

“Forward Psychiatry” in the Military: Its Origins and Effectiveness

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“Forward psychiatry” was devised in World War I for the treatment of shell shock and today is the standard intervention for combat stress reaction. It relied on three principles: proximity to battle, immediacy, and expectation of recovery, subsequently given the acronym “PIE.” Both US and UK forces belatedly reintroduced PIE methods during World War II to return servicemen to active duty and made confident claims for its efficacy. Advanced treatment units also appeared to have minimized psychiatric battle casualties during Korean and Vietnamese Wars. Evaluations of its use by Israeli forces in the Lebanon conflict showed higher return-to-duty rates than at base hospitals. A reexamination of these examples suggests that reported outcomes tended to exaggerate its effectiveness both as a treatment for acute stress reaction and as a prophylaxis for chronic disorders such as PTSD. It remains uncertain who is being served by the intervention: whether it is the individual soldier or the needs of the military.

KEY WORDS: PIE; military psychiatry; battle exhaustion; posttraumatic stress disorder; combat stress reaction.

Many claims have been made for the efficacy of forward psychiatry both as a treatment for combat stress reaction and to prevent long-term psychiatric disorders. It remains the essential doctrine of modern military psychiatry in all the nations that we have studied (Martin & Cline, 1996). In World War I, British psychiatrists argued that 80% of men were returned to active duty; while their counterparts in World War II were less optimistic, they regularly quoted return to duty rates of over 50% (Jones & Wessely, 2001). Similar success stories have been told for the effectiveness of PIE treatments in Korea, Vietnam, and the Gulf conflict, though these have not been supported by statistical evidence. Evaluations of Israeli forward psychiatry during the Lebanon War of 1982 have suggested that

it was far more effective than treatment in base hospitals (Solomon & Benbenishty, 1986). In this paper we use both published and original sources to reexamine historical claims for the efficacy of PIE treatments and propose a more modest conclusion. We have not included the literature relating to civilians and refugees exposed to trauma as a key question in our review was the issue of return to combat duties.

The Origins Of Forward Psychiatry: French Neurological Centers

It is commonly stated that PIE treatments were devised by Thomas Salmon and that he was also responsible for the descriptive acronym (Cozza & Hales, 1991). The idea of forward psychiatry was in fact French and had been introduced before Salmon traveled to Europe in May 1917. Concerned by the numbers of functional and psychological cases being referred to base hospitals and therefore lost to fighting units, Georges Guillain, neurologist to the Sixth Army, argued in May 1915 that these “disorders are

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perfectly curable at the onset . . . such patients must not be evacuated behind the lines, they must be kept in the militarized zone” (Gaudry, 1995, p. 22). Marcel Briand, responsible for the central psychiatric service of the Paris military government, proposed that a network of forward neuropsychiatric centers be created. The first front-line services, the result of personal initiatives by doctors including Guillain and Abadie, were often located at dispatch depots to facilitate the return of soldiers or referral of resistant cases.

André Léri, head of the unit for the Second Army, reported in December 1916 that 91% of patients had been successfully treated and that “more than 600 were cured through a simple and energetic psychotherapy and sent back to the front after a few days” (Roudebush, 1995, p. 89). Vague about actual methods, Léri conceded that electric shocks applied to dysfunctional parts of the body though “not essential . . . affects the rapidity of the result” (Léri, 1919, p. 228). He claimed that of 4,000 patients treated over 30 months, half were without organic basis and all were returned to duty. This apparent success was explained by the general environment of the centers:

Their only relative degree of comfort, their strict military discipline, their proximity to the front, their remoteness and their inaccessibility to friends and relations render them specially suitable for this form of treatment and ensure much easier and quicker cure than in the interior (Roussy & Lhermitte, 1918, p. 164–65).

