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A Comparative Study of Post-Hospital Aphasic Rehabilitative Techniques

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Abstract

This study compared the performance of two categories of stroke-aphasic patients on the rehabilitative programmes exposed them to after the hospital treatment. Through a t-test statistic at the 0.05 alpha level we found significant differences in the performance of males and females, holistic and gestural rehabilitative strategies, fluent and non-fluent patients. The research findings revealed the mean values as ($X = 7.3$ / 4.5 , $t_{obs} = 6.2$: $P 0.05$); ($X = 6.8$ / 4.9 ; $t_{obs} = 3.52$; $P 0.05$); and ($X = 6.4$ / 4.5 ; $t_{obs} = 3.40$: $P 0.05$) respectively. Also, the results of the study showed that the holistic rehabilitative method performed better in the restoration of patients communicative skills. Finally, the paper gave some suggestions to be adopted in running a rewarding rehabilitative programmes.

Background

The resultant effect of stroke in our society has severely increased the population of aphasic patient with characterised condition of total deviation from biochemical norms of anatomical, physiological, psychiatric and psychological deficiencies in language, neuro-psychological and motor functions (Holland & Fores, 1993). This set of patients exhibited array of loss in their abilities to correctly receive and utter symbols as a result of brain damage, impaired reception and transmission of meaning through symbols. There is a clear disruption of words formation consequent upon the impairment of their cortical regions which resulted to breakdown of already acquired language functions found in adults (Coelha, 1991). Two categories of individuals are found in this society with the condition. Some are the fluent ones having Wernicke's transcortical sensory difficulties. The other groups are the non-fluents with language difficulties as a result

of problems in the brocas areas, transcortical motor areas and mixed transcortical (isolation) syndrome. Similarly, some of the patients find it difficult to comprehend spoken words, while some are unable to produce language with relatively preserved comprehensive abilities after hospital care.

In an attempt to alleviate their difficulties, series of rehabilitative phases and strategies have been structured. According to Peach (1993) the phases are acute care tagged Hospital Intensive Treatment lasting approximately 3 weeks, chronic care with the involvement of varied professionals and Home care with special focus on the compensatory training designed to ameliorate language performance in the deficient areas — The strategies are many with varied modalities. but, the researchers utilised two of the Management approaches as the post Hospital rehabilitative programmes with the identified patients. The two methods promoted structure — contextual modalities for successful language behaviours which in turn stimulated language utilization of an increasingly complex nature through compensatory modelling of auditory — verbal modalities. This management system engineered immediate means of basic communication with special focus on remediation of language deficits through stimulation of disrupted cognitive processes to improve long — run language functions.

Thus, the researchers aimed at training some of the patients with one of the approaches tagged Gestural method with simultaneous training of some via Holistic method so as to evaluate the efficacies of the two programmes in recommending the better one in rehabilitating the stroke aphasic patients. Although, the choice and selection of any rehabilitative approach depend on the nature, type and severity of the condition.

For the purpose of this study, the following hypotheses were tested:

1. There will be no significant difference in the performances of the patients exposed to holistic method and the ones trained through Gestural method.
2. There will be no significant difference between the relative performances of the aphasic males and their female counterparts.
3. The fluent aphasic patients would respond faster to the rehabilitative treatment than the non-fluent ones.

Method

20 subjects comprising of twelve (12) males and Eight (8) females were involved in the study. The subjects were carefully selected among the patients who received acute care from State Hospital, Ijebu-Ode, so as to have a specified distribution of both the fluent and non-fluent patients. The subjects were within the age range of 46—60 years.

The instruments used for this study were varied and many. Some of the instruments were used to stimulate the subjects' Visual actions, hearing activities as well as speech productions. Group of some instruments were employed to condition the activities of those who can neither produce understandable speech nor comprehend spoken sentences: While some of the instruments meant to reintegrate the patients back into the society. The list of instruments employed runs thus: Pictographic illustrations; Gross sounds such as bell and whistle, pantomimes, charts and pointing pen; Eye blinking strategies, visual objects and pictures to stimulate visual actions and verbal responses.

The subjects were subjected to individualised training programme of sixty days with a minimum of 6 hours training session per week in their various homes. The researchers utilised two rehabilitative techniques. The subjects were zoned into two groups of ten in each according to the nature of their condition. A group was exposed to Gestural Rehabilitative method, while the second group was trained through the Holistic Approach. This Holistic model enabled the researchers to make use of all the training strategies ranging from cognitive neuropsychological and stimulation strategy beginning with auditory stimulation of the patients, visual

action model of pairing real objects to realistic pictures of objects or matching of objects to pictures, verbal expressive training through the use of reflexive coughing or throat-clearing in establishing voluntary phonation of words, pragmatic system of establishing good communicational behaviour between the rapist and the patients. Also, the patients family members were invited towards the tail-end of the therapy to assist in instilling confidence and facilitating the use of daily communicational needs. With the Gestural strategy, the patients were trained through the use of pantomimes, sign systems, different eye-blinking to indicate Yes/No, matching of pictures to objects or picking-up the pictures of objects so called by the researchers. During the course of training all the patients were taught on how to communicate with other members of their families, how to use gestures, and pantomimes in making-out their needs and feelings, how to read facial expressions and gestures to mirror out the messages involved. They were taught on how to detect out messages and information from drawings and pictogrammes. Also, the researchers first of all counselled their family members on how to assist them in communicational development before they were incorporated into the programmes so as to engage the patients in constant communicational relationships.

After seven weeks of training exercises, the performances of the patients were evaluated and rated so as to compare their levels of attainment to one another. For easy computation the ratings were grouped in terms of constructs involved such as sex, nature of the condition and rehabilitative strategies employed. Thereafter, a t-test statistic method with an alpha level of 0.05 was utilised to compare means of the construct for significant differences.

