# 11. Exposure In-Vivo with Panic Management for Agoraphobia: Treatment Rationale and Longterm Outcome

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## 1. Introduction

During the 1970's a series of international treatment studies, pioneered and led by British groups from London and Oxford, seemed to have established some of the best documented and validated, highly specific short-term treatments for a rather chronic illness in the whole field of psychotherapy research: exposure in-vivo for agoraphobia. Since the beginning of this decade, parallel to the introduction of DSM-III, an increasing amount of basic research and clinical studies on panic disorder, panic attacks and agoraphobia with panic attacks seems to question this empirical and experimental knowledge.

In this paper, we shall present data from a multivariate, long-term prospective and retrospective follow-up study with agoraphobics after short-term exposure treatment. This is the first study to compare directly immediate and long-term effects of the three most popular modes of exposure in vivo: individual and group exposure (therapist aided) and Home Based Treatment (HBT; manual aided). This is also the first follow-up study with agoraphobics to simultaneously investigate: comparative outcomes in mild and severe, mono- and multisymptomatically disturbed agoraphobics; comparative assessment of "gainers" and "losers" from treatment, as well as their "multisymptomatic development" during treatment and follow-up.

All self-rating scales were used before and during treatment as well as throughout all follow-up assessments (prospective part of the study). At their last follow-up, patients also received a detailed, structured interview for current and retrospective evaluation.

Most patients had received psycho-pharmacological treatment before exposure and

were taken off such medication before exposure started.

This study supplements a series of previous follow-up investigations with agoraphobics that have set standards in psychotherapy research: Marks 1971; Emmelkamp and Kuipers 1979; McPherson et al. 1980; Munby and Johnston 1980; Cohen et al. 1984.

Although these studies show vast differences in kind and extent of treatment procedures, assessment instruments, criteria of success, and length of follow-up they agreed to the following: two thirds to three fourths of the patients showed clinically relevant and statistically significant reductions of their phobic avoidance and complaints; positive changes tended to generalize to other neurotic complaints (the mostly assessed variable being depression); personal and social functioning of two thirds of these patients improved enduringly; interference of phobia with daily life and professional activities was clearly reduced. Nevertheless, all these studies also indicated that at least 25% to 33% of the patients treated did not improve. Also, some shortcomings of previous follow-ups, that limit their generalizability, need to be mentioned: the study by McPherson et al. included only those patients who had improved after treatment and of those only 69% participated in follow-up; the Emmelkamp and Kuipers study relied entirely on postal follow-ups with clinical self-rating scales; the Cohen et al. study did not report effects of therapy on daily life and professional activities. Nevertheless, all studies with exposure for agoraphobia and with long-term follow-up are models for psychotherapy research: 1. a highly specific, short-term treatment is applied to a rather chronic disorder, and 2. changes are assessed over longer periods of time. By this, clear conclusions can be reached regarding specific treatment effects as opposed to changes due to other life events (Lambert and Bergin 1978; Agras and Berkowitz 1980; Barlow and Wolfe 1981). Even in behavior therapy, such studies made up 1% of the articles published until 1979 (Agras and Berkowitz 1980).

Before we present the results of our study, our exposure concept will be described in some detail, as it may make some of our results more understandable.

## 2. Experimental Design

From 1976 to 1983 some 250 agoraphobic patients received intake interviews in our unit. The demand for treatment by far exceeded this number.

In 1984, we started a 1–8 year follow-up (FU) study with these patients. For methodological reasons patients had to be split into two groups: study I, 1–4 years (1980–1983) and study II, 5–8 years (1976–1979) after treatment. In 1980 we had introduced a new set of self-rating scales for neurotic multisymptomatology (c.f. Hand and Zaworka 1982), which since has been given to all our patients throughout treatment and follow-up. Here, we shall report the data from the first group (study I).

Main aims of both studies are: 1. multivariate assessment of the long-term "field efficacy" (Agras and Berkowitz 1980) of a short and highly specific treatment, and 2. comparison of patients who were improved in their phobia at FU (gainers) with those who were not (losers) to identify reasons for and consequences of "failures in behavior therapy" (cf. Foa and Emmelkamp 1983).

This study is a combination of a **prospective** (data from symptom self-rating scales) and a **retrospective** (data from a structured interview) follow-up.

### 2.1. Treatments: Exposure In-Vivo and Panic Management

Patients received one of the following modes of exposure in-vivo as their main and usually only intervention: individual exposure; group exposure; Home Based Treatment (HBT). Therapist-aided exposure (first two modes) was conducted according to the exposure-panic management

concept developed by Hand et al. (1974). It is applied within three to five treatment days over one or two weeks, respectively. For HBT we used our authorized German translations (publication in preparation) of the manuals for patient, spouse and therapist, developed by Matthews et al. (1977, 1981). HBT patients had five brief contacts with the therapist in his office over a period of four weeks.

Over the past ten years, *exposure in-vivo* has been recognized as the most effective single treatment intervention in clinically relevant phobias, particularly in agoraphobia (detailed reviews in Marks 1975; Mathews et al. 1981; Chambless and Goldstein 1982; Thorpe and Burns 1983; Thorpe et al. 1984). Early warnings about potential dangers of exposure in-vivo arose from misunderstandings or misapplications of this treatment technique. Shipley and Boudewyns (1980), in an international survey which comprised some 3500 patients, could demonstrate that harmful effects are extremely rare events. More recent publications on the importance of antidepressant medication as an essential, additional treatment to exposure in-vivo, or even as the single most effective treatment for "agoraphobia with panic attacks" (Sheehan et al. 1980; Zitrin et al. 1980; Klein 1981; Mavissakalian et al. 1983), as yet have not proven their claims. They show a tendency to dismiss well established results from behavior therapy. Also, these studies do not constitute comparisons of proper exposure in-vivo versus medication. With their generalized claims with regard to their panic model and its therapeutic consequences, they may turn out more clinically misleading than stimulating (cf. Marks 1983; Hand 1984; intense controversial discussions of this issue in Archives of General Psychiatry since 1983).

*Group exposure in-vivo* probably has become the most widely used therapist-aided application of exposure for agoraphobics. Yet, important elements of the original mode by Hand et al. (1974) seem to have been omitted in some of the subsequent studies. As they remained essential in the Hamburg study – which includes a long-term, multiple replication of the 1974 Maudsley study – they are to be emphasized again:
a. Panic (peak anxiety) management; b. Depression and "emotional distress" management; c. High group cohesion for mutual support and motivation.

*a. Panic management:* is the second (to behavioral exposure itself) most important element in this treatment concept. Therefore, patients are taken off psychotropic medication for at least one week before exposure – even if this induces withdrawal symptoms from previous tranquilizer medication. Ideally, patients are to experience exposure under difficult environmental and emotional conditions, in order to rebuild lasting self-confidence. Patients should not experience in-vivo sessions as easier than phobic daily life conditions – otherwise they would maintain the phobic anticipatory anxiety of not being able to cope "when it really comes to the worst". In particular, patients who had panic attacks in and outside phobic situations prior to treatment are to experience those as early in exposure as possible ("exposure proper" for agoraphobia with panic attacks). The therapist takes care, that his "prescription" of panic does not have the reverse effect in the sense of a paradoxical intervention.

Confrontation even with the most feared situations is tried already on the first treatment day. Experience of peak anxiety (panic) usually lasts for some to ten, rarely up to twenty minutes. As soon as patients report a definite decline of high or peak anxiety in the same situation that seemed to have raised it, the next phobic situation is entered. The criterion for moving is the patient's experience-induced new cognitive response: "I can cope." Instructions during exposure are simple, though difficult to follow at the beginning: "Allow all your feelings to grow; observe and describe to yourself the reality of your surroundings and the sensations of your body; do neither phantasize your phobic phantasies, nor try to suppress anxiety or other unpleasant feelings by mental or motor avoidance manoeuvers; try to give yourself always another ten seconds to tolerate the situation or your own, almost unbearable responses to it."

Under those conditions, which may lead to a "corrective emotional experience", most patients develop their own "cognitive restructuring" with regard to the phobic situation and their responses to it. Obviously, this approach works best with those patients who have experienced panic in the past and are lucky to experience it early during exposure. In groups, these patients are the most convincing models for their peers.

So far, there are no publications that convincingly reveal an impact of the level of "anxiety during exposure" upon outcome of treatment. But, the usual procedure of computing mean anxiety levels over hours of exposure seems bound to hide relevant information. In our unit, Priebe (1980) found that agoraphobics who had repeatedly experienced high "fluctuations of anxiety" (i.e. rapid decreases of acute peak anxiety states) during treatment did best at the end of treatment and in short-term follow-up. They did not necessarily have the highest mean anxiety ratings over a whole exposure session. This result seems to confirm the clinical impressions described, e.g. in the 1974 Maudsley study.