Despite these results, the numbers referred to base hospitals continued to rise and the neurologists pressed for a more comprehensive system of forward psychiatry. Resistance from the military and the skepticism of some doctors prevented its implementation. Maurice Chiray observed in December 1916

We should not forget that most of our patients, and in particular post-traumatic reflex contractures, will almost always escape the neurological centers of the front. These subjects are evacuated as “wounded” and it is only in the interior that they become “nervous” and progressively acquire their functional deformity at the same time as they are being treated for their wounds (Roudebush, 1995, p. 90).

Joseph Grasset added a further caution, “it seems proven that too often [neurologists] are content merely to ‘white-wash’ trauma victims and to send them back to the front incompletely cured” (Roudebush, 1995, pp. 90–91). Yet these experimental methods were to exercise a seminal influence not only on the French army but also on other nations and subsequent conflicts.

British And American Experience In World War I

By early 1916 the number of British soldiers diagnosed with shell shock approached epidemic proportions. It was also apparent that men who had been evacuated to UK base hospitals were unlikely to return to combat units. Of 731 discharges from Maghull Red Cross Hospital, only 21% went back to military duties and very few to battalions at the front (Shephard, 1996, p. 445). Gordon Holmes, consultant neurologist to the British Expeditionary Force (BEF), recalled that base hospitals situated in France achieved return rates of 30–40%, while those in the UK were as low as 4–5% (Holmes, 1939). In November 1916, C.S. Myers, consulting psychologist to the BEF, proposed the creation of four advanced units located about 10 miles from the trenches (Johnson & Rows, 1923). Called “Not Yet Diagnosed, Nervous Centers” to avoid use of the terms shell shock or war neurosis, they admitted soldiers directly from battle. Soldiers were fed, allowed to rest, and then put on a program of graduated exercise, ending with route marches. A few physicians, such as William Brown and Frederick Dillon, encouraged abreaction, while others such as William Johnson and D. Carmalt Jones believed that this was unnecessary and possibly counterproductive. This treatment strategy described by Salmon was adopted by the American Expeditionary Force when deployed to France (Salmon, 1917). It was later given the acronym “PIE” (proximity, immediacy, and expectancy) by Artiss (1963).

Most doctors claimed that around 80% of men admitted to these forward units were discharged to combat roles (Holmes, 1939). A study of 132 cases of combat stress reaction treated at No. 3 Canadian Stationary Hospital, during August 1917, found that 96 (73%) were returned to duty with only 36 (27%) going back to base (Russel, 1919). However, none of these reports contained objective measures or follow-up studies. In particular, it is not known how many men ceased to function when as they returned to battle. When contemporaries questioned how permanent these cures really were, Gordon Holmes visited three advanced treatment centers to investigate relapse rates. Although he claimed that recurrent admissions were only 2.8% of the total, his survey was not widespread and did not include nonpsychiatric diagnoses (Johnson & Rows, 1923). Other studies suggested that his findings were optimistic. Of 150 cases of shell shock referred to No. 12 General Hospital in France, in 1916, 27% were men who had relapsed after an earlier breakdown (Wiltshire, 1916).

For the US Army, Strecker investigated an advanced treatment unit and found that 65% of US troops were returned to combat after an average of 4 day’s treatment,

though the rate varied from 75 to 40% depending on the severity of the fighting (Strecker, 1919). Salmon reported similar rates with relapses running at 4%, though the majority of those treated went back to noncombatant duties (Salmon, 1919; Strecker & Appel, 1945).

The British Experience In World War II

PIE methods of treating psychiatric casualties were not adopted by British forces in France before their withdrawal at Dunkirk. Cases of combat stress reaction were admitted to psychiatric wards of the base hospital at Dieppe, about 100 miles from the front line. Approximately 60% of all psychological admissions were evacuated to the UK (Ahrenfeldt, 1958).