Results

Table 1
Comparison of Holistic and Gestural Approach

Variables	N	Ex	X	SD	Df	t.pbs	t.tab	P
Holistic Approach	10	73	7.3	0.9	18	6.2	1.73	0.05
Gestural Approach	10	45	4.5	1.1				

The table 1 above shows the comparison of the two programmes utilised by the researchers in rehabilitating the aphasics. The calculated t-value of 6.2 in comparison with the table value of 1.73 indicates a significant difference between

the performances of therapeutic programmes. With the mean value of 7.3 of the holistic model as against 4.5 of gestural model clearly suggest that the holistic programme would be better than the gestural strategy in rehabilitating the aphasics.

Table II
Comparison of the Performances of the Males and Females

Sex	N	Ex	X	SD	Df	T.obs	T.tab	P
Males	10	68	6.8	0.98	18	3.52	1.73	0.05
Females	10	49	4.9	1.4				

In the table II above, the computed t-value of 3.52 when compared to the critical t-value of 1.73 indicated that there is a significant difference between the performances of the males and females on the programmes. The observable means suggest that the males performed better than a the females during the rehabilitative exercises.

Table III
Comparison of the Performances of the fluent and Non-Fluent Patients

Groupings	N	Ex	X	SD	Df	T.obs	T.tab	P
Fluent patients	08	51	5.4	1.3	14	3.40	1.76	0.05
Non-fluent patients	08	36	4.5	0.9				

Table III above shows the comparison of the performances of the fluent and non-fluent aphasic patients. The computed t-value of 3.40 when compared to the table value of 1.76 shows a significant difference in the performance of the fluent and non-fluent aphasic patients. The fluent patients performed better than the non-fluent ones. Also, the comparison of the mean (X) values clearly revealed that the fluent patients would respond faster and easier to the rehabilitative exercises than do the non-fluent ones.

Discussion

After eight weeks of training session, it was observed that the patients trained with the holistic therapeutic approach through which the researchers utilised a series of rehabilitative strategies performed better than a the patients trained with the gestural model which only exposed the patients to the non-verbal stimulation. The study established a significant difference in the performances of the patients as a result of the capabilities of the holistic approach

over gestural method. The holistic model performed better in the restoration of patients communicative skills, integration of psycho-social recovery mechanisms, optimal integration and restoration of a personal style of communication in real-life situations- acceptable in the patients environment, and provision of opportunity to learn more about communicative adequacy (Pachalska, 1993). Also, the model has a vantage edge over the gestural model with its clear demonstrable mechanisms to determine whether the patient trained has improved, remained the same or worsened.

The findings also revealed a significant difference in the performances of the males and females rehabilitated. During the training session, the researchers observed that the males responded faster and earlier than their female counterparts due to a lot of factors such as a clear demonstrations of eager to learn, excitable temperament, relative stability of mind and control of emotions, as against withdrawal syndrome demonstrated by a great number of female patients which contributed adversely to their inability to level-up.

Further investigation revealed that the fluent aphasic patients recorded better performances than their non-fluent counterparts. In this area, the study showed a significant difference between the performances of the fluent and non-fluent patients. The non-fluent patients found it difficult to perform due to their inability to produce volitional speech sounds as a consequence of apraxic speech or inability to recover to a level where they can demonstrate productive usage of single words in given tasks (Aronson, 1990; Beard & Prescott, 1991). The patients also demonstrated isolation syndrome, poor verbal recovery or severely restricted verbal output and poor articulated speech (Byng, 1992). All these conditions could be solved through treatment strategies of deblocking procedures to improve the volitional imitation of motor responses, self-generation of categorisation of names, complete sentences and traditional language training using stimulation techniques (Peach, 1993).

Conclusion and Suggestions

Aphasic rehabilitative programmes are designed to ameliorate the language deficiencies, verbal-expressive and auditory comprehensible abilities of the afflicted patients. This exercise could be achieved through the utilisation of several therapeutic models with the ultimate

aim of restoration of the lost skills, and behavioural characteristics which will in turn reintegrate the patients back into the society. The patients trained during this study were able to overcome their severe impairment in nearly all the language functions such as the production of understandable speech or writing, comprehending spoken as well as written language.

In order to rehabilitate the stroke-aphasics of our time a serious effort must be channelled towards identification and proper categorisation of the patients, provision of adequate therapeutic strategies which will enable them harness their potential resources in attaining a satisfactory life by realising their achievable targets. The focus of the rehabilitation must be on the training of the patients' residual capacities, language compensatory strategies, prevention of secondary and tertiary deficits, promotion of social integration and emotional adaptation (Peach, 1993). All these will help in reducing environmental complexities and disruption as well as helping to augment speech through communicational aids. Also, the training must incorporate language orientation, communication and psychological orientation mechanisms to aid in relating better in their environment.

The programme must be well structured or cliently directed with a clear goal of behavioural modification and rehabilitation of the communicative skills and psycho-social attributes deemed essential in everyday situation. While, at the same time, the speech therapists should try to stimulate the patients' language behaviours which will in turn promote the overall

language utilisation as well as developing language performances in the deficient areas.

The patients should be properly stimulated and encouraged to develop a great deal of communicational abilities and empowerment. In achieving this, the therapist will need to have a comprehensive knowledge of the patients' abilities to respond promptly to the training.

In addition, the speech therapist will need to encourage the patients' family to participate in the therapeutic programme rather than allowing them observe the programme only. The members of the patients' family should assist in the selection of topics to be discussed as well as materials in facilitating the interest of the aphasics towards the rehabilitative programmes.

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