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ABSTRACT

A survey of the itinerant teachers of 172 homebound students in Taiwan addressed major needs of the students, whose major health problems included absence of speech, motor handicaps, lack of body balance, and lack of bladder control. Teachers reported that cognitive ability and self-help skills were the two weakest areas for these students. Students and their families were reported as needing assistance in the areas of family income and parents' ability to independently educate their disabled children. The study concluded that the educational administration could act as a lead agency and ensure that the health division provides homebound students with needed medical rehabilitation services. Additional recommendations focus on providing parent education programs and family financial assistance; integrating medical, education, and social programs; and increasing provision of barrier-free environments and ancillary devices to assist in placement in formal educational settings. (Contains 14 references.) (DB)

A NEEDS ASSESSMENT OF HOMEBOUND STUDENTS

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Abstract

This study was intended to understand the service needs of homebound students from the perspectives of students' physical and mental functions and problems, as well as homebound education conditions. The Service Needs Survey developed in the study was used. Data were collected by surveying the itinerant teachers of 172 homebound students. The collected data were analyzed using mean, frequency, percentage, and the Chi-square test. The main conclusions drawn from the study are as follows: 1. Cognitive ability and self-help skill were the two weakest areas for homebound students. The most prevalent health problems for this student population included absence of speech, motor handicaps, body balance, and bladder control; 2. The most needed assistances in homebound education condition were family income and parents' ability to independently educate their disabled children. Some recommendations related to the conclusions were made in this study.

INTRODUCTION

The continuum of educational placement alternatives is usually considered necessary in meeting the special education needs of students with disabilities. These educational placement

alternatives may consist of regular class, itinerant teacher service, resource room, special class, special school, hospital and homebound service, and so on (Gearheart, Weishahn, and Gearheart, 1992; Ho, 1995). Among the above mentioned placements, the homebound approach that keeps students at home seems more special. However, homebound service remains one of the educational placement alternatives.

In describing the so called homebound instruction, Krik and Gallagher (1989) stated,

> sometimes children with physical handicaps are confined to hospitals or their homes for long periods of time. To avoid educational retardation, specially trained itinerant teachers travel to the students and tutor them during their convalescence. Usually local school systems assign teachers to help homebound children for an hour or more a day, assuming the youngsters are able. (p.64)

Heward and Orlansky (1988) and Salend (1990) also maintain that the students requiring homebound instruction may be those children who bave especially severe physical and health impairments, or who are recovering from surgery or an illness or who have been suspended from school. Those students nearly have a common characteristic related to the need of medical service. In most of the homebound instruction cases, the itinerant teachers may assume the major teaching responsibilty, nevertheless some alternative approaches still exist. For instance, an itinerant teacher may play the roles of coordination,

communication, and guidance in the homebound service program. He or she links homebound students with schools and classrooms by obtaining in-class assignments from the regular classroom teacher and delivering the student's completed assignments to the classroom teacher (Salend, 1990). In addition, Teleteaching, which uses telephones to allow several students to talk to each other and the teacher, is sometimes employed to enhance the efficiency of homebound instruction and allow students to interact with classmates. Typically, teleteaching is done in the morning and home visits are made in the afternoon to collect assignments and tutor individuals (Brady, 1988).

The homebound instruction model is not only used to serve severely or multiply handicapped children of school age, but it is also often applied to parent and sibling training emphasized in home-based early intervention program for handicapped preschoolers (Turnbull, 1983; Neisworth and Bagnato, 1987; Lewis and Lynch, 1988) in order to help these children's families deal with the problems of handicaps (Heward and Orlansky, 1988). A significant distinction between the homebound instruction model and home-based early intervention program is that the home-based early intervention program may employ, in addition to special educator, occupational or physical therapist, speech and language therapist, nurse, psychologist, social worker, or paraprofessional (Lynch, 1988), however, the homebound instruction model seems to have itinerant teacher as a major service provider. Notwithstanding the content and procedure of service provided to a homebound student may differ, Dykes and Venn (1983) asserted that homebound programs should not be

used to protect a child from society, placate parents, or keep the district from providing needed services to children who have never been in school. They also maintained that students are homebound for a limited time and a specific purpose. In other words for the most part, these homebound students should be expected to return to school in the near future.

Homebound instruction or homebound education is one of the current special education placements in the Republic of China on Taiwan. According to the Compulsory Education Ordinance and the Special Education Implementation Regulations, the school-age children who might receive homebound education should have one or more of the following conditions: severe mental retardation, physical disabilities, and behavior disorders. The eligibility for homebound education could be granted after the parental request has been accepted by the local Compulsory Education Committee. Usually the school personnel may assume most of the responsibilities of homebound instruction or service with no or little help from physical therapist, occupational therapist, speech therapist, psychologist, and other professionals.

