Minnesota Studies in Vocational Rehabilitation:

VI. A Survey of the Physically Handicapped in Minnesota

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Preface

This is the sixth bulletin in the current series of Minnesota Studies in Vocational Rehabilitation. These bulletins have dealt with two major problem areas: (1) extent and magnitude of employment problems of vocationally handicapped persons, and (2) principles, policies and techniques for improved effectiveness of job placement procedures. Research underlying this series of bulletins was supported in large measure by the Office of Vocational Rehabilitation in the U. S. Department of Health, Education, and Welfare.

Support for the research study described in this bulletin was provided largely by the State of Minnesota Interim Commission on Employment of Handicapped Persons, thereby providing an excellent example of close and effective research cooperation between federal and state government agencies, and a state university.

The Interim Commission, under the chairmanship of the Honorable Mr. Curtis B. Warnke, sought to obtain facts concerning the number of handicapped persons in Minnesota, their age, sex, type of disability and employment status. Such basic facts were needed in their attempts to evaluate effectiveness of existing state laws relating to employment of handicapped persons. Available evidence proved to be inadequate, and they turned to the Industrial Relations Center for assistance.

Fortunately, the IRC was already at work on similar problems for the Office of Vocational Rehabilitation and thus had the nucleus of a trained professional staff with special interest and competence in this area. Drs. George W. England and Lloyd H. Lofquist provided leadership and supervision for the additional personnel selected for a special survey team. A research contract was signed in the middle of June and the report was completed in September of 1958. Dr. Kenneth E. Clark, Chairman of the Department of Psychology, served as special consultant to the project. Mr. Sidney Goldish, Director of the Research Department of the Minneapolis Star and Tribune, and his statewide staff of professional interviewers played a signal role in the success of the survey. The IRC Survey Directors were James H. Koplin, Stephen J. Carroll, Jr. and Allan C. Yater, graduate students in psychology and industrial relations. IRC staff members Professor Donald G. Paterson and Rene V. Dawis, and Interim Commission members Larry W. Binger of Minnesota Mining and Manufacturing Co., and Donald Savelkoul of the Minnesota (AFL-CIO) Federation of Labor, provided valuable counsel. Materials and data gathered in prior and concurrent OVR-sponsored IRC surveys greatly facilitated the survey design for the State of Minnesota project. The IRC provided administration,

general direction, facilities and a nucleus of professionally trained staff members for the supervision of the project.

It is worth repeating that the survey described in this bulletin was indeed a cooperative research venture, underscoring the role of the IRC as an agency to integrate and coordinate team research in employment and industrial relations. It provides also an outstanding example of the advantages of mutual cooperation between state and federal agencies. Experience from the OVR studies greatly facilitated the Interim Commission survey; results from the Interim Commission survey will benefit not only the citizens of Minnesota, but will be of much value in advancing the continuing basic research probes of OVR. The Industrial Relations Center has been able to continue its role as a catalytic agent in providing the public with a growing body of current knowledge and understanding of employment relations. The IRC is grateful to the Interim Commission and to OVR for their cooperation in making this bulletin possible.

HERBERT G. HENEMAN, JR.

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*8. Approximately 33% of the handicapped in the labor force age range who are not working have worked since their injury or illness.

The following appear to be some of the major implications of the survey findings:

1. The survey estimate of approximately 323,000 physically handicapped persons in the state of Minnesota is compelling evidence of the magnitude and importance of the problems concerning the physically handicapped.
2. A comparison of this large number of physically handicapped persons with the number of persons rehabilitated by the state each year (approximately 1,000) makes it evident that an overwhelming proportion of the handicapped population is not receiving service from the rehabilitation agencies of the state.
3. The need for rehabilitation services (including job placement) by the handicapped in Minnesota is clearly shown by the facts that over half (56%) of the handicapped population of labor force age range are currently unemployed, and about 21% of this group (22,000) are actively seeking employment.
4. It would seem desirable to increase services to the rural handicapped population, since approximately 41% (118,000) of the non-institutional handicapped live in rural areas. This geographical distribution of the handicapped suggests the need for more rehabilitation services outside of major urban centers.
5. A comparison of the age distributions of the physically handicapped in Minnesota with the total group rehabilitated by the State Division of Vocational Rehabilitation (fiscal year 1956-57) indicates the need for extending services to persons at higher age levels. Approximately 60% of the rehabilitated group were below age 30 while only 30% of the Minnesota handicapped are below age 30.
6. In view of the effect of Workmen's Compensation on employment of the physically handicapped, it is interesting to note that employment accidents are the origin of disability for only 9% of the Minnesota handicapped, 4% originated from war injuries or illness, and 60% originated from illness.

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* These estimates pertain to the non-institutionalized population only.

A Survey of the Physically Handicapped in Minnesota

Summary and Implications

A survey of the physically handicapped population of Minnesota was conducted by the Industrial Relations Center of the University of Minnesota for the State Legislature's Interim Commission on the Employment of the Handicapped. The survey was completed between July 22 and August 4, 1958.

