

Reintegrating aphasics into employment. Chances – Limitations – Resources

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Aphasia therapy should not be limited to linguistic and communicative capacities in the social context; therapeutic offers for younger patients should focus on language and communicative job demands to enhance their chance for occupational reintegration after stroke. This article gives some data on long-term reintegration of young aphasic patients having been treated in a rehabilitation center near Bielefeld and it stresses the relevance and necessity of rehabilitation programs beside stepwise reintegration. Only 64% of 25 patients being recommended for stepwise occupational reintegration by an expert team following very sharp criteria for residual symptoms were successful in their former job. Job-oriented therapy and training before reintegration into employment may give additional support for a successful reintegration, but individual therapeutic coaching on the job and the use of modern technology and resources may help patients with even moderate aphasic symptoms in their occupational environment. Two case studies lend support for such a problem-oriented therapeutic coaching approach and illustrate successful strategies for the reintegration process.

1. Introduction

Aphasia therapy is very often limited to helping aphasics communicate their basic wishes and needs. Quite seldom one is confronted with young aphasics having the chance to be reintegrated into employment. One can call into question that there are many persons with aphasia, who want to go back to work. But for quite some time now, we have been asked for help in the process of vocational reintegration after stroke. Some studies report on a considerable number of younger aphasics with traumatic brain lesions, who want to go back to their profession or, if possible, to a similar occupation (IBRA, 2001).

In the literature as well as in the therapeutic community, there is an ongoing debate on the need for programs in this domain, with one party stressing that costs will exceed benefits. They argue that even aphasics with slight language problems

are highly irritable under stress, show low motivation and flexibility, show low concentration and attentional resources, and show a general reduction of cognitive speed, especially for traumatic and hypoxic brain damage (Kreutzer et al., 1993; Snow et al., 1998). Therefore, it seems to be an illusion in times of recession and high rates of unemployment that aphasics will have a chance to return to work. On the other hand, social and occupational reintegration is a declared primary goal of the World Health Organization's (WHO) model for rehabilitation (ICIDH *International classification of impairments, disabilities and handicaps*), and there are at least a few studies showing quite good chances for persons with residual symptoms of aphasia to gain employment (Melamed et al., 1991; Fries & Seiler, 1998; Claros Salinas, 2000).

This article gives a short overview on recent concepts and programs in Germany and discusses an alternative approach for a successful training program on the basis of some data and single case studies from patients treated at the University of Bielefeld in cooperation with the neurological clinic of the "Ev. Johannes-Krankenhaus" and a rehabilitation center in Bad Oeynhausen, "Klinik am Rosengarten".

2. Employment of aphasics in germany: concepts and programs

A well-established institutional aid in Germany for patients who want to go back to work following severe illness is "stepwise reintegration" (§74 SGB V). This governmental resource allows employees to start to work for a few hours per day first, raising the amount of work over a period of about three or four months. But no special training or further aids for a successful reintegration are offered. Stepwise reintegration may start immediately after a therapy program in a rehabilitation center and it may be accompanied by ordinary language therapy financed by the health insurance companies. But this approach may not give enough aid for aphasic patients, who have special difficulties in communicating their problems in a social environment, which often feels especially helpless when confronted with language and communication problems.

In the international literature, the distinction between "train and place"-programs and "place and train"-programs for occupational reintegration is well-established. (Sturm et al., 2000). In Germany, NBT ("Neurologische Berufstherapie"; neurological vocational therapy; Claros-Salinas et al., 2000) can be classified as a "train and place"-program, whereas IBRA ("Integrative berufliche Rehabilitation für Personen mit Aphasie"; integrative vocational rehabilitation for persons with aphasia; 2001) offers a special training at the BFW Würzburg (state-aided occupational promotion) and can be classified as a "place and train"-program. In the following part of this article we will discuss the question, of whether there is a need for such programs, or if it may be of sufficient help to aphasic patients to offer them a stepwise return to their work, and how many young aphasic persons manage to return to their former occupation successfully.