*b. Depression and "emotional distress" management* is conducted the same way. Agoraphobics frequently complain about intermittent states of severe depression, which may be closely linked to feelings of insufficiency and lowered self-esteem resulting from humiliating experiences as a phobic.

But, depression can also follow the experience of success, e.g. in exposure treatment. After the usual experience of impressive decreases of phobic anxiety during the first treatment day, patients often go home in an elevated, almost hypo-manic mood. But, in the following night they tend to have nightmares – experiencing in their dreams all those disasters that did not occur during exposure. Typically, when the second exposure session is due (by design) one day later, they come depressed and almost too scared to be daring again. This state of mood and mind is "re-labeled" by the therapist: the bad mood and low spirit being interpreted as a unique chance for the patient to experience in subsequent exposure this very day that coping with anxiety and depression is possible, and that this experience by itself might become the optimal antidepressant. And this is what actually happens to the "gainers" in treatment.

We never raise the expectation that treatment will completely eliminate episodes of anxiety or depression. Instead, we want to provide the real-life experience that the consequences of "giving in" to those feelings on a motor-behavior level probably create to a large extent the "illness" of chronic agoraphobia. If disconnected from phobic anticipatory cognition (with low self-esteem), the occurrence of further anxiety attacks and depressive episodes will, for the majority of patients, be rare and usually manageable events.

*c. High group cohesion:* was tried to be achieved in all our groups, following the procedure described for the highly cohesive groups in the Maudsley study. High cohesion probably is the single most powerful motivational variable for cooperation in exposure in-vivo (cf. Hafner and Marks 1976).

Some additional, important aspects of this exposure concept are:

– Intermittent escape is allowed in our approach, though never encouraged. It appears important not to threaten a patient's autonomy by contracts in which he subscribes himself to "being held" in the phobic situation if he cannot manage to do so by himself. Some treatment centers seem to apply much more direct external control, and patients not infrequently seem to expect, and to be afraid of, such a therapist attitude. Though this attitude may seem plausible from learning theory concepts, it appears rather dangerous from an interactional point of view. Therefore, when intermittent avoidance occurs, we try to reassess motivation for change (in phobic as well as in daily life activities) with the patient – and this usually leads to the patient's decision to enter the situation again at his own will.

– During the three to five treatment days patients are to learn to believe in their coping ability with peak anxiety and other un-

pleasant emotions and bodily sensations – rather than to expect to become immediately free of it. The latter is rather to be expected from long-term, continued self-exposure and increasing alternative behavior after treatment. Treatment is interpreted as a brief challenge to a stereotyped phobic self-concept and way of life – and it is tried to convince the patient that it is his choice what to make of it.

– This exposure concept emphasizes the main role of exposure of the patient to his own responses, rather than to the phobic trigger situation. *The experience of panic in a phobic trigger situation is mainly used to teach management of panic rather than tolerance of the trigger situation.* With such a concept, it becomes less important whether panic attacks do occur only in phobic situations or "anywhere". One also has to consider that quite some "spontaneous" panic attacks may result from cognitive anticipatory exposure to phobic situations, not always detected in the clinical interviews. To give an example of exposure to the own response: a thunderstorm phobic was treated by inducing his main phobic complaint, severe dizziness, in the treatment office and by teaching him coping responses; subsequently he was able to expose himself to the next real thunderstorm without any major problems. Even extreme physiological panic responses can be modified with this concept in one treatment session, like, e.g. fainting in a blood phobic, with twenty seconds of "silence" in his electrocardiogram (Hand and Schroeder 1980).

– In quite some patients, high emotional arousal during exposure spontaneously leads to continued behavioral (self-)analysis of previously not available information; it may thus extend the areas of intervention (Hand 1986).

For Thorpe et al. (1984) this group exposure concept, published in 1974, seems very similar to contemporary cognitive-behavioral procedures. In particular, they see these similarities to Bandura's (1978) concept of self-efficacy, with the notion that confidence rather than fear is modified in effective treatment. The "behavioral panic management" in group exposure in-vivo also seems to be in accordance with latest developments in "cognitive" psychology, which recently has come to favor a "motor theory" of cognition again (Mahoney 1983).

The panic management element in *group exposure* was applied to the *individual exposure* in our trial as well. In contrast, there are quite a few major differences in the coping concept used in HBT. This does not deliberately induce peak anxiety or panic. Rather, it encourages avoidance of intense emotional states, as the patient applies exposure either alone or with the help of his spouse. Speed of exposure is left entirely to the patient, as is the choice of distance from home for self-exposure. Thus, within the first few weeks or months after treatment, patients with therapist-aided exposure generally have done far more exercises further away from their homes than patients in HBT. We shall see later how this affects immediate and long-term outcome.

## 2.2. Patients

*Criteria for diagnosing "agoraphobia"* were much the same as in the British studies (cf. Marks 1970). The majority of our patients would also have been diagnosed as "agoraphobics with panic attacks" according to DSM-III. We diagnose a patient "agoraphobic" and appoint him to the respective treatment, regardless of sub-symptomatology like hyperventilation, tachycardia, severe perspiration or the expectation of fainting or going crazy. Provided these sub-symptoms are clearly secondary to the typical agoraphobic behaviors and cognitions, this symptomatology will also be secondary in exposure treatment.

"Cardiac phobia" would be regarded a sub-symptom of agoraphobia, if it mainly existed in connection with agoraphobic situations. On the other hand, we would give the main diagnosis of "cardiac phobia" in a patient who is primarily worried about the health of his heart, even if one possible secondary consequence of this would be severely restricted outdoor living (secondary agoraphobia). This patient would in many aspects receive quite a different treatment from that of an agoraphobic. With this kind of diagnosing, it

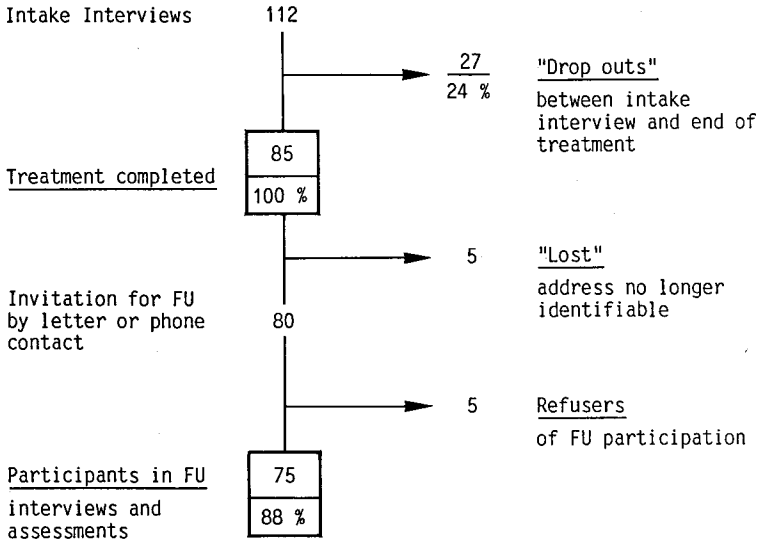


**Table. 1.** Agoraphobic patients in the Hamburg Behavior Therapy outpatient unit 1980–1983

turns out that the vast majority of "cardiac phobics" in our unit are male, whereas the vast majority of agoraphobics are female.

From 1980–1983 we conducted altogether 112 intake interviews with agoraphobic patients.

Table 1 shows that of these 112 patients, 27 (24%) did not participate in, or complete, treatment. A similar "drop-out" rate has been reported from other centers. It comprises very heterogeneous subgroups – including those who: a. successfully applied exposure by themselves after having been explained the principle in the intake interview (cf. Hand et al. 1974); b. found other therapists while on our waiting list (of 3–12 months!); c. dropped out of exposure treatment. A separate follow-up of all these patients is currently under way.

Of the 85 patients who had completed treatment, five could not be located any more, and another five were unwilling to participate in FU. With 88% of the treated patients participating in the interviews and test assessments, results can be regarded as fairly representative for the whole sample treated.

The 75 FU participants are to be devided into four subsamples with regard to *length of follow-up:* ≦18 months, n=12 (16%); ≦30 months, n=31 (41%); ≦42 months, n=16 (21%); >42 months, n=16 (21%). Thus, 83% had a follow-up of more than 1.5 years, including the 42% with more than 2.5 years. Length of FU did not affect outcome. Patients' demographic data are summarized in Table 2.

The vast majority of patients were female, living with a spouse, around 32 years old, agoraphobic for about 6.5 years, and 95% had sought professional help prior to behavior therapy. About half of them were working outside their family.

### 2.3. Assessments

A battery of self-rating instruments was employed in order to simultaneously assess the presence and the *development over time* of a variety of neurotic symptoms. This seemed necessary, as agoraphobics – like other more severely disturbed neurotics – frequently suffer from severe multisymptomatology (cf. Chambless and Goldstein 1982; Thorpe and Burns 1983). A new methodological approach for this kind of "time-dynamic" assessment has been proposed by Hand and Zaworka (1982).