Using information obtained from interviews at 2,440 households and questionnaires completed by 523 hospitals and related institutions in Minnesota, the following estimates were made:

1. There are approximately 323,000 physically handicapped persons in Minnesota. This includes about 288,000 persons in households and about 35,000 persons in institutions (such as hospitals, special schools and nursing homes). Of those in households, 183,000 are men and 105,000 are women.

2. The three largest disability groups are orthopedic (89,000), cardiovascular (59,000), and generalized or systemic (32,000). These three groups comprise about half of all the physically handicapped in the state.

3. Approximately 40,000 handicapped persons are under 14 years of age, 200,000 are in the labor force age range of 14-64, and 77,000 are 65 and over.

*4. Disabilities were caused by illness in 60% of the cases. Employment accidents accounted for 9% of the disabilities and only 4% were caused by war injuries and/or illnesses.

*5. A large percentage of handicapped persons stated that they received no assistance from agencies such as the Division of Vocational Rehabilitation and the State Employment Service. Most of those who did receive assistance received medical, surgical, or hospital services.

*6. Over half (56%) of the handicapped population in the labor force age (14-64 years) are currently not working.

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* These estimates pertain to the non-institutionalized population only.

*7. About 22,000 (21%) of the handicapped in the labor force age range who are not working are actively looking for work.

*8. Approximately 33% of the handicapped in the labor force age range who are not working have worked since their injury or illness.

The following appear to be some of the major implications of the survey findings:

1. The survey estimate of approximately 323,000 physically handicapped persons in the state of Minnesota is compelling evidence of the magnitude and importance of the problems concerning the physically handicapped.
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4. It would seem desirable to increase services to the rural handicapped population, since approximately 41% (118,000) of the non-institutional handicapped live in rural areas. This geographical distribution of the handicapped suggests the need for more rehabilitation services outside of major urban centers.
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6. In view of the effect of Workmen's Compensation on employment of the physically handicapped, it is interesting to note that employment accidents are the origin of disability for only 9% of the Minnesota handicapped, 4% originated from war injuries or illness, and 60% originated from illness.

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7. Other data obtained in the survey, such as that on number of handicapped in each disability area, should be useful in estimating the extent to which the total state rehabilitation program is meeting the needs of the physically handicapped population.
8. The importance of these implications points to the necessity for establishing a continuous and active research program as an integral part of the State Division of Vocational Rehabilitation. Present provision for research by the agency is apparently limited to compilation of annual report statistics.
9. The above implications indicate that the combined services of State DVR, State Employment Service and related agencies are not meeting the needs of the physically handicapped in Minnesota. This suggests the need for expansion of the state programs, and the desirability of continuing study of the problems of the physically handicapped in Minnesota.

Introduction

The 1957 Session of the Minnesota State Legislature appointed an Interim Commission, with Representative Curtis B. Warnke as chairman, to investigate the problems of the physically handicapped population in Minnesota.[1] As a part of this total investigation, the Industrial Relations Center of the University of Minnesota, through an agreement with the Interim Commission, conducted a statewide survey to estimate the number of physically handicapped persons in the state and to study such things as the age, sex, disability distribution, and employment status of these persons. The information gained from the survey is to be used in making recommendations to the State Legislature concerning problems of the handicapped.

A review of available data on the incidence of disability in the general population revealed the inadequacy of current information on the nature and extent of illness and disability in the general and hospitalized populations. While some figures were available from local, state, and federal health records, census reports, workman's compensation commissions, and industrial and safety organizations, these were not enough to answer the questions raised by the Interim Commission.

Purposes and Scope

The survey was designed to answer the following questions:

1. How many physically handicapped[2] persons are living in Minnesota?
2. What are the major disabilities of these persons?
3. How are the handicapped distributed according to age?
4. How did these persons become handicapped?
5. What services have these persons received from agencies such as the State Employment Service, the Division of Vocational Rehabilitation, and the Veteran's Administration?

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[1] Minnesota State Legislation. 1957 Session Laws. Senate File 1457, Chapter 829.

[2] The "physically handicapped" individual is defined in Public Law 565 (Vocational Rehabilitation Amendments of 1954) as "any individual who is under a physical or mental disability which constitutes a substantial handicap to employment, but which is of such a nature that vocational rehabilitation may reasonably be expected to render him fit to engage in a remunerative occupation." (Sec. 11b) In the implementation of the law by public agencies, "physical or mental disability" has come to include emotional disabilities, that is, mental illness. In this report, "physically handicapped" will be used to refer collectively to the physically handicapped (such as orthopedics, amputees, cardiacs, tuberculosis patients, and the cerebral palsied), the mentally handicapped (mentally retarded), and the emotionally handicapped (those suffering from mental illness).

6. What is the employment status of the handicapped?
7. Do the unemployed handicapped persons want employment and feel that they could be employed?
8. Have the unemployed handicapped persons been employed since becoming handicapped?