The effectiveness of homebound education has been the focus of concern in the field of special education in recent years. An evaluation visit was conducted by the Ministry of Education in the academic year 1987 in order to understand the condition of homebound education in Taiwan. The evaluation report disclosed the great concern for program effectiveness and service needs unmet of homebound students (Tsai and Lin, 1989). Some other problems derived from this evaluation includes lack

of rehabilitation services, insufficient cooperation from parents, and incompetence of itinerant teachers.

The ineffectiveness of homebound education program might result from that the program design is unable to fully reflect what the students need. Generally speaking, the service needs of students with disabilities might not be limited to education field. Other services related to medical, social, and vocational rehabilitation might also be needed by these students, especially by homebound students. The Welfare Law for the Disabled stipulates that the government should establish the rehabilitation needs assessment system for the disabled in order to help them obtain adequate guidance and placement (Ministry of the Interior, 1990). Since majority of homebound students are severely or multiply handicapped, the multiplicity of their service needs seems evident. Therefore, it is fundamental to have a needs assessment of homebound students before service provision. The purpose of this study is to understand the service needs of homebound students from the aspects of students' physical and mental functions and problems, as well as homebound education conditions in order to improve the quality of homebound education program in Taiwan. More specifically, this study was intended to explore the following two research questions;

1. What are the physical and mental functions and problems of homebound students?
2. What are the homebound education conditions of students?

METHOD

The survey approach was employed in this study in order to collect the assessment data in relation to physical and mental functions and Problems, as well as homebound education conditions of students. The homebound student population was defined by a list of 2,247 students provided by 25 bureaus of education from Taiwan area in the academic year 1993. A systematic sampling method was applied and a sample of 172 homebound students was obtained. The itinerant teachers of these 172 homebound students were invited to help the assessment work of the study sample.

The assessment instrument employed in the study was the Service Needs Survey. It was developed upon (a) information obtained from the literature, (b) input from itinerant teachers of homebound education, and (c) a pilot sutdy. The final instrument included two major dimensions. The first dimension elicited information about the demographic characteristics of the homebound students. Items were developed which related to the name, sex, birth date, disability category and severity level, home address, parent name, teacher's name and address.

The second dimension of the Service Needs Survey was related the content of service needs assessment. It is composed of three assessment parts: the Basic Function Scale, Health Problem Checklist, and Homebound Education Condition Scale. The Basic Function Scale has 31 assessment items in total. These items were designed to assess the homebound students' gross motor (8 items), fine motor (3 items), self-help skill (6 items),

communication ability (5 items), cognitive ability (4 items), and social behavior (5 items). The invited itinerant teachers were asked to evaluate the physical and mental function level the students had for each item. The rating of 1 indicates no function, 2 means partial function, and 3 is complete function. Using the formal data collected from 172 homebound students, the reliability coefficient of Cronbach α was determined to be .9595 for the Basic Function Scale. It indicated that the Basic Function Scale had high internal consistency. The construct validity of the Basic Function Sacle was also tested by varimax rotation factor analysis (Norusis, 1986). The results obtained from factor analysis revealed that four factors with eigenvalues above 1.00 could be extracted and accounted for 72.5% of the total variance. The four factors could be defined and named as follows: (1) gross motor: including items 1, 2, 3, 4, 5, 6, 7, and 8; (2) self-help skill: including items 9, 10, 11, 12, 13, 14, 15, 16, and 17; (3) social communication: consisting of items 18, 19, 20, 27, 28, 29, 30, and 31; and (4) language and cognition: containing items 21, 22, 23, 24, 25, and 26. The Health Problem Checklist was composed of 12 health problem items the homebound students might have. The invited itinerant teachers were asked to mark the problem items the students had. As to the Homebound Education Condition Scale, it was organized by 6 items related to homebound education conditions of students.

For collecting the assessment data of this study, the Service Needs Survey was distributed to the itinerant teachers of 172 homebound students sampled and returned by postage-paid mail. The data analysis approaches were frequency, percentage, mean,

and standard deviation for demographic information illustrations, mean scores ranking, frequency, and percentage for research question 1, and frequency, percentage, as well as the Chi-square test for research question 2. Significance level of .05 was set for the purpose of statistical tests.