The following self-rating scales were used:

*Main phobia:* Fear Survey Schedule, FSS (Hallam and Hafner 1978), subscale agoraphobia. "Behavioral Resistance Scale", BRS, a 99 mm visual analog scale, devel-

**Table 2.** Demographic data

| | | |
|---|---|---|
| No. of cases | 75 | |
| Sex: | | |
| Female | 63 (84%) | |
| Male | 12 (16%) | |
| Age | $\bar{x}=32.40$ | (s=8.24; range 18–54) |
| Symptom duration | $\bar{x}=6.76$ | (s=5.14; range 1–19) |
| Years from onset of illnes to first therapist contact | $\bar{x}=4.33$ | (s=4.06; range 0–19) |
| Treatment prior to exposure | 71 (95%) | |

| Occupational status: | | Marital status: | |
|---|---|---|---|
| Work outside family | 42 (56%) | With spouse | 59 (79%) |
| House-wife/man | 19 (25%) | Without spouse | 16 (21%) |
| Unemployed | 10 (13%) | | |
| Sick leave/pens. | 2 (3%) | | |
| Missing data | 2 (3%) | | |

oped in our unit to assess the extent to which a person is able to continue "alternative motor behavior" in spite of cognitive-emotional phobic reactions. This is the reverse formulation of behavioral avoidance to indicate the degree of motivation to resist or to overcome phobic impulses. Finally, patients' subjective estimate of symptom interference with daily life activities is assessed on a similar 99 mm scale. We did not use a behavioral avoidance test, as this does not seem to give very reliable information about the actual avoidance in daily life (Hand et al. 1974).

*Other phobias:* FSS-subscale social anxiety and FSS-total phobia score, including animal, blood-injury and other specific phobias.

*Other symptoms:* Depression scale, DS, by v. Zerssen (1976), which correlates 0.8 with the British Wakefield scale; Hamburger Zwangs-Inventar, HZI, for obsessions and compulsions (Zaworka et al. 1983; English translation available from the authors); scale I, functional somatic complaints, of the Freiburger Persönlichkeitsinventar, FPI-A (Fahrenberg et al. 1973, 1984) – this trait-scale has a 0.75 correlation with a state-scale on functional somatic complaints, consisting of 78 items (Freiburger Beschwerdeliste, FBL by Fahrenberg 1975). Criteria for selection of these scales are described in Hand and Zaworka (1982).

*Trait scales:* Freiburger Persönlichkeitsinventar (s. above). In all subsequent tables, symptom ratings will be shown in this sequence.

Assessment intervals: Assessments were made *pre-treatment (T1), post-treatment (T2), 6-months (T3) and long-term FU (T4).* Patients had advance knowledge of the follow-ups.

An additional structured FU interview was developed and applied by two of the authors (Angenendt and Fischer), who had had no prior contact to the patients. The following areas were covered:

*Symptom-related variables:* The Marks and Watson (1971) Scales on Phobic Anxiety and Avoidance were used as a structured interview, emphasizing the semantic "meaning" of each point on the 0–8 scales.

*Symptom development after treatment:* was indirectly assessed by the examination of additional treatments, psychotropic medication, relapses, development of additional complaints ("symptom substitution"), and of the impact of life-events upon symptom development.

*Daily-life activities:* Again the Marks and Watson Scales were used as a structured interview for interference of symptomatology with daily-life activities: marital and family

relations; housework; occupation; leisure activities; social contacts; psychological well-being.

*Retrospective evaluation of treatment by patients:* comprised their causal attribution of symptom change, their experience of the therapeutic relationship, and negative experiences during or immediately after treatment. It was also tried to get patients' suggestions for changes in, or improvement of, treatment.

Data analysis: *The statistical methods* applied for data analysis will be mentioned with each step of the data presentation.

# 3. Results

## 3.1. Outcome for Total Patient Sample

### *3.1.1. Symptom Scales: Prospective Follow-Up*

For the total patient sample (n = 75), all symptom ratings on each occasion (T1–T4) are summarized by the group means (x), standard deviation (s) and the number of patients who completed the ratings (Table 3).

Better than curves or histograms, the layout of significance levels for symptom changes during treatment and follow-up intervals allows a quick assessment of relevant treatment effects as well as time-dependency of changes in different symptoms (Table 4).

Results in Tables 3 and 4 suggest the following treatment effects over time on multisymptomatic disturbance: MANOVA (Nie et al. 1980) with repeated measures on one variable reveals highly significant (SSS) changes on all variables between T1 and T4. T-tests for dependent samples for the treatment and the follow-up phase separately show clear differences in the time sequences of changes for different groups of variables. Treatment induces highly significant changes on all variables, whereas in the follow-up phase we find further significant (s) and very significant (ss) improvements only in those symptoms that were not directly tackled in treatment (cf. discussion). But, results with the gainers alone

**Table 3.** Symptom development over time: total sample (n = 75)

| Symptoms | Pre-treatment (T1) | | | Post-treatment (T2) | | | 6-month FU (T3) | | | Last FU (T4) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | x̄ | (s) | N | x̄ | (s) | N | x̄ | (s) | N | x̄ | (s) | N |
| *Agoraphobia* | | | | | | | | | | | | |
| Agoraphobia | 23.03 | (6.66) | 73 | 15.24 | (7.95) | 68 | 14.54 | (7.47) | 57 | 13.76 | (8.63) | 72 |
| Behavioral resistance | 40.03 | (28.53) | 72 | 65.82 | (22.16) | 65 | 69.44 | (21.61) | 57 | 68.03 | (26.19) | 72 |
| Interference | 67.58 | (21.44) | 72 | 43.83 | (26.38) | 65 | 34.23 | (26.02) | 57 | 36.50 | (28.56) | 72 |
| *Other phobias* | | | | | | | | | | | | |
| Social anxiety | 8.86 | (4.79) | 73 | 7.47 | (5.10) | 68 | 7.25 | (4.25) | 56 | 6.43 | (4.82) | 72 |
| Phobias – total score | 59.67 | (18.02) | 73 | 46.97 | (20.69) | 68 | 45.67 | (20.33) | 57 | 41.49 | (21.10) | 72 |
| *Other symptoms* | | | | | | | | | | | | |
| Depression | 19.89 | (9.43) | 72 | 14.59 | (8.56) | 69 | 13.98 | (9.78) | 57 | 11.35 | (9.32) | 72 |
| Obsessions-compulsions | 3.07 | (1.76) | 72 | 2.38 | (1.71) | 68 | 2.23 | (1.66) | 57 | 2.00 | (1.52) | 64 |
| Functional somatic complaints | 7.22 | (1.76) | 73 | 6.62 | (2.00) | 69 | 6.39 | (1.98) | 56 | 6.00 | (2.19) | 70 |

**Table 4.** Symptom development over time: when does improvement occur? Total sample (n = 75)

| Symptoms | Manova*: | | | T-test**: | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Mean effect time | | | Intervention phase T1–T2 | | | Follow-up-phase T2–T4 | | |
| | F | p | sig | T | p | sig | T | p | sig |
| *Agoraphobia* | | | | | | | | | |
| Agoraphobia | 29.02 | 0.000 | sss | 9.46 | 0.000 | sss | 1.56 | 0.124 | ns |
| Behavioral resistance | 14.06 | 0.000 | sss | −6.55 | 0.000 | sss | −0.93 | 0.355 | ns |
| Interference | 28.61 | 0.000 | sss | 7.29 | 0.000 | sss | 1.97 | 0.053 | ns |
| *Other phobias* | | | | | | | | | |
| Social anxiety | 9.78 | 0.000 | sss | 2.95 | 0.004 | ss | 2.01 | 0.048 | s |
| Phobias – total score | 22.05 | 0.000 | sss | 7.18 | 0.000 | sss | 2.31 | 0.024 | s |
| *Other symptoms* | | | | | | | | | |
| Depression | 16.21 | 0.000 | sss | 6.15 | 0.000 | sss | 2.81 | 0.007 | ss |
| Obsessions-compulsions | 10.81 | 0.000 | sss | 4.65 | 0.000 | sss | 2.69 | 0.009 | ss |
| Functional somatic complaints | 10.42 | 0.000 | sss | 5.23 | 0.000 | sss | 2.94 | 0.005 | ss |

ns ≈ p > 0.05; s ≈ p ≦ 0.05; ss ≈ p ≦ 0.01; sss ≈ p ≦ 0.001

* Results of analyses of variances for repeated measurements

** Results of T-tests for dependent samples

are quite different (3.3.2.). It is important to note that at pre-treatment on the individual level there is no straight correlation between level of phobic anxiety and degree of behavioral resistance (avoidance): Pearson's r = 0.15.

### *3.1.2. Interview Data: Retrospective Follow-Up*

*Changes in phobic anxiety:*
At follow-up, 33 (44%) patients rated *no or low* anxiety (0–2), 23 (31%) *slight to medium* anxiety (3–5) and 19 (25%) *severe* anxiety to panic (6–8).

