on the basis of a judgment that they represented a danger to others engaged in more violent behavior in the first 72 hours of hospitalization than involuntary patients not judged to be dangerous. This difference was both statistically and clinically significant. However, emergency commitment based on danger to others predicted inpatient violence only in the short term. By the third day after commitment, the proportion of violent patients was no higher in the group committed as dangerous to others than in the control group. This is likely because psychotropic medications and ward structure were able to decrease the likelihood of violence. By the third day, neither group engaged in much violent behavior.[17]

Thus we started to see that, in the inpatient setting, short-term predictions of violence may have a higher rate of accuracy than the prior literature suggested. Previous conceptions about the inability to predict violence were mainly based on long-term predictions about violence in the criminal and criminally insane population (e.g., Ref. 18).

We then developed more systematic ways for staff to record their assessments of risk of violence and also began the routine use of the Overt Aggression Scale to record violence on each nursing shift. In a subsequent study, we again examined whether clinicians are able to make accurate judgments about violence risk in the specific setting of an inpatient unit. We asked nurses and physicians to record their

routine violence risk assessments in a structured way when they admitted patients.

With the methodology of routine violence risk assessments, we were able to show that patients who were evaluated on admission as having a higher probability of physically attacking someone were over-represented in the group of patients who later became assaultive. The probability estimates overpredicted inpatient attacks.[19] But when we looked at the occurrence of *any* aggressive behavior, the frequencies were similar to the probability estimates. This may be because staff intervened with these patients to prevent actual physical attacks. Thus, we again showed that short-term assessments of violence risk in acute psychiatric patients were more accurate than the pessimistic view previously described.

In a related study,[20] we tried to fine-tune the issue about the accuracy of judgments of dangerousness. Are there certain patients for whom our judgments might be more or less accurate? Perhaps we had been oversimplifying things by talking about accuracy of violence risk assessments in a general way. What we found was that systematic errors characterize inaccurate assessments of the risk of violence. For example, clinicians overpredicted violence in nonwhite patients and underpredicted violence in women; we often think nonwhite patients will be violent, but they are not, and we think women will *not* be violent, but they *are* (and we need to be aware of that possibility and take adequate safety precautions).

We also looked at the issue of "confidence" in determining the accuracy of judgments. Clinical experience suggests that for different patients, we have different degrees of confidence in our risk assessments. We are required to make violence risk assessments (e.g., when we admit or release patients), but we have different degrees of certainty for different patients. For some patients, we really do not know whether they will be violent, and for other patients we are fairly certain that there is a high or low risk of violence. We evaluated this question by asking all of our clinicians to rate their confidence in their risk assessments at the same time as they were doing them. We did find that confidence correlates with accuracy.[21]

Factors Associated with Pre-Admission Violence and/or Inpatient Violence

Another area of our research was related to determining factors associated with either pre-admission violence and/or inpatient violence. The ECA study on community violence[4, 5] described demographic factors as being associated with violence (e.g., being young, male, and in the lowest socioeconomic class). It also identified certain diagnoses as being associated or not associated with violence (e.g., anxiety disorders had a lower rate of violence than schizophrenia). Substance abuse, together with major mental disorder, was associated with the highest rate of violence. The recently published study by the MacArthur group[12] also found a diagnosis of major mental disorder plus substance abuse to be associated with violence in the community (after a psychiatric hospitalization). A history of violence had previously been shown to be the best predictor of violence in psychiatric and nonpsychiatric patients.[22]

Our research group looked at violent

behavior in a different setting with a different subgroup of patients. We looked at violent behavior in the two weeks prior to a psychiatric hospitalization and violent behavior on the inpatient service.[14] We examined the patient characteristics associated with violent behavior in each setting. We found considerable consistency in characteristics across settings except for gender and diagnosis. Men were more likely than women to engage in fear-inducing behavior (e.g., threats and attacks on objects) and physical attacks in the community. In the hospital setting, men continued to be over-represented in the group of patients exhibiting fear-inducing behavior, whereas women were over-represented in the physically assaultive group. In addition, both schizophrenic and manic patients were over-represented in the group who were physically assaultive in the community, but manic patients were most likely to be physically assaultive in the hospital. Thus, we were starting to see that there may be different diagnoses and different demographic characteristics associated with violence in different settings.

Subsequently, we started to think that maybe the diagnosis was not the most important factor in the inpatient setting, but rather it was the stage of illness. Acute symptoms fluctuate during the course of mental illnesses. When illnesses are in an active phase, there is a greater likelihood of violence. The community study of Link and colleagues[6, 7] found that the presence of active psychotic symptoms was the only variable that accounted for the difference in rates of violence between the patients and never treated community residents. Family members of the mentally ill have also noted that the risk of violence varies with the stage of illness. For example, the former president of the National Alliance for the Mentally Ill, whose son attacked a family member, stated: "Those of us who have lived with mentally ill family members have observed the cyclic nature of the illness, which impairs judgment."[23]

In the late 1980s and early 1990s, our research group looked at the relationship between acute psychiatric symptoms and hospital assaults.[24] We completed an admission Brief Psychiatric Rating Scale on each patient and then looked at whether or not the patient exhibited violent behavior on the inpatient unit. We used a diagnostically heterogeneous population. We found that symptoms were predictive of violence (especially high levels of thinking disturbance, hostility-suspiciousness, and agitation-excitement). When we looked at these symptom clusters within specific diagnoses,[25] we found that these symptoms were especially predictive of violence in nonschizophrenic patients, perhaps because we intervene more quickly to decrease violence potential in hostile and paranoid schizophrenic patients.