To answer these questions, two related statewide surveys were conducted. One survey covered a random sample of households in Minnesota for the purpose of estimating the number of physically disabled persons by type of disability and age in the general non-institutionalized population. The second survey covered every hospital, institution, nursing home and boarding-care home in Minnesota. An estimate of the number of physically handicapped persons would be incomplete without this second survey, since a significant number of handicapped individuals are in hospitals and related institutions. This report discusses the methods used in carrying out these statewide surveys and presents the major findings.

Method

Household Survey: The household survey utilized a questionnaire developed in previous studies of the physically handicapped in Minneapolis and St. Paul.[3] It had been developed by the Industrial Relations Center vocational rehabilitation project staff and was known to be an effective instrument for obtaining information concerning the characteristics of physically handicapped individuals. Only slight modifications were needed to adapt the questionnaire to this study. Other information collected in over a year of Industrial Relations Center research also proved useful to this study. It was found, for example, that the best way to collect accurate comprehensive data on the handicapped population was to conduct an interview survey of a random sample of the general population.[4] This bears out similar findings of the National Health Survey of 1935-36.[5]

After careful consideration of the questions to be answered, the questionnaire was modified to include specific items necessary for this study. The questionnaire was then pretested by members of the research staff in different socio-economic areas within the city of Minneapolis. The pretesting indicated that the interview questionnaire would provide answers

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[3] *Minnesota Studies in Vocational Rehabilitation: V. Methodological Problems in Rehabilitation Research*, IRC Bulletin 25, December 1958.

[4] *Op. cit.*

[5] U. S. Federal Security Agency, Public Health Service, Division of Public Health Methods. The national health survey: 1935-1936. *Publ. Hlth. Bibliogr. Ser.*, 1951, 85, No. 5.

to questions the survey was trying to answer. It also indicated that this information could be coded reliably and analyzed efficiently. Pretest findings resulted in further refinements of the questionnaire.[6]

Detailed interview instructions were prepared and tested by the research staff. These instructions were designed to insure proper use of the questionnaire by each interviewer.

The survey data were collected between July 22 and August 4, 1958 by a staff of professional interviewers employed and trained for the Minnesota Poll studies.[7] The time limits within which this project had to be completed made it impossible to hire a new group of interviewers and conduct training sessions.

A total of 2,440 households throughout the state were interviewed. These households included 940 rural households and 1,500 urban households. The sampling procedure utilized by the Minnesota Poll in its surveys was made available to the Industrial Relations Center for this project. It was modified to increase the number of interviews conducted in each area. The sample was designed to be representative of all households in the state with respect to population density and geographic location. A more detailed discussion of the sampling procedure can be found in Appendix A-1.

Institutional Survey: A complete list of all licensed[8] hospitals (both general and specialized), institutions, special schools, nursing homes, and boarding care homes in Minnesota as of May 1, 1958, was obtained from the Minnesota Department of Health.[9] This list was supplemented by the addition of the names of all public specialized institutions and schools concerned with confinement and training under the control of the Minnesota Department of Welfare and all Federal Hospitals within the borders of Minnesota. A check of this list against all hospitals and boarding-care or nursing homes listed in the Minneapolis and St. Paul telephone directories resulted in the addition of only one institution, a boarding-care home.

A questionnaire[10] was designed to identify by type of disability and age all persons who were handicapped and currently hospitalized or insti-

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[6] See Appendix C for a copy of the household survey questionnaire.

[7] The Minnesota Poll is a continuing survey by the Research Department of the Minneapolis Star and Tribune.

[8] Hospitals and related institutions in Minnesota are licensed under the provisions of Sections 144.50 to 144.58, inclusive, Minnesota Statutes. These statutes cover all places in which "any accommodation is maintained, furnished, or offered for the hospitalization of the sick or injured or for maternity care of more than one woman within a period of six months or for care of three or more aged or infirm persons requiring or receiving chronic or convalescent care."

[9] Minnesota Department of Health. *Minnesota directory of licensed hospitals and related institutions, 1958.* Minneapolis: University of Minnesota, 1958.

[10] See Appendix C for a copy of the institutional survey questionnaire.

tutionalized in Minnesota. In developing the questionnaire, consultations were held with the directors and medical personnel of several of the larger hospitals and institutions in Minneapolis to determine the best method to use in classifying patients as handicapped and to see what terminology was most common and understandable to hospital personnel. A complete description of questionnaire design and methodology can be found in Appendix A-2.

Questionnaires were mailed to each of the 641 hospitals, special institutions and schools, nursing and boarding-care homes on the survey list.[11] Hospitals and institutions with capacities of over 150 beds were informed that additional questionnaires were available for use in each ward or at each nursing station if this procedure was preferred.

At the end of a two-week period, a follow-up postcard was sent to non-responding institutions. A follow-up letter was sent to non-respondents at the end of three weeks.

Results

Each of the questions raised by the Interim Commission is treated separately in the discussion that follows.

