

Strategies to increase compliance with out-patient aftercare among patients referred to a psychiatric emergency department: a multi-centre controlled intervention study

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ABSTRACT

Background. Compliance with referral for out-patient aftercare of psychiatric emergency patients is limited. This study investigated the efficacy of a combination of several referral strategies (fixed appointment, involvement of the family, presence of the aftercare person, motivational counselling) in increasing referral and treatment compliance of patients referred to the psychiatric emergency department of three general hospitals.

Methods. A randomized controlled design was used to assess the effect of this experimental condition on referral compliance and on continuation of aftercare treatment.

Results. A significant beneficial effect on compliance with the referral was found in two hospitals and a near-significant effect in the third. After 3 months of aftercare, the influence of the experimental procedure on adherence to therapy was still significant in two hospitals, but not in the third.

Conclusions. Helping the patient to attend an initial appointment can be achieved by a combination of practical and organizational arrangements.

INTRODUCTION

Compliance with referral for out-patient aftercare following treatment in the emergency department (ED) is limited. In a prospective study on a large group of patients Vukmir *et al.* (1992) found that only 28% complied with referral for follow-up. Matas *et al.* (1992) found that psychiatric patients referred from the ED complied three times less often than those referred from general practitioners or from other departments.

Although compliance-related problems are not more common among psychiatric patients than among other patients, a number of factors associated with non-compliance are more com-

monly found among psychiatric patients. Anxiety, alcohol or drug abuse and social isolation appear to reduce the ability to comply (Blackwell, 1992).

The characteristics of the referral at the emergency department itself may further reduce compliance. The personality trait 'impulsivity' commonly found in patients referred to the ED involuntarily (Segal *et al.* 1988), may be incongruent with a longer-term treatment perspective. Other patients who are self-referred often expect an immediate solution to their problems and are not able to adhere to further treatment.

Studies on compliance with referral among psychiatric emergency patients have shown considerable variation in proportions of compliance. Solomon & Gordon (1986) reported estimates from 7.1 to 74.1%. In their review Minoletti *et al.* (1984) reported proportions

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ranging from 18 to 64%. The only patient characteristic that appeared to be consistently related to referral compliance was psychiatric diagnosis.

Compliance is a complex behaviour, and studied determinants of compliance have included patient characteristics, clinician variables, interaction variables and methods used. An early review concerning different determinants of compliance (Dunbar, 1980) showed that factors related to the method or the treatment regime are among the most important. However, relatively few studies have systematically addressed different methods used for increasing referral compliance. Craig & Huffine (1974) reported that the use of a fixed appointment for the first out-patient contact increased compliance threefold. However, this outcome should be considered with caution, as it was based on very small numbers and there was no control for the influence of other factors over time. In the same study a reduction of waiting lists had only a limited effect. Several other authors have suggested methods to increase referral compliance: increasing the congruence between patient request and follow-up arrangements (Jellinek, 1978), the use of specific instructions about the benefits of psychiatric treatment (Blouin *et al.* 1985), and a stronger engagement and a more intensive aftercare programme (Solomon & Gordon, 1986). However, little empirical evidence was offered to support these statements.

Next to specific interventions directed at better compliance, the overall quality and duration of the emergency work have been found associated with subsequent compliance. In a study concerning the quality of care in psychiatric emergencies (Gustafsson *et al.* 1993) a positive relation was found between an index expressing the quality of the emergency work and compliance with follow-up recommendations, especially in case of substance abuse.

In the case of psychiatric emergency referrals following attempted suicide, a number of controlled studies have shown the efficacy of specific strategies to increase referral compliance. The arrangement of a fixed appointment (Möller & Geiger, 1981), and the provision of continuity of care (Torhorst *et al.* 1988) increased compliance with aftercare. Although the use of a special motivation interview at the time of the referral

did not increase compliance significantly (Torhorst *et al.* 1988), the use of additional motivation during a home visit by a social nurse in case of non-compliance, resulted in a significant increase when compared with a control group (van Heeringen *et al.* 1995).

However, in order to increase the overall efficacy of service delivery, it is important that benefit is not limited to one problem group. Therefore, there is a great need for controlled intervention studies aiming at improving compliance with out-patient aftercare among patients with various psychiatric problem profiles referred to the ED. The purpose of the present study was, therefore, to investigate the efficacy of the interventions of a multi-disciplinary psychiatric crisis team in increasing compliance with referral and with subsequent treatment.