The manpower crisis created by fierce fighting in the Western Desert led to the creation of a rudimentary psychiatric system in August 1940, though without forward centers. The principles of PIE were rediscovered almost by accident. At the siege of Tobruk on the Libyan coast, where evacuation was almost impossible, doctors adopted a policy of not regarding acute psychological disorders as medical casualties and treated them close to the battle. As a result, they returned 63% of those with “uncomplicated fear states” and 50% of those with “anxiety neurosis” (the distinction between the two is not clear) to front-line service (Cooper & Sinclair, 1942). Expediency appears to have encouraged the widespread adoption of PIE methods. In the retreat to Alamein, the term “battle exhaustion” was adopted for psychiatric casualties probably at the prompting of Brigadier G.W.B. James, who had concluded that 2 years of wearying campaign had exhausted the Eighth Army both physically and mentally (James, 1955). The term was chosen to imply that men would recover naturally with “fluid, food, sleep, and stool” (Shephard, 2000, p. 184). In July 1942, a forward “Army Rest Center” was set up by 200 Field Ambulance to treat such cases. James reported that 90% of all admissions could be restored to health, “though in practice a fairly constant 30% returned satisfactorily to combatant duty” (James, 1945, p. 805). From March 1943 to the end of the Tunisian campaign in May, the psychiatrist attached to the forward unit (No. 1 Mobile General Hospital) retained 18% of admissions in the field, evacuating the remainder to the Advanced Psychiatric Unit at Tripoli. The latter claimed to have returned 33% directly to a reinforcement unit (Ahrenfeldt, 1958).

In the summer of 1943, a formal psychiatric structure was devised for the Eighth Army and “Forward Filtration” or “Corps Exhaustion Centers” were set up in Casualty Clearing Stations. It was subsequently reported that from

56 to 70% of men treated in these units returned to fighting units and that only 5% broke down again in the course of the same battle (Ahrenfeldt, 1958, p. 169). Thus, a number of reports helped to create the impression that the problem had been at least partly solved.

However, there are strong grounds for questioning this conclusion. The outcome results came either from official returns or from the military physicians responsible for the clinical intervention. To have discovered that treatments were ineffective or of marginal benefit would not have helped a doctor’s career. Furthermore, the publication of such results in wartime would have been considered detrimental to morale. In the absence of rigorous research methodology, it is not surprising that virtually all these reports showed successful outcomes. During World War II, military psychiatry was a profession under pressure. Aware of its low standing in the medical hierarchy, it needed to prove its worth to a high command that was apparently impressed by figures without inquiring too closely into their accuracy (Shephard, 2000).

The personal records kept by military psychiatrists, rather than their published work, often depicted a less impressive picture. Major Doyle of the First Canadian Division calculated that only 22% of troops (reduced to 15% after relapses) went back to active service during the Italian campaign of July 1943 to April 1945 (Doyle, n.d.). In a report marked “restricted,” Brigadier H.A. Sandiford confirmed that between May and November 1944 the return to duty rate fluctuated between 32 and 16%, while the specialist base unit at Assisi sent only 19% of men back in the same medical category (Sandiford, 1944a). Relapse rates were rarely recorded.

In Northwest Europe the situation was no better. Of the 2,328 soldiers treated by the First Canadian Exhaustion Unit between July and September 1944, only 155 (6.7%) returned to combat units, most (42.9%) being referred to rehabilitation units or reallocated to support roles (41%) (Burch, 1945). In a secret study, Captain Henson, who treated battle exhaustion cases at a base hospital in Northwest France, found that 43% had broken down a second time, while 50% had been referred from forward units (Sandiford, 1944b).

Although many men were retained in the forces after treatment, relatively few went back to fighting units. That the military only permitted the publication of optimistic studies is hardly surprising in the context of an arduous war as anything else would have implied problems with morale and combat effectiveness. However, it does suggest that wartime literature on forward psychiatry represented an early example of publication bias.