I do not mean to conclude that diagnosis is irrelevant to violence risk. A patient with paranoid schizophrenia may be more likely to commit violence than a patient with a panic disorder. However, it seems that symptoms are a better marker for violence potential than diagnoses *per se*.

Thus, we have specific acute symptoms patterns being associated with violence. Noncompliance with treatment is also as-

sociated with an exacerbation of symptoms and an increased potential of violence.[26, 27]

How do we put the above findings about acute symptoms and noncompliance together with the findings of the Swanson epidemiologic studies[4, 5] and the MacArthur studies[12] about the correlation of substance abuse with violence? It may be that noncompliance, acute symptoms, and substance abuse are correlated with each other (e.g., if a patient is abusing drugs or alcohol, he or she will likely be noncompliant and also have symptom exacerbation).

Victims of Violence The final area of our research relates to determining who are the likely victims of violence by psychiatric patients who are admitted to hospitals. Our findings in the inpatient context were recently supported by those of the MacArthur group[12] in their community sample (the most likely victims are family members). For example, in one study, we looked specifically at violent geriatric patients who needed psychiatric hospitalization[28] and found that the most frequent targets of violence by elderly patients were family members.

In another study in the mid-1980s,[29] we reviewed the records of a heterogeneous group of psychiatric patients to determine whether and who they had assaulted within two weeks of admission. Fifteen percent of the patients had assaulted someone. Fifty-four percent of these violent patients had assaulted a family member, usually someone with whom they were living. In a subsequent study in the 1990s,[30] we reviewed almost 600 charts of patients who were admitted to the inpatient service. Nineteen percent of them had physically attacked someone within the two weeks prior to admission. Family members are the most frequent victims of such attacks. The caretaking role rather than the type of kinship relationship with the patient seemed to be the most important factor in determining which family member became the victim.

The fact that the role relationship is one of the determinants of who will be victimized is consistent with another study that we did in the 1990s, in which we looked at who was the most likely victim of an assault on an acute inpatient unit—women or men, nurses or physicians?[31]

Our study group found that women were more likely to be assaulted than men. However, in our facility, proportionately more nurses than physicians were women. When we controlled for discipline, the gender effect disappeared. Nurses as a group were significantly more likely to be assaulted than doctors. This finding probably relates to nurses' more frequent contact with the patients and the role relationships in which nurses are expected to set limits with patients and therefore may precipitate assaults. This interaction is similar to the situation of family caregivers, who are often the victims of assaults by aggressive outpatients.

Of course, it is important to state that non-caretakers and non-family members can also become victims. We did a study[32] in which we looked at patients who had threatened violence within the two weeks prior to hospitalization. The threats were directed toward people outside of the hospital. These patients were hospitalized and no longer had access to

their original potential victims or to family members. Thirty-two percent of these threatening patients assaulted victims in the hospital who were different from the target of their original threats.

In summarizing my research group's findings and other research about violence in the mentally ill, what can I say that we learned? First, short-term predictions of violence risk are more accurate than has been reported in the literature about long-term predictions. Thus, when someone asks "can we predict violence?", the answer is that we can do pretty well in the short term (certainly better than chance).

Second, we are better at predicting violence for some patients than for others. For example, we underpredict violence in women. In making violence risk assessments, clinicians often can state whether or not they are confident in their opinions. Thus, when a clinician says, "I am fairly confident that this crack-abusing delusional schizophrenic patient with a history of violence is likely to become violent if not hospitalized," this is likely to be an accurate prediction. If someone asks, "Isn't it true that psychiatrists cannot predict violence?", the answer is that in some situations we can be confident and fairly accurate in our predictions.

Third, we have shown that specific clusters of symptoms are more predictive of violence than diagnosis. Thus, when we are asked whether schizophrenic or manic or depressed patients are most likely to be violent, the answer is that it depends more on their acute symptoms than simply on their diagnosis. (Of course, some diagnoses are associated with symptoms that relate to violence. However, the phase of illness is crucial in considering any link between diagnosis and violence.)