3. Aspects Of Occupational Reintegration

3.1 Questions and hypotheses

The main question we asked was, how many persons with residual symptoms of aphasia being recommended for occupational reintegration (N = 25) did manage to go back to their job and maintain their position? Success of the reintegration process should depend on a) factors of personal status, b) factors of the disease and impairment, c) factors of job requirement and d) factors of subjective impairment.

3.2 Subjects

In a catamnestic study in cooperation with the neurological rehabilitation center “Klinik am Rosengarten”, Bad Oeynhausen, the data of 209 aphasic patients with an infarction of the left dominant cerebral hemisphere, who were younger than 55 years when they left the clinic, were analyzed. The time elapsed since their critical infarction was more than two years (treated in the rehabilitation center from 1997 – 2001). Only 25 of them (12%) had been suggested for reintegration into employment by an expert team, consisting of the neurologist, a speech and language therapist, a neuropsychologist and the social worker. This team decides on reintegration into employment or early retirement on the basis of residual deficits in the domains of language, motor behavior, cognitive factors and physical and mental health status. Only persons with very mild or no residual symptoms are usually nominated for occupational reintegration.

In accordance with this quite conservative proposal, the group of 25 aphasic patients can be characterized as: only mild amnesic aphasia or residual symptoms of the aphasia (classified by the AAT; Huber et al., 1986) with no (severe) motor deficits, no (severe) cognitive deficits and no (severe) symptoms of emotional disturbances, e.g. depression. Of these patients 55% were male and 45% were female with a mean age of 44,58 years (sd = 17,85, median = 40; range 21 - 55) when they left the rehabilitation center.

3.3 Methods and results

How many of the 25 subjects with residual symptoms of aphasia recommended for occupational reintegration did manage to go back to job and maintain their position? In a semi-standardized face-to-face or telephone interview, which was conducted by two students of clinical linguistics in the course of their master’s thesis (Harwardt & Lange, 2003), the subjects were asked about their current occupational status, about some general personal aspects (e.g. age, level of education), about stroke and resulting ongoing complaints in the sensory-motor, cognitive and the communicative domain, about former job characteristics and about their current position. The whole questionnaire was answered by only 20 of the 25 subjects contacted, for 5 subjects only current occupational status and some basic data were collected.

16 subjects (64%) had been reintegrated after 7,4 months post onset (sd = 7,01, median = 5,75, range 1,5 – 30 months), but two were let go after some time and did not try for a new job. Two persons changed to a new occupation, one of them was very young at the time of the infarction and had a vocational training and one had been self-employed before and had only part-time jobs afterwards. But 7 persons remained unemployed following stroke, including one receiving early retirement. Table 1 gives an overview on the main courses of reintegration for the 25 subjects.

Table 1. Courses of reintegration for 25 subjects, who have been nominated for occupational reintegration by an expert team.

Course of reintegration progress	N	%
Successful reintegration in former occupation	14	56
Reintegration followed by being let go	2	8
Successful integration in a new occupation	2	8
Early retirement	1	4
No employment	6	24

In the semi-standardized interview on the five domains reported above, twenty persons characterized their personal, health, impairment and employment conditions. Of these 20 persons 17 went back to their job, but two were let go after several months. 14 patients used the stepwise reintegration program. No other special aid was offered to these patients, and only 40% of all participants took part in ambulant language therapy and physiotherapeutic programs for some time. *The duration* of the reintegration process for those patients, who returned to employment for at least several months (N = 17), lasted from 1,5 to 30,0 months with a mean of 7,4 months (sd = 7,00; median = 5,75). The duration of the reintegration process was shorter for those persons with few sensory-motor deficits and aphasic symptoms.