Final estimates from the sample of households were computed by applying a multiplier to the sample frequencies to make estimates for all households in the state. These estimates were further adjusted upwards by thirty per cent to correct for those handicapped persons in the household sample who were not identified. This thirty per cent adjustment was derived from previous Industrial Relations Center research which showed that, in a survey such as this, about thirty per cent of the actual number of handicapped individuals present in a particular sample will not be reported.[12]

Figures from the survey of hospitals and related institutions were adjusted to account for the unreturned questionnaires. Questionnaires that were usable for analysis were received from about 82% of the hospitals and related institutions in Minnesota. These had, however, 91% of the available hospital and institutional beds.

Technical procedures such as those used in estimating for the whole population from the sample are discussed in Appendix A-1 for the household survey and Appendix A-2 for the institutional survey. A detailed

[11] Seven maternity homes with a total bed capacity of 17 beds were not sent questionnaires.

[12] *Minnesota Studies in Vocational Rehabilitation: V. Methodological Problems in Rehabilitation Research*, IRC Bulletin 25, December 1958.

supplement to the results section is presented in tabular form in Appendix B.

1. **How many physically handicapped persons are currently living in Minnesota?**

2. **What are the major disabilities of these persons?**

Table 1 presents the answers to these questions based upon the best estimates from the survey data. Column 1 gives the sample frequencies for each type of disability. These are the number of handicapped persons in each disability category found in the household survey. These sample frequencies are expanded to estimates for the total state population in column 2, and adjusted to correct for the unidentified handicapped persons in column 3. The institutionalized handicapped, corrected to account for all hospitals and related institutions in Minnesota, are given in column 4. These are added to the adjusted estimates in column 3 to give a total estimate of the number of physically handicapped persons currently living in Minnesota in each disability category in column 5.

Table 1

Estimated number of handicapped persons in the state of Minnesota for each type of disability

Disability	Sample (1) N	Estimate for Entire State (2) From Sample	(3) Adjusted[a]	(4) Institutionalized[b]	(5) Total[c]
Orthopedic	158	61,200	87,430	1,760	89,000
Cardiovascular	99	38,340	54,770	4,530	59,000
Generalized or systemic	54	20,900	29,860	2,560	32,000
Neurological	45	17,430	24,910	1,510	26,000
Visual	31	12,000	17,150	820	18,000
Respiratory	29	11,240	16,060	1,150	17,000
Neuropsychiatric	25	9,690	13,840	12,260	26,000
Gastro-intestinal	20	7,750	11,070	610	12,000
Hearing	18	6,960	9,950	740	11,000
Mental retardation	15	5,810	8,300	6,590	15,000
Genito-urinary	5	1,940	2,770	610	3,000
Skin and allergy	4	1,550	2,220	190	2,000
Speech	2	770	1,100	160	1,000
Miscellaneous	16	6,200	8,840	1,530	12,000
Total	521	201,780	288,270	35,020	323,000

[a] All figures increased 30% to correct for unidentified handicapped persons.

[b] Adjusted to include non-responding institutions.

[c] Rounded to the nearest thousand.

It can be seen from Table 1 that there are an estimated 323,000 handicapped in Minnesota. This is approximately 10% of the total population of Minnesota. If it is desired to exclude the institutionalized population from this number, there are approximately 288,000 handicapped persons in the state. To this figure should be attached a possible error of plus or minus 46,000.[13] Much more confidence can be placed in the *unadjusted* estimates of the handicapped based only on the household survey. This total is 201,780 plus or minus 1,200.

Estimates of the number of handicapped persons in each disability category in columns 3 and 5 should be accepted with caution. The thirty

Figure 1

Percentage and estimated number of handicapped persons by sex for each disability[a]

Disability	N	Men	Women
Orthopedic	158	67%(59,000)	33%(29,000)
Cardiovascular	99	58%(32,000)	42%(23,000)
Generalized or systemic	54	61%(18,000)	39%(12,000)
Neurological	45	56%(14,000)	44%(11,000)
Visual	31	77%(13,000)	23(4,000)
Respiratory	29	62%(10,000)	38%(6,000)
Neuropsychiatric	25	72%(10,000)	28%(4,000)
Gastro-intestinal	20	75%(8,000)	25%(3,000)
Hearing	18	56%(6,000)	44%(4,000)
Mental retardation	15	60%(5,000)	40%(3,000)
Miscellaneous	27	56%(8,000)	44%(6,000)
Total[b]	521	63%(183,000)	37%(105,000)

[a] Does not include the institutionalized population.

[b] Numerical estimates are based on adjusted household estimates for each disability category rounded to the nearest thousand.

[13] See Appendix A-1 for a technical discussion of the accuracy of estimates.