A similar randomized controlled study design was used in three different general hospitals to compare patients in a 'special care' condition with a control group, receiving usual care. Three research questions were addressed. First, does special care increase the referral compliance to out-patient treatment? Secondly, does special care increase the compliance with subsequent out-patient treatment? Finally, what is the additional cost of 'special care' compared to 'usual care' in terms of invested personnel time?

METHOD

The study was performed in three hospitals participating in an experiment to improve the quality of care for patients referred to the ED for psychiatric emergencies. The hospitals are general hospitals with a public health care function located in three different Belgian cities. They provide 24-hour psychiatric emergency assistance at the emergency department by means of a multidisciplinary team. The staff includes a senior psychiatrist, supported by psychiatric residents in training, and a team of psychiatric and/or social nurses, a psychologist, and one or two social workers. The 'crisis unit' is a small ward, with consultation rooms and five beds, closely connected to the ED, where patients can stay for a maximum of 72 h. The objectives are extended observation, an orientation for further treatment, or brief therapeutic interventions. Disposition includes

further in-patient hospitalization, discharge back home, or referral to another hospital or a facility for out-patient after-care. After-care facilities included the out-patient psychiatric department of the hospital, community mental health services, facilities for social guidance, or the private practice of a general practitioner, psychiatrist or psychologist.

In order to obtain full cooperation, all after-care facilities within the region were contacted by mail before the study commenced, in order to explain the study. Further practical arrangements were discussed by phone.

During a 10-month period (16 June 1995–16 April 1996) all patients referred to out-patient treatment were included in the study. Following the initial interview at the ED the clinician decided if a patient was in need of referral for out-patient treatment. At that time oral consent was obtained from the patient to contact the aftercare agency. A patient could be included only once. Patients were excluded in case of discharge against medical advice ($N = 48$), or in case of discharge during the weekend ($N = 203$) or at night ($N = 392$). Furthermore, patients referred for problems related to illicit drug use ($N = 168$) were not included because previous studies (Unnithan & Farell, 1992; Spooren *et al.* 1996a) indicated that the emergency department is not an appropriate setting for the initial assessment and management of drug-related problems. Finally, patients judged to be at high risk of suicide at the time of the referral ($N = 47$) were excluded from the study for ethical reasons.

Referral compliance was defined as adherence to a suggested referral to out-patient aftercare. Treatment compliance was defined as continuation of out-patient treatment. Treatment compliance implied that the patient kept his appointments with the aftercare person on a regular basis. Adherence to therapy assignments or recommendations about the dosage of pharmacological treatment was not further investigated.

Once it was clear that a patient fulfilled all inclusion criteria, he was entered on a randomization list, which determined whether he was allocated to either a control or an experimental condition. The experimental condition consisted of the arrangement of a fixed appointment, and a number of interventions in order to allow for a flexible treatment approach.

Interventions included involvement of the family of the patient, discussion of further treatment with the patient in the presence of the aftercarer, counselling directed at increasing motivation and incorporating the patient's perspective. Most interventions were educational rather than therapeutic. The involvement of family aimed at informing them about the present illness or problems, the need for treatment and the practical organization of the aftercare. Counselling of the patient included a general explanation of further out-patient treatment and how he could benefit from it.

In the control condition intervention was limited to informing the patient about aftercare (address, phone number, name of aftercare professional). This 'usual care' condition corresponded to the standard provision of care as it was performed in the period before the crisis-unit team was installed.

Sociodemographic and clinical characteristics of patients were monitored routinely by psychiatric residents (Spooren *et al.* 1996b). A separate standardized monitoring form was developed in order to collect information on the interventions regarding referral to out-patient after-care, the nature of the after-care facility, and the expected compliance. All team members kept a record of the time invested in disposition activities. This was used as a crude measure to determine the time investment in interventions directed at the referral.

Information on compliance with the referral was collected from the person or agency providing the aftercare. One month after the referral the aftercare facility was contacted by telephone to assess whether the patient had attended the service. Furthermore, additional information was collected concerning the aftercare treatment arrangements (frequency, duration). In case of non-compliance reasons for not attending were noted, if available. Three months later aftercare facilities were contacted again to examine the treatment compliance and changes in treatment arrangements. Furthermore, the therapist was asked to rate the change in the condition of the patient on a single-item scale.