RESULTS

From the obtained demographic information of 172 homebound students, it is found that 109 (63.4%) are males and 63 (36.6%) are females. The age range was between 16 and 6. They had a mean age of 10.66 years with a standard deviation of 2.60. The disability categories of the sampled students were depicted by frequency and percentage and are shown in Table 1. From Table 1, it could be easily found that most of the homebound students are multiply handicapped, mentally retarded, or orthopedically impaired.

Table 1
Disability Categories of Students

Category	Frequency	Percentage
Mental Retardation	63	36.6
Visual Impairment	1	.6
Orthopedic Impairment	19	11.0
Multiple Handicaps	87	50.6
Autism	1	.6
Missing Data	1	.6

The physical and mental functions of homebound students

were revealed by the assessment results from the Basic Function Scale and shown in Table 2. In Table 2 the basic function items were ranked according to their mean scores. The higher the mean score, the higher function level a homebound student may have.

Inspection of Table 2 indicates that nine basic function items of "no function" (mean score range between 1~1.5) are bathing, color identification, using chopsticks, teeth brushing, figure identification, telling short sentence, number identification, washing face, as well as dressing and undressing. Other 22 basic function items are all within the category of " partial function" (mean score range between 1.5~2.5). No basic function item reaches the level of "complete function" (mean score above 2.5). In view of the nature of those nine "no function" items, they seem to pertain to self-help and cognitive ability areas.

On the other hand, Table 3 presents the mean scores of six basic function areas by rank order. Among the six basic function areas, both cognitive ability and self-help skill appear to be the weakest areas for homebound students. However, the homebound students also seemed to need somewhat help in other areas of fine motor, communication ability, social behavior, and gross motor.

The health problem conditions of homebound students were shown in Table 4 by freqwency and percentage. From the data of Table 4, it is found that more than one half of 172 homebound

Table 2
Rank Order of Basic Function Items

Basic Function Items	Mean Scores
Bathing	1.304
Color identification	1.371
Using Chopsticks	1.380
Teeth brushing	1.388
Figure identification (○ , □ , △)	1.388
Telling short sentence	1.402
Number identification (1, 2, 3)	1.408
Washing face	1.424
Dressing and undressing	1.459
Jumping	1.518
Toileting	1.525
Telling one word	1.568
Running	1.600
Greeting	1.625
Body part identification (eye, mouth, nose)	1.627
Playing with others	1.735
Expressing needs	1.750
R lling	1.751
Tossing	1.776
Scribbling	1.795
Feeding	1.853
Walking	1.859
Eye contact in conversation	1.888
Response to greeting	1.905
Understanding instruction	1.918
Spoon grasping	1.930
Standing	1.959
Family member identification	2.071
Crawling	2.165
Response to calling	2.271
Sitting	2.379

Table 3

Rank Order of Basic Function Areas

Basic Function Areas	Mean
Cognitive ability	1.4485
Self-help skill	1.4922
Fine motor	1.7017
Communication ability	1.7818
Social behavior	1.8448
Gross motor	1.8759

Table 4

Health Problem Conditions of Students (multiple choices allowed)

Health Problems	f	%
Hearing	26	15.1
Vision	34	19.8
Tactile acuity	40	23.3
Body balance	100	581
Epilepsy	36	20.9
Bowel and bladder control	99	57.6
Absence of speech	117	68.0
Emotional disorder	62	36.0
Hyperactivity	43	25.0
Motor handicaps	117	68.0
Frequent sickness	60	34.9
Other	43	25.0

students appeared to have health problems of absence of speech, motor handicaps, body balance, and bowel and bladder control. Other problems such as emotional disorder, frequent sickness, and hyperactivity also show considerably high incidence. These results indicate that the homebound students seemed to have strong needs for medical services.

The homebound education conditions of students were understood through information obtained from the Homebound Education Condition Scale. The results were presented item by item as follows.

The daily living care conditions of homebound students (171 students and one missing data) were shown in Table 5. Inspection of Table 5 indicates that the majority (63.2%) of students' daily living care conditions are fair. Various care conditions of homebound students are inconsistent (X^2=81.789, p =.000).

Table 5

Daily Living Care Conditions of Students

	Good	Fair	Poor	Total
f	51	108	12	171
%	29.8	63.2	7.0	100

X^2=81.789 p =.000

The homebound education environments of students were presented in Table 6. The majority (59.7%) of students' homebound education environments reached the fair level. The

differences in the distribution of homebound education environments were significant for the students sampled (X^2= 54.000, p =.000)

Table 6

Homebound Education Environments of Students

	Good	Fair	Poor	Total
f	30	102	39	171
%	17.5	59.7	22.8	100

X^2=54.000 p =.000

The possibility of students' family income to pay their home care was presented in Table 7. Inspection of Table 7 shows that 44.6% of students could not afford to their home care though 55.4% of students could afford to. The difference between these two percentages was not statistically significant (X^2=1.952, p =.162).