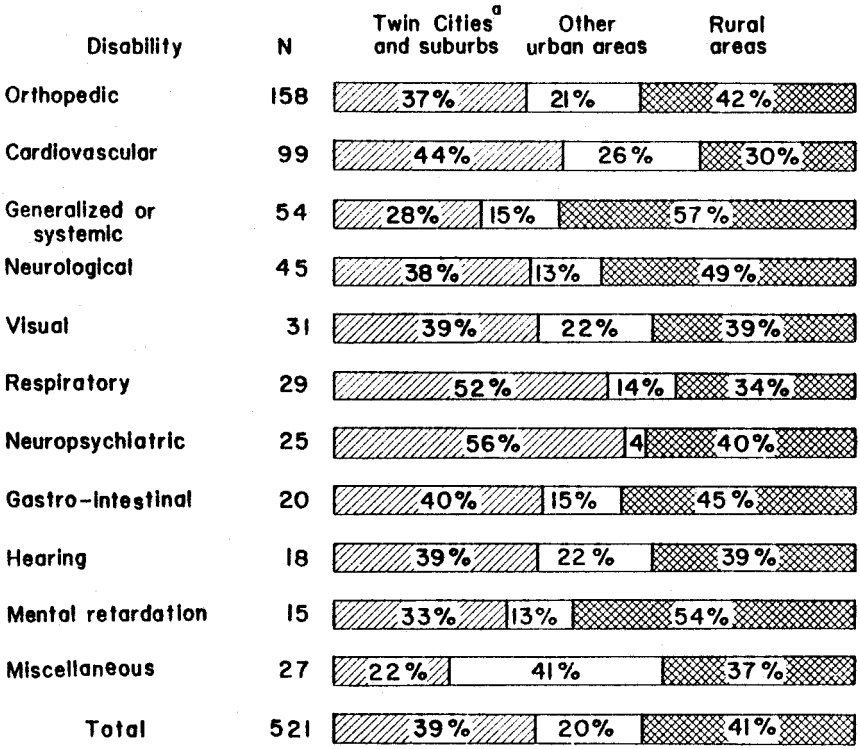
per cent adjustment to correct for unidentified handicapped persons was applied equally across all disability categories. However, the proportions of identified handicapped persons may not be the same in each disability category.

Figure 1 gives the percentage of males and females in each disability category and presents the estimated number of males and females in the state for each type of disability. Data presented apply only to the non-institutionalized handicapped population.

Figure 2 gives the percentage of handicapped persons in each geographic location by type of disability and presents the estimated number of handicapped individuals in each of these geographic locations. The data given are on non-institutionalized handicapped persons only.

Figure 2

Geographic percentage distribution by disability



[a] Includes Minneapolis–St. Paul and surrounding metropolitan area. Other urban areas include all other cities and towns with population of 2,500 or more. Rural areas include towns and villages with population of less than 2,500, and rural farm and rural non-farm homes.

3. How is the handicapped population distributed by age?

Table 2 presents three age categories for the handicapped population: persons under 14 who have not yet reached labor force age, those in the 14 to 64 age group who constitute the labor force age range, and the over 64 age group made up of those persons who have reached retirement age.

Table 2

Estimated number of handicapped persons in the state of Minnesota by age

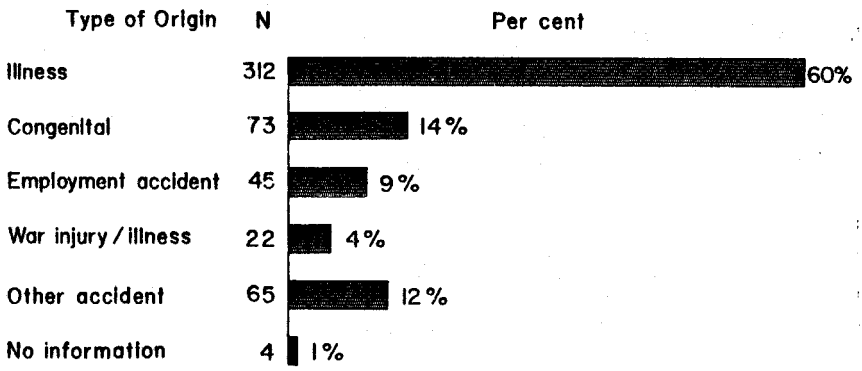
Age	Sample (1) N	Estimate for Entire State (2) From Sample	(3) Adjusted[a]	(4) Institutionalized[b]	(5) Total[c]
Under 14	69	26,720	38,170	1,860	40,000
14-64	333	128,980	184,260	16,410	200,000
65 and over	109	42,210	60,310	16,750	77,000
No age reported	10	3,870	5,530	.....	6,000
Total	521	201,780	288,270	35,020	323,000

[a] All figures increased 30% to correct for unidentified handicapped persons.
[b] Adjusted to include non-responding institutions.
[c] Rounded to the nearest thousand.

For the questions which follow (Nos. 4 through 8), the data presented were derived from the household survey, and therefore pertain only to the non-institutionalized handicapped population.

Figure 3

Percentage distribution of origin of handicap



4. How did these persons become handicapped?

Figure 3 indicates that illness accounts for the disabilities of 60% of the total number of non-institutionalized handicapped persons.