Statistical analyses

The difference between special care and usual care was considered efficient if the proportion of patients that complied with the referral could be

increased by 20%. With α set at 0.05 and $1 - \beta$ at 0.80, a sample size of 107 patients in each condition was required (Lemeshaw *et al.* 1990). Separate analyses were performed for each hospital. Therefore, each hospital had to include 214 patients. A statistical analysis was performed to compare patients in both treatment conditions on their sociodemographic and clinical characteristics, using χ^2 and t test where appropriate. The efficacy of the provision of special care was assessed by comparing the proportion of patients complying between both treatment conditions on an intention to treat basis. Next, the influence of the type of aftercare on compliance was analysed. Furthermore, logistic regression was used to determine the odds ratios of referral compliance, after adjustment for potential baseline differences. Finally, mean time investment in both treatment conditions was compared by means of t tests.

RESULTS

During the study period 647 patients referred to subsequent out-patient treatment were included in the study (Table 1). In hospital B two cases were lost for follow-up, because the professional refused cooperation. A comparison of socio-demographic characteristics, referral modalities and psychiatric diagnoses between both treatment conditions revealed a significant difference

for the main reason of referral and the presence of a diagnosis of substance related disorder. Stratification by hospital revealed that no significant differences were found in two hospitals. However, in hospital C significant differences were found for age (special care, 34.6; usual care, 39.4; $t = -2.89$, $P = 0.004$), main reason for referral ($\chi^2 = 33.27$, $P = 0.000$) and the proportions of patients with a diagnosis of 'substance related disorder' ($\chi^2 = 13.26$, $P = 0.0003$) and 'mood disorder' ($\chi^2 = 8.99$, $P = 0.003$). Patients with mood disorder were over-represented in the special care condition (special care, 36.7%; usual care, 17.1%) while patients diagnosed as suffering from substance related disorder were over-represented in the usual care condition (special care, 25.2%; usual care, 51.4%) (Table 2). Thus, for this hospital the treatment effect had to be adjusted for these baseline differences.

The results related to the referral compliance indicate the efficacy of the experimental referral strategy in two hospitals. In hospital B the 'special care' condition was also superior, but the increase of compliance was not significant.

A comparison of the percentage of patients still in treatment after 3 months showed that more patients remained in treatment in the experimental group of hospital A and C. In hospital B there was no significant difference in treatment compliance between the two study groups after 3 months.

Table 1. Characteristics of patient groups in both treatment conditions

	Special care (<i>N</i> = 327)		Usual care (<i>N</i> = 322)		χ^2
	<i>N</i>	%	<i>N</i>	%	
Gender: male	171	52.3	173	53.9	0.11
Unstable living situation (e.g. sheltered home...)	20	6.3	33	10.9	3.59
Source of income (unemployment social welfare support...)	178	61.2	163	60.6	< 0.01
Professional source of referral (GP, police...)	240	74.3	218	69	1.97
Main reason for referral					
Attempted suicide	29	8.8	33	10.2	17.07**
Psychiatric	134	41	91	28.3	—
Substance abuse	50	15.3	84	26.1	—
Situational	46	14.1	46	14.3	—
Others	68	20.8	68	21.1	—
DSM-IV Axis I disorder					
Substance related disorder	86	26.3	111	34.5	4.75*
Psychotic disorder	34	10.4	28	8.7	0.37
Mood disorder	108	33	87	27	2.51
Adjustment disorder	89	27.2	95	29.5	0.31

* $P < 0.05$; ** $P < 0.01$.

Table 2. Compliance with referral and treatment compliance after 4 months in special care and usual care group

	Special care		Usual care		χ^2 †	P
	%	N	%	N		
Hospital A						
Referral compliance	78.5	84/107	43.8	46/105	25.45	***
Treatment compliance	48.6	52/107	21.9	23/105	15.37	***
Hospital B						
Referral compliance	62.5	75/120	52.7	59/112	1.91	NS
Treatment compliance	32.5	39/120	33.9	38/112	0.032	NS
Hospital C						
Referral compliance	66.7	66/99	27.4	29/106	30.25	***
Treatment compliance	30.6	31/99	10.5	11/105	11.53	***

† With continuity correction.

*** $P < 0.001$; NS, not significant.

Table 3. Type of aftercare: within the hospital or external

	Internal referral				External referral			
	%	n/N	χ^2 †	P	%	n/N	χ^2 †	P
Hospital A								
Special	81.4	70/86	29.01	***	66.7	14/21	0.00	NS
Usual	40.7	37/91	—	—	64.3	9/14	—	—
Hospital B								
Special	53.4	31/58	0.754	NS	71.0	44/62	0.929	NS
Usual	43.4	23/53	—	—	61.0	36/59	—	—
Hospital C‡								
Special	67.1	51/76	23.569	***	61.9	13/21	3.008	NS
Usual	27.2	22/81	—	—	30.0	6/20	—	—

† With continuity correction.

‡ Missing, 7.