Fourth, our findings did not support stereotypes about psychotic patients wandering through the neighborhood randomly attacking strangers. This myth goes back to Greek and Roman times (as mentioned under "Historical Perspective"). The truth is that the minority of psychotic patients who do become violent are most likely to attack family members with whom they are living and who are setting limits on them. This is a fact well known by the Alliance for the Mentally Ill. In their journal, they state: "Most AMI families when they feel they can be candid will share story after story of the threat or actual physical and verbal abuse and violence."[23]

As can be seen, the question "Are the mentally ill dangerous?" is one that needs to be addressed by social policy, which should be informed by epidemiologic research. Yes, some mentally ill persons are dangerous. The public needs to decide how the dangerous mentally ill should be managed to ensure a safer society (e.g., should there be involuntary commitment of the dangerous mentally ill? For how long? Or should they be managed in the criminal justice system?). Once these policies have been established, the mental health clinician's responsibility becomes that of evaluating which of the mentally ill are dangerous. To inform these clinical decisions, we need to concentrate on the mentally ill patients who present to us in emergency rooms, in outpatient departments, on inpatient units, and in the

courts. We need to answer the questions of which mentally ill are dangerous, under what circumstances, in which phase of illness, with which co-morbid diagnoses (e.g., substance or alcohol abuse), while considering whether they have a history of violence and whether they are compliant or noncompliant with treatment. As clinicians and as forensic experts, we can make more accurate determinations about risks of violence with ongoing research data informing our opinions.

To go back to my original anecdote, I will tell you what I said to Mary. I said that the mentally ill could be dangerous under some circumstances. It is important not to confound stigma with the issue of concern about dangerousness. Stigma has been used as the basis of discrimination against the mentally ill. This should be separated from legitimate concerns about potential violence. When Mary is evaluating the safety of having a halfway house next door to her home, she needs to consider whether there will be requirements for compliance with treatment so that the residents will have their psychoses under control. She also needs to consider whether drug and alcohol use will be monitored and whether residents of the halfway house will be screened for whether they have a history of violence. She needs to know that her family members are unlikely to be victims of assault (especially if they stay away from the residents) and that the residents and staff of the halfway house would be the likelier victims in the event that any patients were to become violent. I told her that when psychiatric patients are under treatment with symptom control and without the use of drugs and alcohol, they are unlikely to pose a special risk for violence. I explained the above to Mary and told her that this information is consistent with clinical and research experience.

Personal Reflections

In the final section of this article, I want to describe the process that has enabled me to conduct an active research program. In conducting research, it is important to choose an area that interests one personally as well as being relevant to the profession at large. It is important to be open to new ideas and different possibilities for your research. When I was a resident, I was much more interested in victims rather than perpetrators of violence, In fact, I founded and directed the Rape Treatment Center at my university. But on the inpatient service where I was employed, I was working with perpetrators, and I realized that there were all of these unanswered questions about who commits violence and under what circumstances. I tried to look around me and come up with research questions that needed answering. Even some questions that seemed consistent with clinical experience had never been looked at critically, through controlled research. An example of this is a study that we recently did on the value of a strong therapeutic alliance (i.e., having the patient actively involved in collaboration with the treatment process). We showed that having a positive initial therapeutic alliance with the patient decreased the risk of inpatient violence.[33]

My next recommendation is to develop

an active collaboration with others that is mutually beneficial. Most of my research has been conducted in collaboration with a psychologist, Dale McNiel. This has been fruitful for both of us. Dale and I bring different and complementary strengths to our research and also have mutual respect. We have brought many other collaborators into our research program: other faculty members, residents, psychology graduate students, and nurses. In doing so, we needed to be clear about what the contributions and expectations of each individual would be, including forthright discussions of deadlines and order of authorship.

Another factor in getting research done in a clinical setting is obtaining the support of the staff. It has been crucial to work closely with the nursing staff and especially the nursing leadership. We have managed through the years to conduct routine clinical assessments of patients using state-of-the-art standardized rating scales, rather than relying only on informal and subjective evaluations. These assessments are completed for every patient on admission and discharge. In addition, the Overt Aggression Scale is completed on every shift. It also has been very advantageous to have the majority of my clinical practice in the setting in which I have done my research. Earlier in my career, I was often doing clinical work in one setting and research in another. Then I got more efficient and consolidated my research and clinical setting. Most of the research presented here has been done on the inpatient units that I direct at the University of California, San Francisco.

The other recommendation is to have a supportive family. I could never seem to get my research done between the work hours of 8:00 to 5:00. That means that I needed to bring work home, to complete analyses and papers during evening and weekend hours. I needed to give talks and present papers at regional and national meetings that also meant time away from home. It is important to have children and a spouse who understand and support these endeavors.

My last point is to talk about the value of the American Academy of Psychiatry and the Law (AAPL). It has been helpful to me to have a professional organization where I could present my research and meet psychiatrists from around the country who were dealing with similar research questions. In writing papers and doing research, it is important to get support, feedback, and criticism. I have tried to submit papers for almost every meeting. The deadline for submission of abstracts and papers has forced me to organize and write up my data in a timely manner. The questions and comments about my presentations have been invaluable in helping me to clarify my ideas and write better papers. Also, the presentations I have attended at AAPL have given me ideas for research studies and have served an important educational function.

Hopefully, these suggestions about conducting forensic research will be helpful and encouraging to those readers who are considering doing research. From my perspective, the intellectual stimulation of doing research and the rewards of making contributions to the field of forensic psychiatry are well worth the effort.

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