Table 3 presents this same information in more detail by type of disability. These percentages are applicable to all handicapped individuals in the state. Since the numbers on which the percentages are based are smaller than in Figure 3 due to the finer breakdown, more caution must be exercised in interpreting them.

Table 3

Percentage distribution of origin of handicap by disability

Disability	N	Origin of Handicap					
		Employment Accident	Illness	Congenital	War Injury or Illness	Other Accident	Don't Know
		%	%	%	%	%	%
Orthopedic	158	23	32	11	6	28	0
Cardiovascular	99	1	88	7	2	1	1
Generalized or systemic	54	2	88	6	2	2	0
Neurological	45	0	69	18	0	11	2
Visual	31	16	35	26	0	23	0
Respiratory	29	0	90	3	7	0	0
Neuropsychiatric	25	0	68	8	8	12	4
Gastro-intestinal	20	5	75	5	15	0	0
Hearing	18	0	39	39	10	6	6
Mental retardation	15	0	20	80	0	0	0
Miscellaneous	27	4	55	26	4	11	0
Total	521	9	59	14	4	13	1

5. What services have the handicapped received from agencies such as the Division of Vocational Rehabilitation, the State Employment Service, and the Veterans Administration?

Table 4 gives the percentages of handicapped persons who have received various types of services from the agencies listed. The table shows that a large percentage of the handicapped population received no aid from these agencies. For example: 82% of the handicapped population received no aid from the Division of Vocational Rehabilitation, 85% received no aid from the State Employment Service, and 80% received no aid from the Veterans Hospital.

Table 4

Percentages of the handicapped population receiving various services from the agencies listed[a]

Type of Assistance Received	Agencies				
	DVR	ES	Veterans Hospital	VA Other Than from Hospitals	Other Agencies[b]
	%	%	%	%	%
No response to question about this agency	11	12	12	13	8
No assistance received	82	85	80	83	57
Medical, surgical or hospital service	2	1	7	2	22
Counseling and guidance	2	0	1	1	5
Training for a job	2	0	0	1	2
Planning for a job	1	0	0	0	1
Assistance in finding a job	1	1	0	0	1
Physical or occupational therapy	0	0	1	0	7
Other types of assistance	1	0	0	1	8

[a] Based on a random sample of households in Minnesota only.

[b] Includes agencies such as University Hospitals, Gillette Hospital, local and city hospitals.

Note: Figures do not add up to 100% due to the rounding off of percentages and because some handicapped persons received more than one type of assistance from a particular agency.

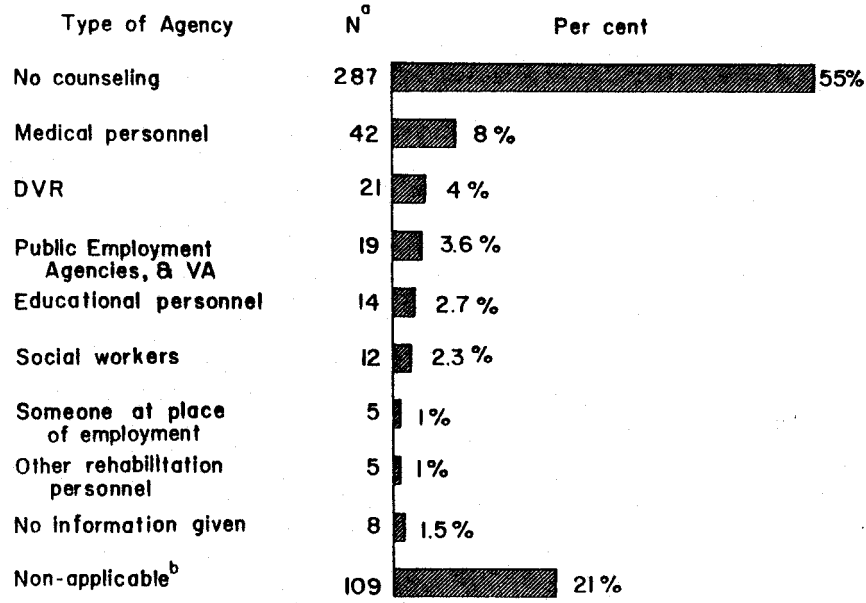
The percentages of handicapped persons receiving a particular type of service from a particular agency should be interpreted with caution since the sample frequencies on which the percentages are based are relatively small. Much greater confidence can be placed in the percentages dealing with the "no assistance received" category because the corresponding sample frequencies are much larger. It should also be noted that the data in Table 4 are based upon the *recollections* of the interviewees and *not* on agency records.

Figure 4 presents the percentage of handicapped persons who talked with a counselor about the best kind of work for them. It also shows the persons or agencies with whom handicapped persons discussed this subject. It should be noted that the questionnaire did not specify talking with a *professional* counselor. Also, the term *vocational counseling* was not used in the questionnaire since the question was designed to determine all sources from which handicapped persons have received any information about the best kind of work for them.

Figure 4 shows that 55% of the handicapped individuals have not received counseling about the best work for them. This amounts to about 159,000 non-institutionalized handicapped persons.