The differences between successfully integrated and now unemployed persons are described for some variables in Table 2. Differences of means were tested with the t-statistic in the software package SPSS. Nonparametric measures (“Mann-Whitney-U” test) were added in cases of ordinary data formats (for more details see Harwardt & Lange, 2003), which showed very similar results for significance testing, so that we skip them here.

Table 2. Sources of influence on employment

Sources of influence on employment	Employed (N = 15)	Unemployed (N = 5)	t-value
Age	43,7	46,8	0,53 (n.s.)
Status of vocational profession (1 – 4)	2,8	2,0	-1,95 (p=.08)
Months p.o. until reintegration (N = 17)	7,9	4,67	-,72 (n.s.)
Subjective cognitive impairment (1 – 4)	2,5	2,7	-,51 (n.s.)
Subjective communicative impairment (1 – 4)	2,1	2,6	-,95 (n.s.)

The job conditions of those subjects, who were reintegrated, changed in some relevant ways:

1. Mean *working hours per week* were reduced by about 3,1 hours (pre-stroke: $M = 39,8$; post-stroke: $M = 36,7$; $t = -2,34$; $p < .05$), but the working hours did not change for 11 of those 17 participants.
2. The job *demands on language and communication* are subjectively rated as only slightly reduced after stroke (scale 1-4 / pre-stroke: $M = 3,0$; post-stroke: $M = 2,6$; $t = -1,85$, $p < .1$). For 11 participants the job demands communicative tasks in the same amount after stroke, for 6 participants it is reduced, and for one it is even raised (because of her apprenticeship as an office worker after stroke). *Language demands* and *mean working hours* are both reduced for persons with subjectively felt cognitive problems. Spearman correlation coefficients for ranks were calculated, which reveal a marginally significant correlation between language demands of the current position and subjectively felt cognitive problems ($r = .431$, $N = 14$, $p < .1$) and a significant correlation between mean working hours per week and cognitive problems ($r = .479$, $N = 20$, $p < .01$).

3.4 Summary and discussion

To summarize these results: we found that 72% of those patients, recommended for a vocational reintegration by an expert team, did return to employment, most of them in their former vocational occupation. Only two of them were let go after several months, which makes a total of 64% of patients being successfully reintegrated in the long run. Most of these patients used only a stepwise reintegration program and no further governmental aids for the reintegration process. For only about half of the patients was the reintegration process accompanied by traditional language therapy, physiotherapy and some neuropsychological training. A high grade of vocational status was found to positively influence the success of the reintegration process. Subjectively rated cognitive problems seem to be an important factor, which may influence the mean working hours per week as well as the amount of language and communicative demands after reintegration. It seems remarkable, that only 8% of the whole sample of younger aphasic patients ($N = 209$), who were treated in the Rehabilitation center from 1997 to 2001, was successfully reintegrated into employment. Many patients with even more sever handicaps had wished to find a job following stroke.

4. A case for individual coaching on the job

We do not have much information on the reasons for the failure of the 7 aphasic patients (28%) who left the rehabilitation center with very mild or no symptoms of aphasia and did not try or did not manage their occupational reintegration. Some did not even start the stepwise reintegration program and did not give many reasons for

this. Typically, they complained of tiredness, low concentration, low motivation and reduced self-esteem. Even those patients with only slight symptoms and high motivation to get back to work when leaving the rehabilitation center did not all manage their occupational reintegration. This last passage will be concerned with alternative approaches to occupational reintegration, which may even help aphasics with more severe problems to go back to their job, if they want to.

Taking a closer look at the two projects in Germany mentioned above, IBRA and NBT, may present a solution for such patients. The NBT (Claros Salinas et al., 2000) provides training for vocational reintegration and aims at a long-term maintenance of the ability to work. It is integrated into an in-patient neurological therapy program lasting about 4 to 6 weeks. The program is offered to patients with only mild cognitive and/or language problems, who are less than 18 months after onset of the disease. The levels of the therapeutic intervention can be characterized as follows:

1. Exercises of specific vocational-related cognitive and/or language deficits,
2. Support of well-preserved abilities and resources,
3. Development of strategies to compensate and adapt the deficits,
4. Detailed recommendation for a gradual return to work.