The total phobia score from the assessors Marks/Watson interview correlates 0.8 with patient's self-rating on FSS-agoraphobia.

At follow-up, still 30% of the total sample experience medium (four patients of the slight to medium group scored 5) to severe anxiety in agoraphobic situations. This corresponds with the fairly high group mean of 14 on the FSS-agoraphobia scale (Table 3) at last follow-up, which is probably due to much higher ratings of these 30% of the total sample, with gainers then showing much lower means (cf. 3.3.2).

*Changes in interference of phobic symptomatology with daily life activities:* reveal a similar outcome to that on phobic anxiety (Table 5).

Before treatment, by far the highest interferences of agoraphobia had occurred in psychological well-being, and in occupational and leisure activities. In all areas of daily life there is a strong reduction in the percentage of patients that experience a severe degree of interference, paralleled by a strong increase of those who experience none or low interference. Results, however have to be interpreted with caution, as the "pre-treatment" scores are derived from patients' retrospective assessments. Assessors' ratings of phobic interference correlate 0.82 (Pearson's r) with patients' FSS-agoraphobia ratings at follow-up – i.e. losers experiencing persistent high phobic anxiety are also severely restricted with regard to everyday functioning.

*Additional treatments during follow-up:*
Treatments during follow-up may be regarded as indicaters of further subjective

**Table 5.** Interference of agoraphobia with daily life activities (Structured interview with Marks/Watson scale)

| Daily life activities | Degree of interference<br>0–2 = none or low<br>3–5 = slight to medium<br>6–8 = severe | Percentage of patients | |
|---|---|---|---|
| | | Pre-treatment (retrospective evaluation!)<br>% | Last FU<br>% |
| | $\bar{x}$ / (s) | 3.42 / (3.10) | 1.53 / (2.05) |
| Marital relations | None or low | 45 | 76 |
| | Medium | 23 | 18 |
| | Severe | 32 | 6 |
| | $\bar{x}$ / (s) | 3.27 / (3.06) | 1.14 / (1.73) |
| Family relations | None or low | 48 | 81 |
| | Medium | 18 | 15 |
| | Severe | 34 | 4 |
| | $\bar{x}$ / (s) | 6.06 / (2.53) | 2.41 / (2.81) |
| Occupation | None or low | 12 | 62 |
| | Medium | 14 | 18 |
| | Severe | 74 | 20 |
| | $\bar{x}$ / (s) | 2.72 / (2.83) | 0.61 / (1.14) |
| Housework | None or low | 55 | 96 |
| | Medium | 18 | 3 |
| | Severe | 27 | 1 |
| | $\bar{x}$ / (s) | 5.85 / (2.45) | 2.45 / (2.56) |
| Leisure activities | None or low | 12 | 55 |
| | Medium | 16 | 26 |
| | Severe | 72 | 19 |
| | $\bar{x}$ / (s) | 4.40 / (2.97) | 1.38 / (2.17) |
| Social contacts | None or low | 29 | 80 |
| | Medium | 28 | 12 |
| | Severe | 43 | 8 |
| | $\bar{x}$ / (s) | 6.75 / (1.88) | 2.63 / (2.49) |
| Psychological well-being | None or low | 3 | 51 |
| | Medium | 18 | 33 |
| | Severe | 79 | 16 |
| Total | $\bar{x}$ / (s) | 31.91 / (11.75) | 12.11 / (11.08) |

suffering. Table 6 gives some idea of the frequency and kind of treatments patients received during FU.

Whereas 95% of the patients had seen their GP or psychiatrist more or less regularly before treatment, only 47% had done so during follow-up, and with a lower frequency. Ratings in the second half of the table include double and triple ratings of single patients! When the low and the higher frequency visits to GP, psychiatrist and psychotherapist are taken together, treatment has reduced visits to GPs by some 75% and visits to psychiatrists and psychotherapists by some 50%. Psychotropic medication (mainly tranquilizers) was taken by 80% of the patients before exposure, but only by 25% at follow-up. This reduction in medication is not only important with regard to cost-effectiveness of treatment, but also with regard to health risks due to pharmacological treatment of

**Table 6.** Frequency of therapist contacts and psychotropic medication before and after exposure treatment (Average observation period 2 years)

| *Therapist contacts* | Pre-treatment (2 year period) | | During FU | |
|---|---|---|---|---|
| | n | % | n | % |
| None at all | 4 | (5%) | 40 | (53%) |
| ≦4 per year | 26 | (35%) | 15 | (20%) |
| >4 per year (∅ 12 pre-treatm. ∅ 8 during FU) | 45 | (60%) | 20 | (27%) |
| | 71 | (95%) | 35 | (47%) |
| Σ | 75 | (100%) | 75 | (100%) |
| *Kind of therapists/treatment* | 1–4 times | | >4 times | |
| | Pre-treatment | Follow-up | Pre-treatment | Follow-up |
| General practitioner | 12 | 6 | 32 | 5 |
| Psychiatrist | 21 | 12 | 31 | 15 |
| Psychotherapist | 9 | 3 | 18 | 11 |
| Psychiatric hospital | 5 (2 years bef. tr.) 7 (>2 years bef. tr.) | 2 | – | – |
| | Pre-treatment | | During FU | |
| Psychotropic medication | 61 | (79%) | 19 | (25%) |

agoraphobia. Agoraphobics run a strong risk to develop secondary drug dependency (tranquilizers and alcohol; cf. Wittchen, in this volume). Recently, they also seem to run a strong risk of long-term antidepressant medication, as treatment of agoraphobia with imipramin is said to be the "typical clinical practice" in the United States (Mavissakalian et al. 1983).

The question arises to what extent the treatments and medication during follow-up were able to alleviate the suffering of those patients (some 30%) who did not benefit from exposure treatment (details in 3.3.4.).

*Patients' attribution of change:*
Of the 59 patients who had reported improvement on a subjective improvement scale, 54 attributed this either to exposure treatment alone (20 patients) or to the combination of exposure and helpful life-events (34 patients).

Regarding exposure treatment itself, the most frequently rated positive experiences were: continuous confrontation with the real feared situation; experience of own coping skills with anxiety; and acceptance of responsibility for own actions.

How often, on the other hand, is exposure in-vivo remembered as a painful or harmful experience? 53 (70%) of the total sample (including the losers) did not report any such experiences at all. The remaining 22 (30%) mentioned the following complaints: unpleasant distress during exposure (6 patients); acute relationship problems immediately after treatment (6 patients; cf. Hand and Lamontagne 1976); brief intermittent new phobias (3 patients). The other seven patients mentioned specific individual complaints.

These complaints were reported by twelve (23%) of the 51 gainers, and ten (41%) of the losers in treatment, i.e. they are to some extent independent of treatment outcome. 56 (74%) patients suggested changes in our treatment program. Of these, 18 came out of the 24 losers (75%) and 38 out of the 51 gainers (75%), sugges-

tions apparently being independent of treatment outcome. Several patients made more than one of the following suggestions: 28 wanted more exposure sessions and 15 more intensive pre- and post-exposure discussions; 13 (30% of the 43 who had received group exposure) wanted the groups to be more homogeneous with regard to phobic symptomatology in order to get better tailored exposure for themselves; three wanted a closer contact to their therapist in individual or group exposure, and another three more therapist contact in HBT; four would have liked a more convincing identification of the causes of their illness; finally, four would have liked to continue group treatment as a self-help group.

In essence, five of the seven groups of suggestions for change were pleas to get more of what had been given; only two asked for qualitative changes. It appears to be in the nature of man to ask for more of what feels good – even if that may not do good.

### *3.1.3. Comparison of Outcome with Three Different Modes of Exposure*

For the comparative assessment of the effects of the three modes of exposure we computed the individual change score (T1–T4) in percentage of the ratings before treatment (percentage change score). Results (group means and standard deviation of percentage change scores), together with those of the total group, are shown in Table 7.

Eye-ball analysis seems to indicate a superiority of group exposure and HBT compared to individual exposure, and possibly a stronger anti-depressant effect of group exposure compared to HBT.

ANOVA did not reveal significance for the difference in the depression change score between group exposure and HBT. But, in social anxiety (!), total phobia and functional somatic complaints individual exposure appears significantly less effective than the other two conditions ($p < 0.001$ to $p < 0.01$).