US Studies From World War II

Despite the work of Salmon, US armed forces were unprepared for forward psychiatry when they landed in North Africa (Jones, 1995). Planners wrongly assumed that screening programs at enlistment would have rejected any psychologically vulnerable recruits. During the Tunisian campaign of January to May 1943 large numbers of psychiatric casualties were invalidated to base hospitals where they were generally lost to fighting units. In response, Captain Frederick Hanson, a US army psychiatrist, reintroduced PIE principles and reported having returned 70% of 494 psychiatric battle casualties to combat after 48 hr of treatment (Drayer & Glass, 1973). In the last phase of the North African campaign, psychiatrists deployed to evacuation hospitals in forward areas were said to have returned over 50% of troops to combat, though as Drayer and Glass later remarked “it is difficult to determine the validity of such return-to-duty results” (Drayer & Glass, 1973, p. 10). In April 1943, following recommendations from Hanson and Major Louis Tureen, General Omar Bradley issued a directive that established a holding period of 7 days for psychiatric patients and further prescribed the term “exhaustion” as the initial diagnosis for all combat psychiatric casualties. These principles were subsequently reapplied in the Southwest Pacific, Mediterranean, and Northwest Europe theaters. In spring 1945, a commission of civilian psychiatrists sent to France to investigate combat exhaustion found that about 40% of cases were returned to duty, though many battalion surgeons believed that recoveries would prove short-lived (Bartmemeier et al., 1946).

The principal aim of PIE treatments was to return men to duty rather than to address their mental state. This reality too was perhaps disguised for reasons of morale. Contemporary accounts provide little evidence that the primary motivation was therapeutic. Grinker and Spiegel (1944, p. 125), who were strongly influenced by psychoanalytic ideas, argued that soldiers suffering from combat stress reaction and who had a good prognosis should be treated by a “covering-up” method. Designed to strengthen the ego, this method involved persuasion, strong suggestion and reidentification with the all-powerful group. The intention was to assist the “ego in repressing or enduring anxiety,” in contrast to abreaction and “uncovering” which they recommended for resistant cases referred to base hospitals. Wagner wrote of the Normandy campaign that sending combat-exhausted men back to the front line was in the interests of the soldier because if evacuated “he would be tempted to maintain his sickness as part of a masochistic penance for having failed to return to his unit and his duty” (Wagner, 1946, p. 358). He also held a low

opinion of those who succumbed to combat exhaustion describing them as “socially and emotionally immature” (1946, p. 356).

Grinker and Spiegel, who worked at a general hospital in Algiers to which servicemen were flown by air within 2–5 days of their breakdowns, had some worrying findings. Having examined 1,258 admissions, they estimated that 767 (72.2%) returned to some form of duty though this made

no allowance for cases returned to duty who relapse and are hospitalised elsewhere, since such follow-up studies have been impossible . . . Psychiatrists from forward areas claim a 60% return to duty; but we have seen several of their patients relapsed after the first shot was fired (Grinker & Spiegel, 1943, p. 232).

They estimated that less than 2% of servicemen returned to duty went back to combat. “With adequate test situations, including noise of gun fire, anti-aircraft barrage, airplanes and bombing, a pitiful few are sufficiently recovered to enable us with clear conscience to order them back to the front. Yet over 70% can be rehabilitated for selective non-combatant service, in quiet sectors, with varying degrees of episodic gunfire or raids” (Grinker & Spiegel, 1943, p. 235).

PostWar Evaluation

A survey of 393 US troops engaged in the Apennines campaign between March and April 1945 revealed that 54% of those treated in a divisional neuropsychiatric unit were returned to some form of duty (Glass, 1947). Of these 30% went back to combat units. Yet the psychiatric relapse rate proved an unreliable indicator of the effectiveness of psychological treatments. Two-thirds of those who later relapsed did so by other routes (principally disease, injury or military offence), whereas 25% of those returned to combat units and then found to be ineffective were retained by their commanders. Glass concluded that it was feasible to return the vast majority of neuropsychiatric casualties to noncombatant base or support duties, but only 30% to active duty.