This program ends similar to the therapeutic offers in the rehabilitation center *am Rosengarten* with a recommendation for the future work. Similar to our results (64 % of patients being long-term reintegrated), Claros Salinas (2000) found in a larger group of participants, that 75 out of 108 (72 %) participants enrolled in the stepwise reintegration program. Of these 75 patients only 52 participants (about 69 %) returned successfully to the workplace and achieved a long-term reintegration.

In principle, there seem to be two ways to enhance the success rate of the following reintegration phase. First, it may become obvious, that the former profession holds too many demands, with which the aphasic cannot adequately cope. This is the basis of the IBRA project in Würzburg. It will need a reorientation and maybe a change in occupational profession, which may often mean reduced status and reduced wages. But it may sometimes present a good opportunity, as is shown in *case study 1*. The second way is seen in a coaching program, that will be suggested and demonstrated in *case study 2*.

Case study 1

S.V., a 20-year old man, suffered a stroke while he worked as an electric trainee. He received acute stroke care in the Neurological Clinic of the Johannes-Krankenhaus (Bielefeld) and 6 weeks of intensive rehabilitation in Bad Oeynhausen. On leaving the rehabilitation center he was diagnosed with a moderate anomic aphasia and moderate cognitive deficits in the domain of concentration and attention. A stepwise reintegration program started 2,5 months post-onset and by repeating the last year of training he qualified as an electrician, but did not find a job afterwards. In a second

rehabilitation phase, the occupational situation was focused in language therapy and neuropsychological training. Symptoms were reduced to a residual state of aphasia and to mild symptoms of attentional deficit. But two short-time attempts at working in two companies ended in failure. He was let go mainly because of his reduced working speed, reaction time and communicative deficits.

He returned to the out-patient therapy department and received further language and communication therapy with special focus on the job context. S.V. then quite successfully took part in a 1-year “ABM program” (employment-creation measure), a work reintegration project of limited time, as a machinist. At the end of this program, he again tried to work as an electrician, but was let go after 4 months. So, it became obvious, that the demands of his former profession were too high for his cognitive and conceptual capacities and he would profit more from a program that would give him the opportunity to choose a new profession. IBRA (integrative occupational rehabilitation for persons with aphasia) is a new special offer of this kind.

IBRA is a cooperative project of the “Berufsförderungswerk” (state-aided occupational promotion) in Nürnberg and the neurological rehabilitation center “Kiliani Klinik”, Bad Windsheim. The program is offered to aphasic patients who regained general working ability, but not necessarily in their former profession. It ensures an impairment-oriented therapy (e.g. physiotherapy, language therapy, psychological training) with special focus on the aphasia-specific therapy during the whole rehabilitation process, which lasts about two to three years. Therapy and supervision is organised by a Reha-manager at the Kiliani-Klinik, while Reha-assessment, job selection and work attempts take place at the “Berufsförderungswerk”. After a 6 months preparation course, training in apprenticing companies starts which is assisted by the individual case-manager and Reha-manager of each individual aphasic person. This very new program is obviously quite expensive but it seems to be the only chance for young aphasic persons with mild to moderate symptoms to find a new adequate occupational profession for their further life.

But both, IBRA and NBT, fail to recognize in a way the needs of most aphasic patients. The NBT is a very fruitful therapy and training in preparation for the job the person has to tackle afterwards. But it stops where most difficulties for the person with aphasia start – in his concrete daily social situation. IBRA gives an aphasic person the opportunity to learn a new subject and to deal with problems in this context, but it requires the person to move to Würzburg and leave his common social relations, which guarantee a certain amount of security and emotional stability. First experiences have shown that only very few aphasic persons make use of this offer. Concluding, we will submit an approach we call “train-and-coach” program, aiming especially at the communicative and neuropsychological problems that might arise in the specific work context and focusing on resources and strategies of the individual patient.