Surprisingly, the numerically large differences between individual exposure and the two other treatments in agoraphobia are not significant. The comparatively low number of patients who received individual exposure and the high standard deviation particularly in this treatment condition require caution for an evaluation of the individual exposure in this study. This is also shown by the "subjective" improvement ratings of the patients. Of the group exposure and HBT patients some 80% rated improvement compared to some 70% of those with individual exposure – which appears a much smaller difference than in the previously reported ratings. A much more

**Table 7.** Symptom development over time: Percentage change scores T1 (pre) – T4 (last FU) for total group and three modes of exposure in vivo

| Symptoms | Total group (n = 75) | | Individual exposure (n = 13) | | Group exposure (n = 43) | | Home-based treatment (n = 19) | |
|---|---|---|---|---|---|---|---|---|
| | $\bar{x}$* | (s) | $\bar{x}$ | (s) | $\bar{x}$ | (s) | $\bar{x}$ | (s) |
| Agoraphobia | 39.41 | (35.24) | 23.55 | (34.99) | 41.84 | (33.72) | 45.39 | (37.07) |
| *Other phobias* | | | | | | | | |
| Social anxiety | 22.66 | (59.72) | −30.51 | (90.32) | 29.18 | (45.31) | 46.01 | (36.15) |
| Phobias – total score | 30.39 | (30.91) | 6.97 | (27.06) | 36.93 | (30.21) | 33.34 | (28.33) |
| *Other symptoms* | | | | | | | | |
| Depression | 39.40 | (54.74) | 23.31 | (69.22) | 51.67 | (35.96) | 25.03 | (70.89) |
| Obsessions-compulsions | 29.14 | (34.31) | 25.83 | (35.67) | 30.03 | (30.10) | 29.35 | (42.05) |
| Functional-somatic complaints | 12.46 | (47.24) | −23.84 | (91.52) | 17.75 | (25.91) | 25.51 | (27.22) |

* Group mean of percentage change score

reliable comparison of long-term effects of individual (n = 37) compared to group (n = 50) exposure will be made in our study II (5–8 years FU). Only three of the 75 patients felt worse at follow-up than before treatment, none of those came from the HBT condition.

Finally, duration of follow-up did not affect outcome results. ANOVA for FSS-agoraphobia and Marks/Watson phobia ratings (n = 75) did not reveal significant differences between any of the follow-up groups described in 2.2.

In the following two steps of analysis we shall separate the mild agoraphobics (n = 11) from those with severe agoraphobia (n = 62). Two severe agoraphobics were omitted from these analyses, as their ratings were not complete on all occasions. The detailed analyses of gainers and losers and of the two most frequently applied modes of exposure (group exposure and HBT) will be conducted with severe agoraphobics only.

## 3.2. Outcome of Mild Agoraphobia

We defined agoraphobia as mild when patients did not reach the cut-off point of 18 on the FSS-agoraphobia scale at pretreatment assessment. This cut-off point was empirically derived to allow a clinically meaningful definition of "severe" agoraphobia.

Eleven of the 75 patients fell into the group of mild agoraphobia. The range of their pre-treatment ratings was from 10 to 16. Group means and standard deviation on all symptom variables are shown in Table 8.

With this cut-off point it was possible to separate patients not only with regard to agoraphobic but also with regard to additional symptomatology: compared to severe agoraphobics, mild agoraphobics showed much lower ratings in other phobias and in other neurotic symptoms. In depression and obsessions-compulsions they not even reached the "clinical" range of these scales ($\geqq 10$ and $\geqq 5$ respectively). T-tests revealed significant (for resistance, interference, social anxiety and FSS-total) improvement from pre-treatment to follow-up; changes in agoraphobia are very significant, as are those in depression, although there the whole change occurred within the non-clinical range of the scale (0–10).

## 3.3. Outcome of Severe Agoraphobia

All subsequent comparative analyses were done with severe agoraphobics only, as we expected a higher chance for specific effects of different treatments applied to the more severely disturbed.

We shall first compare group exposure and HBT to investigate whether different cognitive sets (with regard to panic and avoidance) in both exposure modes led to different treatment outcomes. Patients with individual exposure were excluded from this analysis, as their total group of 13 included four mild agoraphobics, leaving only nine for the following comparison.

### *3.3.1. Comparison of Outcome with Group Exposure and Home Based Treatment*

For MANOVA comparison of both treatment conditions we had to reduce the number of patients from group exposure to 19 to equal the number of HBT patients. This was done by a random procedure; subsequent comparison of both sub-groups of group exposure patients showed no differences. Results are shown in Table 9.

Table 9 only shows the ratings for the two main symptoms, agoraphobia and depression. MANOVA revealed a highly significant time-effect for both, as for the other symptom variables (not shown in Table 9), but no group effect on any of the variables. An interaction effect was only found for depression. With these results, both treatments turn out as highly and equally effective on all variables.

Nevertheless, it seems noteworthy that group exposure induced a change score of 12.34 in depression, compared to 5.39 in the HBT conditions (mean differences pretreatment to last follow-up, Table 9). From a clinical point of view this, together with the interaction effect on depression (and in spite of a missing group effect in depression), tentatively indicates an even stronger effect of group exposure on depression. Results show clearly that both modes of ex-

**Table 8.** Symptom development over time: special course of mild agoraphobia (n = 11)

| Symptoms | Pre-treatment (T1) | | Post-treatment (T2) | | 6-month follow-up (T3) | | Last follow-up (T4) | |
|---|---|---|---|---|---|---|---|---|
| | x̄ | (s) | x̄ | (s) | x̄ | (s) | x̄ | (s) |
| Agoraphobia | 14.18 | (2.14) | 8.60 | (4.37) | 10.83 | (4.02) | 9.92 | (5.71) |
| Behavioral resistance | 40.30 | (25.10) | 76.13 | (12.19) | 75.33 | (14.14) | 69.00 | (23.35) |
| Interference | 46.50 | (24.74) | 32.00 | (21.80) | 25.00 | (25.16) | 23.46 | (19.89) |
| *Other phobias* | | | | | | | | |
| Social anxiety | 5.91 | (4.18) | 4.70 | (2.67) | 5.33 | (4.67) | 4.15 | (2.51) |
| Phobias – total score | 37.91 | (13.47) | 27.80 | (14.68) | 30.67 | (11.41) | 28.39 | (14.60) |
| *Other symptoms* | | | | | | | | |
| Depression | 9.46 | (6.30) | 7.80 | (6.23) | 6.50 | (7.06) | 4.50 | (3.89) |
| Obsessions-compulsions | 1.82 | (1.33) | 1.70 | (1.25) | 1.67 | (1.63) | 1.31 | (0.63) |
| Functional-somatic complaints | 6.00 | (2.22) | 5.18 | (2.44) | 5.33 | (1.97) | 5.31 | (1.88) |

**Table 9.** Symptom development over time: effects of group exposure and home based treatment

| Treatments | Symptoms | Pre-treatment (T1) | | Post-treatment (T2) | | 6-month follow-up (T3) | | Last follow-up (T4) | |
|---|---|---|---|---|---|---|---|---|---|
| | | x̄ | (s) | x̄ | (s) | x̄ | (s) | x̄ | (s) |
| Group exposure (n = 19) | Agoraphobia | 25.61 | (6.60) | 17.00 | (8.10) | 17.00 | (8.46) | 14.50 | (9.87) |
| | Depression | 22.11 | (8.24) | 18.00 | (10.08) | 16.88 | (10.65) | 9.77 | (9.32) |
| Home based treatment (n = 19) | Agoraphobia | 25.16 | (5.75) | 18.11 | (7.45) | 15.33 | (8.24) | 14.00 | (9.24) |
| | Depression | 17.72 | (7.64) | 13.77 | (8.20) | 11.77 | (9.39) | 12.33 | (10.20) |

posure are very effective treatments both for phobias and depressions. With an initial depression rating of 22.1 (group) and 17.7 (HBT), patients in both treatment conditions were far above the normal score range, whereas at follow-up scores for both groups were almost normal.

### *3.3.2. Comparison of Gainers and Losers*

As we have already shown, combined analyses of gainers and losers may hide important, treatment-relevant information. For our comparative analyses of gainers and losers we defined as gainers patients with an FSS-agoraphobia score < 18 at last follow-up, and as losers those with ratings ≧18. Of the 62 severe agoraphobics, 39 (63%) are gainers and 23 (37%) are losers. The mean ratings of both groups separately over all assessments, and significance of differences between groups on all variables at pre-treatment and at last follow-up are shown in Table 10.

At pre-treatment, gainers and losers differ significantly only in FSS-agoraphobia. At follow-up differences between both groups are very to highly significant in all variables, except for obsession-compulsions and functional somatic complaints.

Also for this comparison we transformed ratings into percentage change scores. Comparison of change scores of gainers and losers, together with the change score for both combined, are shown in Fig. 1.