Table 7

Possibility of Students' Family Income to Pay Their Home Care

	Yes	No	Total
f	92	74	166
%	55.4	44.6	100

X^2=1.952 p =.162

The parents' ability to independently educate their disabled children was displayed in Table 8. Inspection of Table 8 reveals

that only 10% of parents had sufficient ability to independently educate their children, the ability of 48.2% of parents were fair, and 41.8% were insufficient. The ability differences among parents seemed to exist in educating their disabled children (X^2=42.718, p =.000). It is obvious to note that a quite high percentage of parents may need appropriate parent education and guidance in order to enhance their ability to independently educate disabled children.

Table 8
Parents' Ability to Independently Educate Their Disabled Children

	Sufficient	Fair	Insufficient	Total
f	17	82	71	170
%	10.0	48.2	41.8	100

X^2=42.718 p =.000

The parents' attitudes toward outside help for their children were presented in Table 9. Table 9 indicates that the parents' attitudes toward outside help were inconsistent (X^2=94.671, p = .000). Most of parents (61.8%) had warm attitudes, 37% were fair, and very few parents (1.2%) were cold.

Table 9
Parents' Attitudes Toward Outside Help

	Warm	Fair	Cold	Total
f	105	63	2	170
%	61.8	37.0	1.2	100

X^2=94.671 p =.000

The cooperation levels of parents to outside guidance were shown in Table 10. Inspection of Table 10 reveals that the cooperation levels of parents to outside guidance were significantly different (X^2=77.473, p=.000) More than half of parents (58.7%) appeared to have good cooperation, 37.7% were fair, and only 3.6% were poor. These results seemed to coincide with the parents' attitudes toward outside help.

Table 10

Cooperation Levels of Parents to Outside Guidance

	Good	Fair	Poor	Total
f	98	63	6	167
%	58.7	37.7	3.6	100

X^2=77.473 p =.000

DISCUSSION

The results of this investigation reveal that the homebound students appeared to have low function of development in the areas of cognitive ability, self-help skill, fine motor, communication ability, social behavior, and gross motor. These students also had various health problems such as absence of speech, motor handicaps, body balance, bowel and bladder control and so on. In view of the low function areas and health problems the homebound students might have, we could understand that the medical rehabilitation is essential for this student population. If the medical service needs of homebound

students can not be met, it seems difficult for itinerant teachers to make substantial help for these students. In other words, if only educational division is responsible for the homebound education program, it is of little benefit to students. Therefore, it is necessary that the educational division should act as a lead agency and seek help from the health division in order to provide homebound students the needed medical rehabilitation services.

In considering the homebound education conditions of students, it is found that the daily living care conditions and homebound education environments of most students were fair and most of the parents were positive to outside help and guidance. However, it is also found that a considerably high percentage of students had problems of low farmily income and parents' education ability. Family income and parents' ability to independently educate their disabled children might be much associated with the quality of homebound education. Thus, for the purpose of providing an effective homebound education, the development of needed financial assistance and parent education programs may be important for some families. In the case of providing financial assistance to homebound students, the educational division may need to work together with the social welfare division in order to obtain the needed resource. So, the homebound service is not only an educational and medical program, but also a social program in nature.

From the assessment results of homebound students' physical and mental functions and problems, as well as homebound education conditions, it seems obvious that the

service needs of homebound students are quite various. Based on the results of this study, several recommendations are made as follows:

1. It is essential to fully implement the rehabilitation needs assessment system stipulated on the Welfare Law for the Disabled in order to understand the needs of homebound students before provision of services.
2. An integration of medical, educational, and social programs is necessary for serving homebound students. The educational administration could act as a lead agency to coordinate educational, medical, and social services which may be provided to homebound students. In addition, an interagency coordinating council should be organized in order to inventory existing services and resources and promote interagency coordination.
3. Due to the urgent needs of medical rehabilitation for homebound students, an alternative solution may be made through contract purchase by the educational division before the integration of medical, educational, and social programs.
4. The reason for some disabled students to become homebound cases may be related to their underdevelopment in self-help and motor skills. Therefore, the provision of barrier-free environments and ancillary devices for homebound students may be helpful to have them placed in formal educational setting. In other words, homebound education is not a must in the educational placement alternatives. It depends on how good the provision of barrier-free environments and

ancillary devices are.

5. Owing to many parents' ability to independently educate their disabled children are insufficient, the itinerant teachers should play a major role in parent education to help these parents learn how to teach their homebound children.

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