Figure 4

Percentage distribution of handicapped persons who have received counseling from agencies or counselors about the best kind of work for them



[a] One person listed two types of agencies.

[b] Includes children under 14 and housewives who have never entered the labor force.

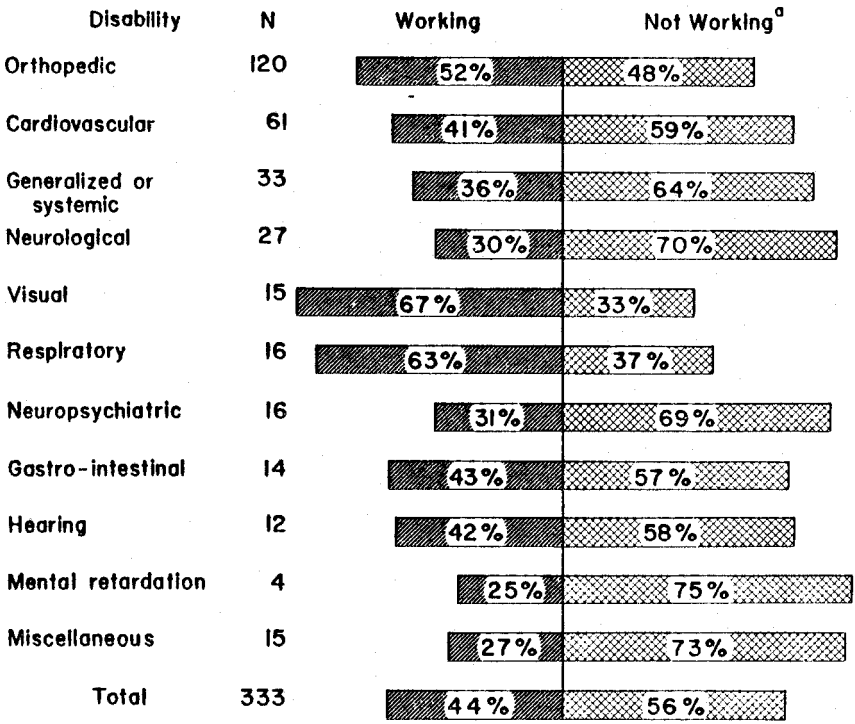
6. What is the current employment status of the handicapped population?[14]

Figure 5 presents the percentages of the handicapped who are employed and the percentage who are not working by type of disability. Fifty-six per cent of the handicapped persons between 14 and 64 are not working. This percentage drops to 32% of the handicapped persons between 14 and 64 if housewives and students who have never worked are excluded. Percentages for each disability category should be interpreted with caution since some of the sample frequencies from which the percentages were computed are relatively small.

[14] All data on employment characteristics of the handicapped were computed only on those handicapped persons between 14 and 64 years of age, this being the labor force age group.

Figure 5

Percentage distribution of current employment status of handicapped persons of labor force age (14 to 64 years) by disability



[a] Includes 80 housewives and students who have never been employed.

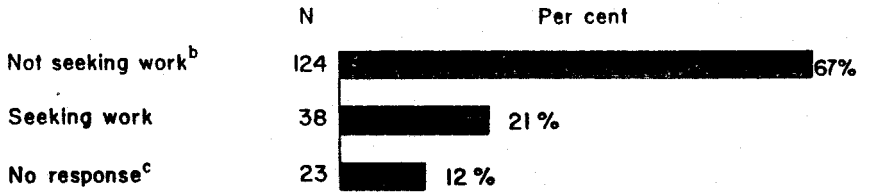
7. Do the unemployed handicapped persons want employment and feel that they could be employed?

This question is answered on the basis of whether or not the handicapped persons who are not working are seeking work.[15] It can be seen from Figure 6 that, of the handicapped who are not working, approximately 21% are seeking work while 67% are not. These percentages change to 30% and 52% respectively if housewives and students who have never worked are excluded.

[15] Of the handicapped who are not working, 12% gave no information as to whether or not they were seeking work.

Figure 6

Percentage of handicapped persons who are not working[a] but who are seeking work



[a] In the labor force age range, 14 to 64 years of age.
[b] Includes 57 housewives and students who have never worked
[c] All 23 are housewives and students who have never worked.

8. Have the unemployed handicapped persons been employed since becoming handicapped?

It can be seen from Figure 7 that, of the handicapped persons who are not working, approximately 33% have worked since becoming handicapped while 67% have not worked. These percentages change to 58% and 42% respectively if housewives and students who have never worked are excluded.

Figure 7

Percentage of presently unemployed handicapped persons[a] (N = 185) who have worked since injury or illness

[a] In the labor force age range, 14 to 64 years of age.
[b] Includes 80 housewives and students who have never worked.