A 3-month, follow-up study by Ludwig and Ranson (1947) attempted to evaluate the efficacy of PIE treatments for acute combat stress. A sample of 346 cases were randomly selected from infantry soldiers who had returned to full combat duties from two forward psychiatric units attached to the Seventh Army operating in Northwest Europe. Cases of psychosis were excluded and questionnaires sent. With a high response rate (90%), the study showed that only 27% remained in combat units 3 months after treatment and performed at a reasonable standard; the

majority (68%) had relapsed and were no longer on active duty. Treatment appeared to have been largely ineffective for most anxiety states: “the high rate of readmission seen in cases of acute ‘pure’ anxiety states (38.2%) suggests that such acute episodes, at least with the methods of therapy employed, produced rather lasting loss of resistance to further combat stress” (Ludwig & Ranson, 1947, p. 61).

In a 5-year, follow-up study of 290 navy and marine corps and 665 army personnel, the majority of those with acute psychiatric breakdowns did not return to combat duty, irrespective of the type of treatment offered (Brill & Beebe, 1952). There was a trend for those who were returned to duty to do better than those medically discharged, but as the authors themselves noted, this was almost certainly a selection bias.

Korea

Although the British had forgotten the lesson of treating acute combat stress by the PIE method by the time of the outbreak of the Korean War in June 1950 (Jones & Palmer, 2000), US forces deployed effective military psychiatric services within 8 weeks of the outbreak of war. Glass organized mental health sections to train regimental and battalion medical officers. He also set up mobile psychiatric detachments, called “KO teams” to reinforce divisions at time of heavy fighting so that acute combat stress could be treated rapidly as close to the front line as possible (Arthur, 1978; Artiss, 1997; Glass, 1954). It was subsequently claimed that 65–75% of combat exhaustion patients were returned to duty, though a detailed investigation of a small sample showed that only 44% were assessed as performing at an average or better level (Hausman & Rioch, 1967).

Vietnam

During the initial phases of build-up in Vietnam, the psychiatric program was fully in place, with abundant mental health resources and psychiatrists conversant with the principles of combat psychiatry. Treatment was based on the traditional PIE method and operated by mobile psychiatric detachments. The widespread and intermittent nature of combat in Vietnam with episodic search and destroy missions made it necessary to disperse divisional psychiatric services (Jones, 1967). The eight enlisted specialists in each combat division were assigned in pairs to each of four medical companies, which were then distributed to provide forward cover over the broad area of divisional operations.

Cases of combat stress reaction, however, failed to materialize. Throughout the entire conflict, less than 5%

of casualties were placed in this category (Jones, 1995). Most spectacular was the low rate of identified psychiatric casualties generally and, in particular, the relative absence of the transient anxiety states. The reasons for this success were ascribed to the widespread use of forward psychiatry (Tiffany, 1967). “According to authoritative reports,” wrote Glass, (1974, 807–808), “military psychiatry in the Vietnam conflict achieved its most impressive record in conserving the fighting strength.” Casualties were reported as being ten times lower than in World War II, and three times lower than in Korea (Bey, 1970), smaller than “any recorded in previous conflicts” (Tiffany, 1967, p. 1585). Bourne concluded that “psychiatric casualties need never again become a major cause of attrition in the United States military in a combat zone” (Bourne, 1970, p. 487). However, combat stress reactions in Vietnam may have presented in an untypical way because of the general alienation soldiers felt about the war. High rates of substance abuse and evacuations of character and behavior disorders may have concealed untreated psychiatric battle casualties (Renner, 1973).