*** $P < 0.001$; NS, not significant.

A comparison of the proportion of aftercare (Table 3) within the hospital or by external agencies showed no differences in the two treatment conditions. However, the hospitals themselves showed important differences in their discharge pattern. Hospitals A and C referred mainly to their own out-patient services (follow-up by the crisis-unit team and out-patient psychiatric department), and only referred about 20% to external services. In hospital B more than half of the patients were referred to external facilities. A stratification according to the type of aftercare showed that in hospital A the experimental condition was only superior in case of referral to their own out-patient services. Although in hospital C the experimental referral strategy was superior in case of referral to both internal and external services, the difference was

not significant in case of external referrals, possibly due to the small number of patients.

The strength of the association between the experimental intervention and referral compliance is shown in Table 4. In hospital A and C a strong association was found, while for hospital B the odds ratio was not significant.

Because significant baseline differences were found between the referral conditions in hospital C, the potential confounding effect of these differences was tested. Age, a diagnosis of substance related disorder and mood disorder were introduced in the multivariate logistic regression as possible confounders. Main reason for referral was not included because the baseline difference of this characteristic was only related to the proportions of problems related to substance abuse and depressive complaints. The

Table 4. Odds ratio and 95% confidence interval of referral compliance in the 'special care' condition with 'usual care' group as reference. Crude OR for all hospitals, adjusted OR for hospital C

	β	OR	95% CI
Univariate analysis			
Hospital A	1.5442	4.68	2.57–8.55
Hospital B	0.4036	1.49	0.89–2.53
Hospital C	1.6895	5.42	2.97–8.55
Adjustment for Hospital C*			
Special care	1.5589	4.75	2.5–9.03
Age group (young versus old)	0.0434	1.04	0.54–2.02
DSM-IV Axis I Disorder			
Substance related disorder	0.039	1.04	0.53–2.03
Mood disorder	1.191	3.29	1.57–6.88

* Adjusted for age, the presence of an axis I substance related and mood disorder.

Table 5. Estimation of time invested in activities directed at referral to aftercare

	N†	Mean time	s.d.	t value	P
Hospital A					
Special care	104	33' 27"	34' 56"	7.75	***
Usual care	102	6' 26"	4' 17"	—	—
Hospital B					
Special care	109	1 h 49' 32"	56' 44"	2.83	**
Usual care	100	1 h 28' 39"	49' 25"	—	—
Hospital C					
Special care	86	1 h 13' 13"	34' 33"	6.93	***
Usual care	78	40'	25' 40"	—	—

† Missing values: Pilot A: 6 cases (2.8%); Pilot B: 23 cases (9.9%); Pilot C 41 cases (20%)

** $P < 0.01$; *** $P < 0.001$.

adjusted odds ratio demonstrates that the association between the experimental strategy and referral compliance remains substantial. The only other variable in the model significantly associated with good referral compliance is the presence of mood disorder.

The estimation of time invested in the strategies directed at out-patient referral, was consistently higher in the experimental condition compared to the control condition. The mean difference in time investment between both conditions was approximately 30 min. However, as shown in Table 5, mean time investment between hospitals showed more variation than between conditions, indicating a potential inaccurate assessment.

DISCUSSION

The results of this study clearly indicate that compliance with out-patient aftercare among patients referred to the psychiatric emergency department can be improved by a number of interventions. Although the proportional increase in one hospital was not significant, approximately two-thirds to three-quarters of patients followed through with referral in the 'special care' condition. Compared with the available literature, compliance in the special care condition in all three hospitals was satisfactory. Team members of hospital B appeared to have a more sophisticated routine before the start of the experiment. This may explain the higher proportion of patients who complied with referral in the 'usual care' condition. As a result the increase of referral compliance in this hospital was smaller and failed to reach a significant level. Evidence for the positive effect of special strategies in increasing referral compliance was limited to out-patient referrals organised within the hospital. Referral for out-patient aftercare by external facilities was rare in the two hospitals showing the strongest effect size.

A second finding of this study is that the effect of the special interventions of the crisis unit team at the ED continues during the first months of aftercare treatment. In hospital A and C significantly more patients from the experimental referral strategy remain in treatment 4 months after the referral. In hospital B the positive trend disappeared, due to a larger dropout in the experimental patient group.