With T-tests for independent samples differences were highly (sss) significant for FSS-agoraphobia – total score and depression, very significant (ss) for FSS-social anxiety and significant (s) for functional so-

**Table 10.** Symptom development over time: comparison of gainers (n = 39) and losers (n = 23)

| Symptoms | Pre-treatment (T1) | | Post-treatment (T2) | | 6-month follow-up (T3) | | Last follow-up (T4) | |
|---|---|---|---|---|---|---|---|---|
| | x̄ | (s) | x̄ | (s) | x̄ | (s) | x̄ | (s) |
| *Agoraphobia* | | | | | | | | |
| Agoraphobia | | | | | | | | |
| Gainers | 22.93 | (5.84) | 13.05 | (5.56) | 11.85 | (5.68) | 9.05 | (5.15) |
| (Sig. of diff.)* | s | | | | | | sss | |
| Losers | 26.52 | (6.32) | 21.68 | (8.24) | 20.63 | (7.26) | 23.54 | (5.38) |
| Behavioral resistance | | | | | | | | |
| Gainers | 39.59 | (28.03) | 71.59 | (20.71) | 78.29 | (13.58) | 78.59 | (20.90) |
| (Sig. of diff.) | n.s. | | | | | | sss | |
| Losers | 39.70 | (31.31) | 52.91 | (21.03) | 52.47 | (24.98) | 51.08 | (25.88) |
| Interference | | | | | | | | |
| Gainers | 70.24 | (21.63) | 39.05 | (25.50) | 27.76 | (23.76) | 24.08 | (22.75) |
| (Sig. of diff.) | n.s. | | | | | | sss | |
| Losers | 69.87 | (19.21) | 56.18 | (24.50) | 47.84 | (25.28) | 63.00 | (20.94) |
| *Other phobias* | | | | | | | | |
| Social anxiety | | | | | | | | |
| Gainers | 9.12 | (4.67) | 7.03 | (4.77) | 7.12 | (4.31) | 5.26 | (4.03) |
| (Sig. of diff.) | n.s. | | | | | | ss | |
| Losers | 10.13 | (4.74) | 9.45 | (5.63) | 8.50 | (3.97) | 9.50 | (5.18) |
| Phobia total score | | | | | | | | |
| Gainers | 60.17 | (16.52) | 43.19 | (18.36) | 39.79 | (17.48) | 32.56 | (16.12) |
| (Sig. of diff.) | n.s. | | | | | | sss | |
| Losers | 67.96 | (14.21) | 61.14 | (16.80) | 60.68 | (17.67) | 62.63 | (13.55) |
| *Other symptoms* | | | | | | | | |
| Depression | | | | | | | | |
| Gainers | 22.51 | (9.09) | 14.44 | (8.31) | 12.47 | (8.65) | 8.71 | (7.76) |
| (Sig. of diff.) | n.s. | | | | | | sss | |
| Losers | 19.95 | (7.78) | 18.10 | (8.01) | 19.11 | (9.91) | 18.54 | (8.54) |
| Obsessions-compulsions | | | | | | | | |
| Gainers | 3.25 | (1.65) | 2.45 | (1.57) | 2.24 | (1.60) | 1.94 | (1.46) |
| (Sig. of diff.) | n.s. | | | | | | n.s. | |
| Losers | 3.35 | (1.95) | 2.59 | (2.06) | 2.47 | (1.87) | 2.48 | (1.78) |
| Functional somatic complaints | | | | | | | | |
| Gainers | 7.46 | (1.61) | 6.79 | (1.67) | 6.50 | (1.99) | 5.74 | (2.13) |
| (Sig. of diff.) | n.s. | | | | | | n.s. | |
| Losers | 7.35 | (1.64) | 7.00 | (2.14) | 6.55 | (2.04) | 6.83 | (2.17) |

* Sig. of diff. ≙ t-test comparisons for independent samples: level of significances for T1 and T4

matic complaints; only for obsessions-compulsions were they non-significant. The gainers on most variables show a change score between 40% and 60% of their individual pre-treatment ratings, whereas losers show a maximum change score of 10% on only 3 variables. These extreme differences in outcome on most variables between gainers and losers do not only demonstrate their highly different responses to treatment and follow-up events, but also confirm the clinical meaningfulness of the cut-off point for FSS-agoraphobia in order to differentiate between therapeutically relevant sub-groups.

This differentiation is to a large extent possible as early as at the end of short-term treatment. Some 75% of the losers at follow-up had been losers already at the end of treatment!

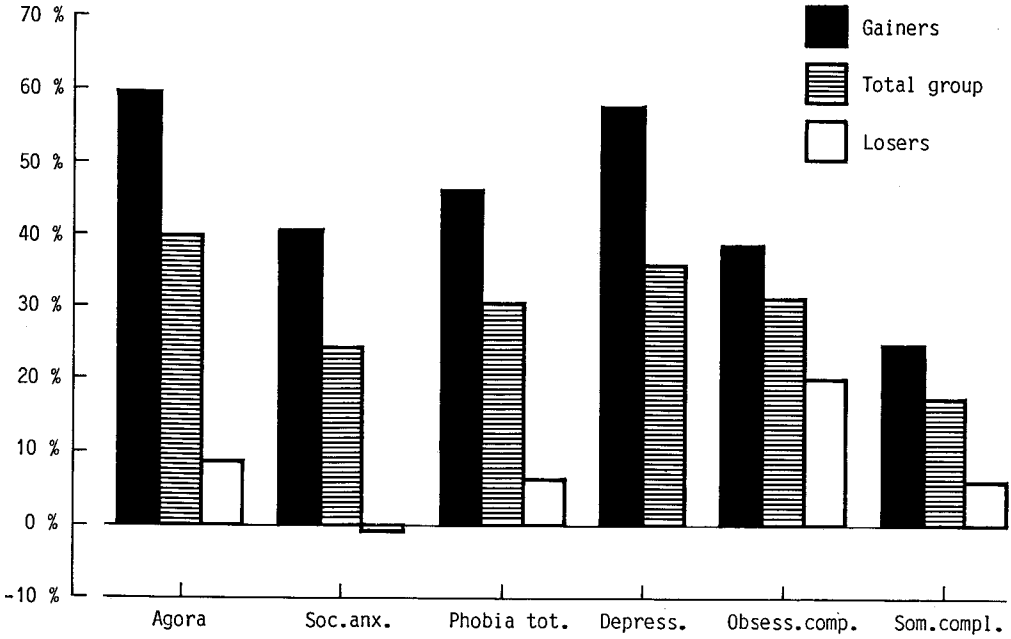


**Fig. 1.** Symptom development over time: percentage change-scores (T1–T4) for total group, and for gainers and losers separately

### *3.3.3. Level of Multisymptomatic Disturbance and Outcome in Agoraphobia*

Again, we separate the gainers and losers (with regard to agoraphobia) in the described way. But now, each individual is additionally classified according to the number of additional symptoms where patients' ratings exceeded the cut-off point for the respective scale (degree of multisymptomatology): i.e. an agoraphobic will only be rated depressed in this analysis when his depression rating score reaches or exceeds the cut-off point of 23, the group mean of patients with the diagnosis of neurotic depression. Accordingly, he will only be rated obsessive-compulsive when his respective ratings reach or exceed the cut-off point of 5, which is the group mean of patients with the main diagnosis of obsessive-compulsive neurosis (details in Hand and Zaworka 1982). Cut-off points for the other two symptoms are defined in the same manner.

With this we make sure that agoraphobics who are rated as multisymptomatically disturbed have severe additional symptomatology to their agoraphobia. Results from this analysis are shown in Table 11.

**Table 11.** Degree of multisymptomatology and change of agoraphobia (n = 62)

| Pre-treatment | Last follow-up | | Σ |
|---|---|---|---|
| | Gainers | Losers | |
| ≧ cut-off point | < cut-off point | ≧ cut-off point | |
| Agoraphobia only | 21 (70%) | 9 (30%) | 30 |
| 2–4 fold | 18 (56%) | 14 (44%) | 32 |
| symptomatology | 39 (63%) | 23 (37%) | 62 |
| 2 fold symptomatology | 5 | 7 | 12 |
| 3 fold symptomatology | 10 | 5 | 15 |
| 4 fold symptomatology | 3 | 2 | 5 |
| Σ | 18 | 14 | 32 |

Of the 30 patients who are rated monosymptomatic agoraphobics (who may still have "mild" additional symptomatology), 21 (70%) became gainers, whereas the same holds true only for 18 (56%) of the 32 with multisymptomatic disturbance. The additional, separate analysis of patients who

had two-, three- or four-fold symptomatology before treatment, revealed no relationship between increasing multisymptomatology and outcome. With this evaluation procedure, patients with severe multisymptomatology show a rather high failure rate of 44% altogether.

In a next step we investigate the outcome, when multisymptomatic assessment of patients is applied for each of the three treatment conditions (Table 12).

With this analysis we get an overall success rate (percentage of gainers) of 55% in individual exposure, 71% in group exposure and 53% in HBT. The tendency for a superiority of group exposure is mainly due to the particularly high effect of group exposure in patients with severe monosymptomatic agoraphobia: of 14 patients, only one was a loser. The other differences between groups as shown in Table 12 cannot be interpreted. If these results can be confirmed, multisymptomatic assessments of individual agoraphobics (Hand and Zaworka 1982) may become a helpful screening procedure to find the most appropriate treatment for the individual patient.