These confident claims for forward psychiatry were soon to be questioned with the return of veterans to the US and the recognition of posttraumatic stress disorder (PTSD). One of the most comprehensive studies, the CDC Vietnam Experience Study, discovered that veterans “seem to be functioning socially and economically in a manner similar to army veterans who did not serve in Vietnam” (Centers for Disease Control, 1988, p. 2705). Although 15% had at some time been diagnosed with PTSD, only 2% currently fulfilled the criteria. Yet the National Vietnam Veterans Readjustment Study found that 15% of male veterans and 8% of females had the symptoms of PTSD, while a further 11% of men and 8% of women had clinically significant stress symptoms that adversely affected their lives but did not qualify for the full diagnosis (Kulka et al., 1990). The NVVRS analysis of lifetime prevalence indicated that 31% of male and 27% of female Vietnam veterans had PTSD. This landmark study, however, had a methodological weakness in relation to the way that combat exposure was assessed. It was based on retrospective self reports of events and circumstances that occurred approximately 10–20 years prior to data collection and military records were not used to validate this data. Marlowe found the results “startling . . . raising many questions of causality” and speculated whether they represented “the sequelae of post combat belief, expectation, explanation and attribution rather than the sequelae of combat itself” (Marlowe, 2000, p. 76). If the rates of PTSD found in later systematic studies are accurate, then PIE methods had not prevented an epidemic of psychiatric disorders.

The Persian Gulf War

The US army went to the Gulf anticipating relatively high numbers of psychological casualties. The basic doctrine was traditional forward psychiatry, though attention was also paid to family issues. In practice, difficulties were encountered in a fast moving campaign of reuniting service personnel with their units. It takes time to identify men with acute stress reactions and transfer them to specialist units in the chaos of battle. In addition, commanding officers are often reluctant to take back men who have broken down and sometimes use psychiatric routes as a way of removing personnel they regard as unsuitable for missions. Colonel Greg Belenky, psychiatrist attached to the 2nd Armoured Cavalry Regiment in the Gulf, observed how the pressing demands of warfare cannot always be predicted by theoretical plans (Belenky & Jones, 1987). Forward psychiatry was also employed by UK forces in the Gulf conflict where field psychiatric teams worked in conjunction with a "battleshock" recovery unit (Gillham & Robbins, 1993). To date no clear relationship has been established between Gulf-related illness, characterized by unexplained medical symptoms, and PTSD.

Israeli Conflicts

Following victories in the Six Day War, there was little expectation of, and no planning for, psychiatric casualties in any future conflict (Solomon, 1993). The sudden outbreak of the Yom Kippur War left little time for preparation and cases of acute combat stress were referred to base units rather than forward treatment centers (Moses et al., 1976). A study of Israeli troops treated at hospitals in the rear found that 55% were downgraded after discharge and of these 19% were regarded as temporarily or permanently unfit for further military duties (Levav, Greenfield, & Baruch, 1979; Levy, Witztum, & Solomon, 1996). A further 6% had relapsed from the well group at follow-up 18 months later. Only 39% returned to duty in their original units, a percentage that equates with rates recorded during World War II. Because the Yom Kippur War was a high intensity conflict, it was perhaps not surprising that there were so many psychiatrically injured soldiers.

The 1982 conflict in Lebanon seemed to provide support for the revived doctrine of forward psychiatry. The two advanced centres returned 59 and 60% of admissions to their original military units, whereas the base hospitals achieved rates of 40 and 16% (Noy, Levy, & Solomon, 1984). In a seminal study, Solomon and Benbenishty (1986) then compared the two forward centers with control populations: a group airlifted to general hospitals in

Israel and a group who had sought psychiatric help when at home on leave. A follow-up investigation conducted 1 year after the conflict showed that the strongest association with return to unit was expectancy. Servicemen who believed that they would go back at all costs, recorded a return to duty rate double that for soldiers without this conviction. The percentage that developed PTSD was higher in those treated at the rear than in those seen at forward units. In general, the more the three PIE principles applied, the stronger was the effect on outcome. Only 38% of soldiers who returned to their unit after treatment reported PTSD one year after the cease-fire, compared with 74% of those who did not return.

Although these findings offered powerful evidence to support forward psychiatry, the nature of the study suggests caution. It was not a randomized controlled trial. Although the authors argued that there was "no bias operating in the selection of treatment location," they also conceded that

soldiers with combat stress reaction who had a more encouraging prognosis were returned to their units; in contrast, those who had a less favourable prognosis were referred to the rear for further treatment. Return to the unit in itself could be both an outcome and a therapeutic tool. It is possible that sending soldiers with combat stress reaction back to their units actually contributed to a better outcome, resulting in fewer signs of posttraumatic stress disorder (Solomon & Benbenishty, 1986, p. 617).