After completion of the study, a discussion of the results with the clinical teams of the hospitals revealed that the large difference in time investment between hospitals was most probably related to different scoring strategies. Team members in hospital B usually worked as a team with their patients. This implied that, compared to the other services, average time investment in this hospital was multiplied by two or three. However, although the method to estimate the total time invested in activities aimed at fostering referral compliance was probably inaccurate, the results offer an indication of the extra time needed to provide 'special care'. On the average, the application of the experimental strategy took approximately 30 min extra time in the

three centres. Therefore it could be argued that, given the availability of sufficient personnel at the ED, the experimental strategies should be routinely included in the referral procedure. The majority of previous studies investigating compliance with out-patient aftercare were limited to one setting. Therefore, the results were likely to be influenced by the availability of local mental health care facilities. This study tried to overcome this limitation by conducting the same study in three different areas. Although the main results show a comparative consistency, a number of findings limit the generalizability of our results and their relevance for clinical practice. A first limitation is the predominance of referrals to aftercare within the institution in the two hospitals where the strongest effect was found. If the psychiatric out-patient facilities of the hospital are limited and the ED staff has to refer more often to external facilities, the effect size may be smaller. Most probably, more time will be needed to make arrangements for aftercare, as was found in hospital B. Since availability of time will always remain a problem at the ED, clinicians will have to make a choice between investing their time in problem assessment, problem resolution or preparation of out-patient aftercare. Additional research is needed to assess which strategies are most cost-effective in different hospital settings and under what conditions.

A second limitation is the absence of specific intervention protocols describing the experimental referral strategies in detail. Moreover, the participating teams were allowed to make a choice out of a list of different interventions. While the freedom to plan a strategy for an individual patient resulted in excellent co-operation of the participating teams, it remains unclear which intervention or combination of interventions was most effective. In order to obtain some information about the relative contribution of the specific strategies used, we compared the presence of specific interventions in the experimental condition separately. It appeared from this exploration that the involvement of the family in the aftercare referral had the strongest effect, followed by the use of a fixed appointment and finally the use of the 'triangulation technique' (De Clercq, 1990), e.g. arranging for the patient a pre-discharge session with the aftercare therapist. However, because a

combination of strategies was applied in a majority of cases, no clear-cut effect could be assessed. Therefore, the value of this exploration remains doubtful. Furthermore, the present study did not provide specific guidelines to be followed when a specific strategy was chosen. This implies that the actual provision of 'special care' in the three hospitals may have differed substantially, despite the fact that teams and coordinators of the three hospitals exchanged information intensively before and during the experiment.

A third limitation is related to patient selection. Since certain patient groups (drug abusers, patients discharged against medical advice or discharged during the weekend and at night) were excluded, overall efficiency of ED practice would probably have been lower if the whole patient group was monitored.

In conclusion, this study does not offer clear indications as to what combination of arrangements will give the best results for a given patient. However, it is clear from this and previous studies, that a good referral strategy should include the arrangement of a fixed appointment in the near future. In addition, the involvement of the family, and the establishment of a direct communication between the patient and the aftercare professional appear to lead to an important increase of patients complying with the referral. Interventions directed at increasing the patient's motivation is a strategy, which is perhaps better planned during the initial phase of the out-patient aftercare. Moreover, for a treatment engagement over an extended period of time different interventions may be necessary. Both the operand behavioural model and the health belief model offer techniques that can be considered, e.g. the provision of incentives (Higgins *et al.* 1994) or focussing on the benefits of treatment and on illness risks (Jones *et al.* 1991).

It is clear from this and previous studies, that all attempts to increase aftercare compliance will continue to be of limited success. A proportion of patients will not comply with the referral because their substance abuse or mental disorder prevents their compliance with any therapeutic programme. Others will not comply because they doubt their illness condition or they are not convinced that they will benefit from out-patient treatment. Then the ED will be the treatment

setting by default in which case, however, the adoption of a long-term treatment perspective by the ED staff is of even greater importance. Subsequent visits of these patients to the ED can and should be used to gradually develop a therapeutic relationship (Bassuk & Gerson, 1980). If, perhaps after several crisis episodes, a therapeutic working alliance has been established, a new attempt at referral for out-patient treatment can be made.

This study is part of a larger evaluation research commissioned by the federal Minister of Social Affairs of Belgium. The authors wish to acknowledge the cooperation of the supervisors and staff of the following psychiatric emergency departments: General Hospital 'Stuivenberg', Antwerp (Dr R. Beunis and R. De Snyder); 'Brugmann' University Hospital, Brussels (Drs P. Minner and I. Pelc); Public Hospital of Marchienne-au-Pont (Drs R. Guillaume and J. Wilmette). We would like to thank A. Soetewey, C. Nys and A. Hubert in particular for their efforts to collect complete data. The authors further wish to thank all out-patient facilities for their collaboration.

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