Case study 2

A male academic, W.N., suffered a stroke at the age of 50 with the initial diagnosis of a severe Wernicke's aphasia with profound deficits in his perception of spoken language. After a period of classical deficit-oriented aphasia therapy his symptoms were reduced to a mild to moderate form of Wernicke's aphasia, but with resisting deficits in auditory language perception, especially in text comprehension, phonemic paraphasias and symptoms of acalculia. A job-oriented therapy focusing on these three topics accompanied his attempt to return to his position by stepwise reintegration. But several difficulties led to the question of annuity.

As the patient was very motivated to stay in his professional position, he took part in a combined program of job-oriented therapy at the out-patients department of the Johannes-Krankenhaus and of therapeutic coaching at the language therapy center of the University of Bielefeld. Therapeutic coaching following a problem-solving approach in behavioral therapy comprises a *task-oriented problem analysis*, a systematic analysis and training of *resources and compensatory strategies* and the *formulation of realistic goals*. The task-oriented diagnostic screening covers job demands, language disabilities and demands, cognitive disabilities and demands, and communicative strategies and demands. It uses role-play, real-life video sequences and observations in several job contexts. The problems and resources of this special patient cannot be described here in detail (see Diekmeyer & Obermann, 2003). They were used to elaborate compensatory resources (e.g. systematic use of written language, using new e-media) and to define compensatory strategies, which were systematically trained in different contexts (e.g. systematic use of written key words for oral talk, special modality of "dictation style"). Specific goals were formulated for the seminar program of one semester. The program was then systematically prepared and accompanied by two students of clinical linguistics under supervision and a student tutor.

The three components of the formal program are highly interactive and cannot be seen as a linear-functional series of steps in the program. In addition, a regular evaluation, which is transparent for the patient and feeds back into coaching, has to accompany the program. It is based on information of others (e.g. ratings and comments of students and colleagues), self (e.g. self-ratings of success and problems), objectives (e.g. content of seminars, students' knowledge tests, videos, text analyses of emails etc.) about the contents, problems, costs and benefits of strategies and further aids. It is not yet clear, if these aids may suffice, but they did help the patient to manage his semester, with a positive recommendation from the students in his seminars.

5. Conclusion

To conclude we can formulate the following general results and remarks:

- Only about 8 % of young aphasic patients treated in the rehabilitation center am Rosengarten (Bad Oeynhausen) were successfully reintegrated in their vocational

position: only 64 % of those 25 patients, who were recommended for occupational reintegration by an expert team.

- Stepwise reintegration into employment is not sufficient for aphasic patients, not even for those with only residual or mild symptoms and slight cognitive deficits.
- Job-oriented therapy and training before reintegration into employment (e.g. NBT) is helpful, but it does not seem to offer sufficient help.

Some very young aphasic patients may be willing to change their occupational profession and take part in a long-term training as it is offered by IBRA, but this cannot be frequently used for several reasons. Instead, we suggest an approach of therapeutic coaching on the job, which is oriented to problem solving approaches and can be classified as a “train-and-coach” program. Of course, the classical rehabilitation center or an out-patients department cannot offer such programs. But regional therapeutic networks and ambulatory therapy centers, which have recently been established in several regions in Germany, may provide an adequate institutional context to offer such interdisciplinary programs.

One critical aspect for all these projects, as is evident in the small amount of literature on such approaches, is the problem of adequate measures and diagnostic inventories for job-relevant cognitive and communicative variables (e.g. Asmundsdottir, 2004). Further research is needed on this topic, and predictive factors for successful reintegration have to be isolated to help aphasic persons, motivated to be reintegrated into their occupational context, to find a realistic way back or a promising way forward. Individual therapeutic coaching on the job and the use of modern technology and resources may help patients with even moderate aphasic symptoms in their occupational environment.

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