The problem with nonrandom allocation is that it is almost never free from bias. Even if known confounders of prognosis are equally allocated, unknown or unmeasurable confounders will not be. An allocation bias is explicit: soldiers with a better prognosis were treated in forward units. In addition, those with an inherently better prognosis are very likely to be those with the highest expectancy of return. It may not be that high expectancy predicts a better prognosis but the other way around. Soldiers treated in the front line already had a better prognosis than those treated at the rear. Similarly, the association with expectancy could also be biased because the soldiers who were the least disturbed were the ones who expected to return to combat duties. An opposite bias could have resulted from the observation that commanders have traditionally used medical referrals as a way of getting rid of disruptive servicemen, who might be expected to have a poor prognosis. Furthermore, soldiers in one of the non-PIE groups had been flown to base hospitals in Israel. It is possible that a higher threshold for combat stress reaction was required for a commander to request an evacuation by air. Members of the non-PIE group who had requested treatment after the ceasefire probably had chronic symptoms and may already have developed PTSD. Hence, the

study did not compare similar categories of servicemen who had been randomly allocated to different types of treatment.

Lower rates of psychiatric disorder in the Lebanon conflict compared with Yom Kippur may not be a function of improved forward psychiatry. The overall rates of physical injury were significantly different (465 killed in action during "Peace for Galilee" as against 2,688 in the Yom Kippur). Given the established connection between the killed and wounded rate and psychiatric battle casualties and hence the rates of psychiatric casualties, the incidence of combat fatigue in the Lebanon war would be lower, irrespective of the treatment policies employed.

The Israeli studies show that PIE treatments were associated with favorable outcomes but do not determine whether this intervention was the primary cause. And whether they worked or not, PIE methods did not prevent chronic war related psychiatric injury (Rabinowitz, Margalit, Mark, Solomon, & Bleich, 1990).

Discussion

PIE methods have become the accepted doctrine of military psychiatry for acute stress reactions in battle, though a wide variety of outcomes have been reported (Table 1). Their primary aim is to return soldiers to combat duty and to avoid overwhelming the evacuation and treatment train (O'Brien, 1998). Published accounts of these interventions have demonstrated that they succeeded in returning servicemen to duty, though rates showed considerable variation. None of these studies included controls (Neria & Solomon, 1999).

It remains far from clear how soldiers perform in the short term having been treated using PIE methods as there are few reliable studies of relapse rates. One investigation found that only about a quarter returned to effective duty (Ludwig & Ranson, 1947). Some aspects of forward psychiatry, such as the provision of warm clothing, food and sleep, appear to have a positive effect for those cases characterized as "combat exhaustion," in which men have collapsed as a result of physical deprivation, exertion and psychological stress. This would suggest that it is a form of convalescence rather than treatment. It also seems plausible that avoiding premature labelling with psychiatric disorders and the imparting of positive messages about the experience and the person's worth as a soldier are beneficial. Likewise, evacuation may be associated with a sense of failure and stigma. The conclusion reached by Strecker and Appel in 1945 that the closer to the battle line the patient is treated the better the prognosis may well hold true, though it does not establish cause and effect. Current research does not enable us to draw any firm conclusions

about the efficacy of PIE methods, whether it works or does not work.