### *3.3.4. Changes During Follow-Up*

To what extent does additional symptom reduction during follow-up occur in agoraphobic patients after exposure in-vivo?

In the study by Hand et al. (1974), patients from the groups with high cohesion seem to gain further improvement during follow-up. Small numbers and short follow-ups made this a weak result, which could not be replicated, e.g. by the Oxford group. In their replication of the Hand et al. study (Teasdale et al. 1977), the lack of additional follow-up effects was the only discrepancy in outcome with the Maudsley study. In this study, with much larger samples and follow-up intervals, we could already show that except for agoraphobia in all other symptom variables there were significant to very significant follow-up effects for gainers and losers combined (Table 4). We could also show (Table 10) that on almost all variables gainers show further numerical improvement from post-treatment to last FU. A more detailed analysis of FU effects on all symptom variables for the 62 severe agoraphobics is shown in Table 13.

Reanalysis of the total sample reveals follow-up effects very similar to those shown in Table 4 for the total sample of 75 patients, including the mild agoraphobics. For the gainers we now find significant to very significant follow-up effects also in the three dimensions of agoraphobia – an effect which was spurred by the development of the losers in the joint analysis. The significance of follow-up improvement in depression increases further in the separate analysis for the gainers.

These clear-cut results of very significant treatment as well as follow-up improvement on all symptom variables for gainers as opposed to losers give much clearer hints about treatment effects than the usual combined analysis of gainers and losers.

A closer look at the development of the losers reveals that of the 23 losers, 19 had received some kind of treatment during fol-

**Table 12.** Degree of multisymptomatology and change of agoraphobia after three different modes of exposure in-vivo

| Pre-treatment | Last FU | | | | | | Σ |
|---|---|---|---|---|---|---|---|
| Symptomatology ≧ cut-off point | Ind. exposure n = 9 | | Group exposure n = 34 | | Home Based Treatment n = 19 | | |
| | Gainers | Losers | Gainers | Losers | Gainers | Losers | |
| Agoraphobia only | 1 | 2 | 13 | 1 | 7 | 6 | 30 (48%) |
| 2–4 fold symptomatology | 4 | 2 | 11 | 9 | 3 | 3 | 32 (52%) |
| Σ | 5 (55%) | 4 (45%) | 24 (71%) | 10 (29%) | 10 (53%) | 9 (47%) | 62 (100%) |

**Table 13.** Symptom development over time: Follow-up effects (T2–T4) for total sample, and for gainers and losers seperately

| Symptoms | Total sample (n=62) | | | Gainers (n=39) | | | Losers (n=23) | | |
|---|---|---|---|---|---|---|---|---|---|
| | T* | p | sig. | T* | p | sig. | T* | p | sig. |
| *Agoraphobia* | | | | | | | | | |
| Agoraphobia | 1.72 | 0.090 | n.s. | 3.31 | 0.002 | ss | −1.14 | 0.266 | n.s. |
| Behavioral resistance | −1.42 | 0.161 | n.s. | −2.72 | 0.010 | s | 1.04 | 0.310 | n.s. |
| Interference | 1.74 | 0.087 | n.s. | 2.95 | 0.006 | ss | −0.99 | 0.335 | n.s. |
| *Other phobias* | | | | | | | | | |
| Social anxiety | 1.81 | 0.075 | n.s. | 3.01 | 0.005 | ss | −0.40 | 0.693 | n.s. |
| Phobias – total score | 2.34 | 0.023 | s | 3.71 | 0.001 | ss | −0.37 | 0.711 | n.s. |
| *Other symptoms* | | | | | | | | | |
| Depression | 2.49 | 0.016 | s | 4.05 | 0.000 | sss | −0.59 | 0.558 | n.s. |
| Obsessions-compulsions | 2.40 | 0.021 | s | 2.92 | 0.007 | ss | 0.0 | 1.00 | n.s. |
| Functional-somatic complaints | 3.14 | 0.003 | ss | 3.69 | 0.001 | ss | 0.41 | 0.685 | n.s. |

* T-tests for dependent samples

low-up (not behavior therapy), one was on a waiting list for additional behavior therapy – and three asked for more behavior therapy at follow-up. Also a certain proportion of the gainers received further treatments during follow-up.

Of 19 patients with psychotropic medication at follow-up, twelve were losers (i.e. 51% of the losers) and seven were gainers (17% of the gainers). None of the mild agoraphobics received medication at follow-up.

Twenty three patients saw their therapists (GPs, psychiatrists or psychotherapists) on a more regular basis during follow-up. Fifteen of these were losers (65% of the losers), seven were gainers (18% of the gainers), and one was a mild agoraphobic.

Treatments during follow-up altogether emphasize the differences between gainers and losers, revealed by their symptom ratings.

Losers in 75% are detectable already at the end of short-term exposure. They receive much more additional treatment during follow-up than gainers and yet, whereas gainers continue to gain in follow-up, losers hardly ever do so.

## 4. Summary and Discussion

This study reveals a variety of results not found, or not looked for, in previous follow-up studies with agoraphobics. This may to some extent be due to the way treatments were conducted, but it is probably much more the consequence of some new ways of data analysis. Data analyses start with an initial, "classical" analysis of the total patient sample, including a comparison and three modes of exposure (individual, group and home-based). This is followed by an analysis with the subsample of "mild" agoraphobics (11, or 15% of the total sample). The most informative analyses are then conducted with the severely disturbed patients. Comparison of treatment conditions in this sample, because of the small number of patients with individual exposure, is restricted to group exposure and home-based treatment in most analyses. Severe agoraphobics are then split into gainers and losers, according to

their phobia ratings at last follow-up. Possible reasons for the differences in their rating at follow-up, in spite of their homogeneity at pre-treatment, are carefully analysed. In this context, separate analyses of treatment and follow-up effects are of special interest, as apart from some first tentative results in the Hand et al. study (1974), so far additional follow-up effects could not be detected after exposure treatment of agoraphobics.

The experimental section of this study is introduced by a rather detailed description of the "exposure-response management" model of group exposure in-vivo (Hand et al. 1974), as the response-management part of it seems to have been largely neglected in subsequent studies. Differences for the coping strategy in home-based treatment (Mathews et al. 1977) are outlined. These treatment descriptions are hoped to contribute to a conceptual plausibility of some major outcomes of the study.

Overall outcomes:
Analyses with the data from the whole sample confirm previous follow-up studies with agoraphobics regarding highly significant phobia reduction and very positive changes in private and professional life, as well as in illness behavior. Additionally, highly significant effects of treatment are found in multisymptomatology, including depression, social anxiety, obsessions-compulsions and functional somatic complaints. Also, on all variables except the directly treated agoraphobia, there is further significant improvement during follow-up. The intense changes in agoraphobic behavior right after treatment may have had lasting effects on life style, which in turn additionally may have reduced other symptomatology. Results on assessor-administered multiple scales confirm the outcome with patient's self-ratings. At follow-up, only 30% of the total sample still suffer from considerable to severe symptomalogy. For the other 70%, the marked reduction in phobic anxiety is accompanied by marked increase in psychological well-being, occupational and leisure activities. Compared to pre-treatment, visits to GPs have been reduced by 75%, those to psychiatrists and psychotherapists by 50%. Psychotropic medication had been taken by 80% before treatment, while only 25% were still taking it at follow-up. Thus, treatment also reduced health risks secondary to agoraphobia, like drug dependency (tranquilizers or alcohol) and the risks of long-term anti-depressant medication.

Some 90% of the improved patients attributed improvement to behavior therapy alone or in combination with other life events. They also said they would go back to behavior therapy if again in need of help. Yet quite a large proportion of the patients (gainers and losers) made a variety of suggestions to improve treatment: in most cases patients would have liked more of what they had got, rather than change anything. It appears to be in the nature of man to ask for more of what feels good – even if that may not do good.

Group statistical analyses with this sample revealed the high efficacy of both group exposure and home-based treatment with no specific superior effect of either on any of the variables.

Duration of follow-up did not affect outcome.

Thus, in the first overall analysis it appears that short-term exposure of whatever mode induces such intense changes in phobic and everyday behavior that more than two thirds of treatment participants after the initiation of change by treatment continued to change their lives during follow-up.

Results with mild agoraphobics:
Mild agoraphobics in this study are those that before treatment scored lower than our clinical cut-off point of 18 on the FSS-agoraphobia scale. With this cut-off point, we not only separated patients with regard to agoraphobia, but also with regard to the level of additional multisymptomatology from the severe agoraphobics (cf. Table 8 versus Table 10). Mild agoraphobics are in the large majority monosymptomatically disturbed: in depression, obsession-compulsions and functional somatic complaints their ratings are well within the normal range of the respective scales; in social anxiety and FSS-total phobia score they are far below our clinical cut-off points for severe symptomatology.