Technical Appendix

Appendix A-1: Methodology for Household Survey

Questionnaire construction

An interview questionnaire for obtaining information on handicapped persons had been designed and used by the IRC staff in connection with its studies in vocational rehabilitation.[1] This questionnaire was modified to include new items of interest to this study, while irrelevant items were omitted. The format was changed to conform as closely as possible to that used by the Minnesota Poll so that its interviewers would be able to use the instrument.

Page one[2] of the questionnaire was designed to gather data describing the household and to identify any handicapped household members who were either living there at the time or who were institutionalized. Handicapped persons at home were identified by asking the following questions:

"Have any of these persons, including the children, ever had an illness, a physical condition, or a mental or emotional problem of any sort which limits the kind of work they can do, or the amount of work they can do?"

"Have any of these persons ever had an illness, a physical condition, or a mental or emotional problem that limits his ordinary activity in any way?"

These questions which were used to identify the physically handicapped in the population were selected as most effective on the basis of previous IRC research.[3] The interviewer was instructed to give no assistance other than a repetition of the question if the interviewee did not understand the questions. No further explanation was used.

If the answer to either of these questions was "yes," the interviewer went on to gather complete information on each handicapped person.[4] If the answer to both questions was "no," the interviewer asked a question to identify household members who were in institutions and then concluded the interview.

Instructions were prepared for the interviewers with detailed explanations on the use of the instrument. These included a general introduction to the survey and an item-by-item outline of the procedure for asking the questions and recording the answers.

Using the revised questionnaire and the set of instructions, four members of the staff conducted 60 interviews in four sections of Minneapolis which represented a wide variety of socio-economic classes. This pretest was used to estimate the effectiveness of the questionnaire and set of instructions, and to determine the adequacy of the information obtained. The data collected were subjected to a trial analysis to test coding and analysis procedures. On the basis of this pretest, final revisions of the questionnaire and of the interviewer instructions were made.

Sample design and validation

This survey utilized the sample of urban and rural area designations selected by the Research Department of the Minneapolis Star and Tribune for use in its Minnesota

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[1] *Minnesota Studies in Vocational Rehabilitation: V. Methodological Problems in Rehabilitation Research*, IRC Bulletin 25, December 1958.

[2] See Appendix C for a copy of the household survey questionnaire.

[3] *Minnesota Studies in Vocational Rehabilitation: V. Methodological Problems in Rehabilitation Research*, IRC Bulletin 25, December 1958.

[4] See Appendix C-1.

Poll surveys. Four times the usual number of Minnesota Poll interviews were conducted in each interviewing area. This insured a large enough sample to permit accurate estimation of total population figures. This sample yielded a 0.26 per cent sample of the total universe of households in the state.

In developing the original Minnesota Poll sample, the Research Department of the Minneapolis Star and Tribune used a form of probability sampling in selecting the urban interview points. It specified the census tracts, blocks and "nth" households in which interviews were to be obtained. These urban points were cities, towns, and municipalities of 2,500 population or more.

In the rural assignments—towns and villages of less than 2,500 population, rural non-farm homes and rural farm homes—a controlled-area quota sampling plan using socio-economic status as a cross-section control was utilized.

The interviewing areas were selected by first listing the counties in geographical order by congressional districts. Each county's population was broken down into an urban and a rural total using the 1956 Sales Management Survey of Buying Power as a basic reference.[5] To balance the cross-section by geographic location and urban-rural designation the population figures were cumulated in the following order:

Congressional District A—rural county segments
urban county segments

Congressional District B—urban county segments
rural county segments (order reversed)

Entering this list with a random starting number and an interval equal to 1/65 of the population, 65 county segments, urban and rural, were picked from this stratification.

Minneapolis, St. Paul, and Duluth were each divided into the required number of interviewing areas consisting of compact clusters of census tracts having approximately the same number of households. Four blocks were assigned per interviewing area to achieve dispersion. Blocks were selected at random with the chance of selection proportionate to the number of occupied dwelling units so that the more heavily populated blocks would have a greater chance of being included in the sample.[6] The same number of interviews was conducted within each block selected.

In the other urban communities, all blocks on a map of the city were numbered in a serpentine pattern. Then the sample blocks were picked with each block having an equal chance of being selected by use of a random number and interval. This sampling method has the obvious bias of tending to undersample the more heavily populated blocks in favor of less densely populated areas. However, there are administrative advantages to having an interviewer go to a designated block.

Each urban interviewer received a city map with the primary blocks outlined in red and secondary-A and secondary-B blocks outlined in blue. These secondary blocks were adjacent to the primary blocks and were to be used if it was impossible to obtain the required number of interviews from the primary blocks. Each urban interviewer

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[5] Reference used by Minnesota Poll: *Sales Management—the magazine of marketing*. Philadelphia, Pa.: Bill Brothers Publishing Corp., May 10, 1956.

[6] The statistical source used to draw the sample of blocks in Minneapolis was the January 1, 1955, estimates of the census tracts and the 1950 block statistics. In St. Paul the December, 1955 estimation of the St. Paul City Planning Commission and the 1950 block statistics were used. In Duluth the 1950 block statistics were also used.