There has been an important change in emphasis in the treatment of combat stress reaction. During World War I most physicians saw little value in abreaction. Rivers argued that volunteer or conscript soldiers broke down in battle because their rapid training had failed to provide them with an adaptive form of repression. Regulars, he believed, were more effective soldiers because they had much longer to build up a mechanism to control unwanted emotions (Rivers, 1918). Nevertheless, Rivers considered abreaction an appropriate intervention for resistant cases referred to base hospitals. The idea that treatment should focus on the active suppression of the natural fears of battle remained popular during World War II. Major Burch, who ran an exhaustion unit in 1944, relied on sedation and suggestion to return troops to duty, adding that "abreaction has been attempted using intravenous barbiturates but this has not been found to be of value therapeutically and given up" (Burch, 1945, p. 2). Changes in culture towards the end of the twentieth century witnessed a greater acceptance of disclosure, ventilation and the expression of feelings. Psychological debriefing became an important element in forward psychiatry. This development reflected the tension between military needs (suppression of fears to return to duty) and an individual's therapeutic goals, which emphasized a cathartic release of tension.

If it could be shown that PIE methods not only return more men to duty than other interventions but also decrease subsequent rates of psychiatric disorder, this would be a significant finding. But how likely are these outcomes? Supporters of forward interventions argue that they maintain the soldier in his social role, prevent isolation and shame, allow him to fulfil his duty with corresponding benefits to self-esteem, and persuade him that this is a transient phenomenon. Opponents suggest that PIE treatment is simply an attempt by the military to "conserve the fighting strength," which is the motto of the US Army Medical Corps (Camp, 1993, p. 1001). Indeed, one semiofficial account of the Gulf War accepted that forward psychiatry "reinforces for other soldiers that battle fatigue does not provide a quick, easy way home" (Martin & Cline, 1996, 165). Opponents argue that the cost of "conserving the fighting strength" is to retraumatize soldiers when they are at their most vulnerable, thereby transforming a transient response into a chronic disorder.

At present, there are no definitive answers to these questions. The only certain way of determining the effectiveness of PIE methods is by a random controlled trial, which is impossible in the circumstances. It is possible that by improved training, promotion of unit cohesion, shorter deployments, and so forth, the military may reduce the

Table 1. Summary of Main Papers on “Forward Psychiatry” with Reported Outcomes

Study	War	Findings	Limitations
Bartemeier et al., 1946	WWII	40% to combat duty	No objective measures
Bennett Tombleson, 1916	WWI	All returned to combat	No objective measures and small sample
Brill & Beebe, 1952	WWII	Follow-up showed few returned to combat	Selection bias in samples
Brown, 1919	WWI	91% to duty	No objective measures
Cooper & Sinclair, 1942	WWII	50% to 63% to duty	No objective measures
Craigie, 1944	WWII	61% to active duty	No objective measures and limited follow-up
Glass, 1947	WWII	54% to duty but only 30% to combat units	No controls
Grinker & Spiegel, 1943	WWII	2% to combat duty; 70% to non-combat roles	No objective measures
Hausman & Rioch, 1967	Korea	44% of those treated doing well in combat units	Small sample
Hunter, 1946	WWII	30% to combat units	No objective measures
James, 1945	WWII	90% to duty but only 30% to combat units	No objective measures
Jones & Palmer, 2000	Korea	PIE superior to base hospital	No controls
Leri, 1919	WWI	91% to duty	No objective measures
Ludwig & Ranson, 1947	WWII	68% returned to combat then relapsed	Relied on self-report
Noy et al., 1984	Lebanon	59% returned to original units	Nonrandom allocation
Russel, 1919	WWI	73% to duty	No objective measures and small sample
Salmon, 1917	WWI	Recommended PIE treatments	No objective measures
Solomon & Benbishty, 1986	Lebanon	PIE superior to base hospital	Nonrandom allocation
Strecker, 1919	WWI	40% to 75% to duty	No objective measures
Wiltshire, 1916	WWI	27% of admissions were relapses	No controls

proportion of soldiers who break down. It is also possible that the new management strategies for acute stress disorder may improve the outcome for those who have ceased to function (Litz, Gray, Bryant, & Adler, 2002). However, we suggest that it is unlikely that these measures will eliminate the problem of combat stress reaction and that the fundamental dilemma of serving the needs of the military or those of the individual soldier will never be completely resolved.

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