Mild agoraphobics apparently start treatment with a phobia level (14, 18) that almost equals that of the total sample at last follow-up (13, 76) – and yet, they gain considerably and significantly in phobia as well as in "normal" depression.

Results with severe agoraphobics:
The first analysis with the sample of 62 patients consists of a comparison of treatment and follow-up effects of patients after *group exposure* or *home-based treatment.* MANOVA revealed highly significant effects on all variables, but no group effect. Both treatments show particularly strong effects on phobic anxiety, group exposure additionally on depression (change score 11,1 compared to 5,4 in HBT). This result, and the only significant MANOVA interaction effect occurring in depression, tentatively support the assumption of a specifically powerful group exposure effect on depression – in spite of the missing group effect. From the different anxiety-depression management concepts in both treatment modes, these differences in outcome seem to make sense. Group exposure tries to induce high emotional arousal and uses almost identical coping strategies for panic and depression. As already mentioned in the original study, high group cohesion may be the optimal motivational setting for proper application of this treatment mode. There is also further evidence, that group exposure might have some specific advantages over home-based treatment: in monosymptomatic severe agoraphobics (Table 11), of the 14 who had received group exposure, 13 (93%) turned out gainers at follow-up, whereas the same holds true for only 7 (54%) of the 13 who had received home-based treatment. Again, the lack of an active coping strategy for high emotional arousal (here: anxiety-panic) in HBT may explain these differences in outcome. Unfortunately, in this study we did not apply rating scales to properly assess occurrence of panic in and outside phobic situations.

In severe multisymptomatic agoraphobics we did not find differences in outcome between treatments, all being successful in somewhat more than 50% of the patients. It may not be the same 50% of the patients that profit from each of the treatment conditions, but the so far small numbers did not allow more detailed analyses. Taking all results together, some tentative first suggestions for treatment settings that are equipped to provide both modes of exposure seem justified: patients with 1. severe, monosymptomatic agoraphobia and (or) 2. high, phobia-related depression may preferably be treated by group exposure in-vivo.

The separate analysis of *gainers* (n = 39; 63%) and *losers* (n = 23, 37%) among the severe agoraphobics – independent of treatment conditions – reveals the most useful information from the study. Gainers were those patients who, with a pre-treatment rating of $\geqq 18$ in FSS-agoraphobia, scored $< 18$ at last follow-up. Theoretically, with this cut-off point gainers could still be mild agoraphobics in our definition. Pre-treatment, both groups differed significantly only in the agoraphobia ratings (initially higher in losers), whereas at follow-up differences in all symptom variables, except for obsession-compulsions and functional somatic complaints, were highly significant (Table 10). Gainers on most variables had a change score of 40–60% of their individual pre-treatment ratings, whereas losers showed a maximum change score of 10% and this only in three variables. Our cut-off point thus has proved a very useful tool to differentiate between responders and non-responders to treatment, even on a multisymptomatic level.

Results also show that those who had responded at last follow-up, had done so during treatment as well as additionally during follow-up (Table 13). Gainers show significant additional follow-up effects on all variables of phobic and additional symptomatology, whereas losers show no such effects at all. In gainers for instance, continuing change during follow-up is the reason why they did not remain mild agoraphobics: they scored 13.05 at the end of treatment (whereas mild agoraphobics had scored 14 before treatment), but 9.05 at last follow-up, thus finishing with an almost identical rating to the last follow-up of mild agoraphobics (9.92).

Additional treatments during follow-up had occurred far more often in losers than

in gainers: 51% of the losers compared to 17% of the gainers took psychotropic medication at follow-up (none of the mild agoraphobics); 65% of the losers and 18% of the gainers had seen their therapists (GPs, psychiatrists or psychotherapists) on a more regular basis during follow-up. Yet, losers had remained losers, even when treated with alternative psychotherapy.

Why did losers become losers and stay losers? With the detailed analysis of losers still under way, here we can only give some tentative suggestions. During treatment and the first six months of follow-up all variables except for depression show at least a numerical tendency for symptom reduction (Table 10). Only depression ratings remain highly stable over this period of time as well as during subsequent follow-up. This happened in spite of the fact that the initial depression ratings of losers (19, 95) and gainers (22, 51) were very similar. Why then did depression of the losers respond so extremely differently to depression of the gainers? Two hypothetical explanations need further investigation: 1. Was the initial behavioral analysis wrong with regard to the symptom and problem hierarchy of the losers? Was the cause of multisymptomatology one major, "underlying" problem or conflict that we did not detect more properly? But why then did patients not respond to alternative treatments in follow-up? 2. Did losers suffer from some basic biological depression-anxiety (panic) disturbance? Interestingly, losers had a significantly higher rating of phobic anxiety than gainers prior to treatment – in contrast to their numerically lower depression ratings.

In both cases (1. and 2.), chronic, non-respondent depression would then be seen as due to an underlying cause other than agoraphobia, this also being the cause for relapses in the responding variables after six-month follow-up.

Another sub-sample of the losers, those 25% who came from the post-treatment gainers, needs further investigation, possibly in the same directions.

It needs to be added again that, from the interviews and the experience of patients in treatment, the occurrence of panic attacks does not seem to correlate with persistent depression in treatment and during follow-up. The existence of a non-responding depression may have to be detected from other variables.

The separate analysis of gainers and losers convincingly demonstrates how the "classical" total sample group statistics can hide important, and may even give wrong information. In our initial, total sample analysis, patients finished treatment with a mean agoraphobia score of almost 14, which could have led to the wrong assumption that even a long time after exposure patients, in spite of their improvement, are still mild, though definite agoraphobics in need of treatment. Only the detailed subanalyses described reveal that for the clear majority exposure is highly effective during treatment as well as during follow-up and on a multisymptomatic level, or it is not effective at all, losers apparently also hardly responding to alternative treatments.

*Prognostic variables for the course of agoraphobia in exposure treatment and during follow-up:*

1. Responsiveness of phobia *and* depression during short-term exposure is a strong predictor of positive long-term outcome for some two thirds of the patients. If both variables respond, the level of depression before treatment does not affect outcome negatively. In fact, both modes of exposure are then powerful "anti-phobic" as well as "anti-depressant" interventions.

Occurrence of panic attacks during group exposure in-vivo appears to be a good predictor for positive short-term outcome, as we found in a previous study.

On the other hand, non-responders in depression during phobia treatment are likely to remain non-responders in depression during follow-up – thus indicating the high risk of relapse after six month follow-up in all variables that may have responded favorably to treatment. Early separation of gainers and losers with a single-case oriented methodology like that one described by Hand and Zaworka (1982) seems warranted.

2. Selection of the proper mode of exposure for the individual patient may be important

in some sub-samples of agoraphobics, in spite of the almost equal, highly significant multisymptomatic effects of both HBT and group exposure. Patients with severe monosymptomatic agoraphobia, and possibly also those with higher phobia-related depression, seem to profit better from group exposure. The same would go for those who want to improve as fast as possible and to travel as far as possible. On the other hand, those who want time, who want to avoid emotional arousal, who want to exercise according to their own speed, who have been identified as severely multisymptomatic patients, and finally those who cannot find a trained exposure therapist, may very well turn to HBT.

*The following questions arise from this study:*

1. Why does, in some 30% of severe agoraphobics, depression not respond to phobia-treatment, while in the other 70% exposure treatment is a very effective anti-depressant intervention? Is the non-responding depression a symptom of a psychological problem or conflict constellation, or is it of biological origin? Why did losers in this study neither respond to alternative treatments nor to medications?
2. Why do severely multisymptomatic agoraphobics respond only in 50% favorably to treatment, compared to 93% of the severely monosymptomatic agoraphobics (in group exposure)? What relationship is there between level of phobic anxiety on one side and level of depression on the other side and the level of multisymptomatology? To a certain extent, higher levels of phobic anxiety correlate with higher degrees of multisymptomatology – mild agoraphobics have virtually no other symptoms of clinical relevance, whereas 50% of severe agoraphobics have stilt other severe symptoms.

   How can we identify those 50% of the severely multisymptomatic patients who do not respond to exposure, before the intervention is given?
3. Can our hypothesis about some specific effects of group exposure be verified in an additional controlled trial with HBT and group exposure? Such a study should also investigate the exact occurrence of panic attacks (according to DSM-III) to investigate whether there is really the assumed specific "anti-panic" and "anti-depression" effect of the *exposure response-management* concept already inherent in the group exposure in-vivo model by Hand et al. (1974). This comprises "exposure to the avoided trigger situation and (or) to the feared own set of responses" – the latter being cognitive, emotional (anxiety, depression or other) or physiological.

In spite of all the questions yet to be answered, from this study there is already one reassuring answer: for 70% of agoraphobics group exposure or HBT are highly effective and sufficient treatments. In the majority, long-term gainers and losers can be identified already at the end of treatment. Doubts that have come up from some studies oriented at a biological panic model cannot at all be confirmed by this large-scale and long-term study.

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