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A comparison of the visual care attitudes of Forest Grove and McMinnville, Oregon

Abstract

A comparison of the visual care attitudes of Forest Grove and McMinnville, Oregon

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A STUDY PRESENTED TO THE
FACULTY OF THE COLLEGE OF OPTOMETRY
PACIFIC UNIVERSITY

A COMPARISON OF THE VISUAL CARE ATTITUDES
OF FOREST GROVE AND McMINNVILLE, OREGON

by

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Submitted in partial fulfillment of the requirement for
the Degree: Doctor of Optometry

Thesis Advisor

W. A. Baldwin

Thesis Chairman

Spring, 1969

A C K N O W L E D G M E N T S

We extend our appreciation to:

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Thesis Advisor
2. L.Z. Friedman, Practicing Optometrist
Chairman of Visual Care Attitudes
as Determined by a Survey Conducted
by the Oregon Optometric Association.
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TABLE OF CONTENTS

	<u>Page</u>
Introduction	1
Procedure	2
Format	3
Appendix	10

I N T R O D U C T I O N

The College of Optometry and its outpatient clinic were established at Pacific University in 1945. Since this time there has not been a study of the clinic's effect on the attitudes of the people in the surrounding community.

The purpose of the present study is to determine by means of a telephone survey sources of visual care in Forest Grove and a control community, McMinnville. Inferences will be drawn from this information concerning the impact of Pacific University's College of Optometry outpatient clinic on attitudes and practices of visual care in Forest Grove. Analysis of differences between males and females and between adults and children have also been made.

I. PROCEDURE

The telephone survey involved randomly selected samples in Forest Grove and McMinnville, Oregon, the control community. McMinnville was chosen on the basis of similar population, age range, and similar per capita income. Both Forest Grove and McMinnville are small college communities. The population of Forest Grove is approximately 6,900. The population of McMinnville is approximately 9,100. For each community the total number of listed names was determined and a one percent sample of telephone numbers was selected.

The communities differ in the following respects; distance to the nearest large town (population over 10,000), and presence of a medical eye specialist. Forest Grove is 25 miles from Portland and six miles from Hillsboro, the nearest community with ophthalmological services---two ophthalmologists have full-time practices there. There are fourteen physicians and three optometrists in the community. One of the physicians is licensed to administer the FAA flight physical and was considered by one responder to be an eye specialist rendering visual care services.

McMinnville is 39 miles from Portland and 27 miles from Salem. There are sixteen physicians in the community, one of whom is an ophthalmologist, and four optometrists. None of the respondents considered their local general practitioner as an eye specialist rendering visual care services. One family reported travelling to Salem for the services of

an ophthalmologist, but none had gone to Portland. The exception to non-local optometric service was one family who were recent members in the McMinnville community. They had obtained previous visual care in Portland. The above differences may have unaccountable influences on the comparisons.

II. FORMAT

Five specific areas were incorporated in this study:

- 1) Number of members in family
- 2) Time of last visual examination of each member
- 3) Frequency of examinations
- 4) Practitioner or institution rendering visual care
- 5) Time elapsed since last visual examination

A standard format of questioning was established in an attempt to avoid bias. Upon answering the 'phone, the woman of the house was requested. The results of this study support one of the assumptions which led us to seek information from the housewife; namely that she often determined the source and frequency of care for herself and other family members.

Calls were made between the hours of 10:00 a.m. and 4:00 p.m. on Tuesdays. When the phone was answered, the questioner initiated the conversation by:

"Good day... We are conducting a survey of the health care attitudes toward vision. This is not a solicitation and you may hang up any time you wish. The questions will take less than a minute. Would you care to answer?"

T A B L E A

ELAPSED TIME	MALES	FEMALES	M-FG	M-Mc	F-FG	F-Mc
6 months	24.3	37.3	30.9*	17.8*	42.8	31.8
1 year	36.9	26.3	27.3*	46.5*	27.2	25.3
2 years or less	17.3	14.6	12.7	21.5	12.8	16.5
5 years or less	8.0	13.4	5.4	10.7	11.5	15.4
10 years or less	3.6	7.3	7.3*	0 *	5.7	8.8
Never	9.9*	1.1*	16.4*	3.5*	0	2.2
<u>FREQUENCY</u>						
6 months	5.2	6.8	6.8	3.3	11.4*	2.2*
1 year	37.1	34.5	25.0*	49.2*	37.2	31.9
2 years or less	17.3	16.0	18.2	16.4	10.0*	22.0*
5 years or less	5.5	6.9	4.6	6.5	2.8*	11.0*
10 years or less	8.1*	0.7*	0 *	16.3*	1.4	0
No set period	26.8	35.1	45.4*	8.3*	37.2	32.9
<u>PRACTITIONER</u>						
Ophthalmologist	48.5*	33.3*	35.5*	61.5*	24.3	42.3
Optometrist	35.1*	58.1*	35.5	34.6	58.5	57.7
P.U. Clinic	7.7	8.6	15.5*	0 *	17.2*	0 *
Don't know	8.7*	0 *	13.5*	3.9*	0	0

Table A: The figures are representative percentages of the total males(M) and females(F), and comparisons of males and females in Forest Grove (FG) and McMinnville (Mc).

* Significant to the 5% level.

T A B L E B

ELAPSED TIME	UNDER 17	OVER 17	UNDER 17		OVER 17	
			FG	Mc	FG	Mc
6 months	17.6*	30.8*	23.7	11.4	36.9*	24.8*
1 year	31.0*	13.6*	37.5	24.5	27.1	35.9
2 years or less	4.9*	15.9*	1.3*	8.5*	12.8	19.0
5 years or less	19.8*	10.7*	0 *	39.7*	8.5	13.1
10 years or less	0 *	5.5*	0	0	6.5	4.4
Never	26.7*	5.5*	37.5*	15.9*	8.2	2.8
<u>FREQUENCY</u>						
6 months	3.6	5.9	7.3*	0 *	9.1	2.8
1 year	34.3	35.8	39.7	29.0	31.1	40.5
2 years or less	10.9	16.6	14.5	5.8	14.1	19.2
5 years or less	3.6	6.3	0 *	7.3*	3.7	8.8
10 years or less	0 *	4.5*	0	0	0.7*	8.2*
No set period	48.2	30.9	38.5	57.9	41.3*	20.5*
<u>PRACTITIONER</u>						
Ophthalmologist	18.4*	40.9*	10.3*	26.6*	29.9*	52.9*
Optometrist	57.3	46.6	41.2*	73.4*	47.0	46.7
P.U. Clinic	15.0	8.2	30.8*	0 *	16.4*	0 *
Don't know	8.5	4.3	17.7*	0 *	6.7*	2.0*

TABLE B: The figures are representative percentages of the total population of the two communities over and under the age of seventeen.

* Significant to the 5% level.

T A B L E C

ELAPSED	FG	Mc
6 months	32.5*	20.3*
1 year	30.7	32.2
2 years or less	8.9*	15.5*
5 years or less	5.6*	21.9*
10 years or less	4.4	2.9
Never	17.9*	7.2*
<u>FREQUENCY</u>		
6 months	9.0*	1.8*
1 year	34.1	36.7
2 years or less	14.5	14.7
5 years or less	2.6*	8.4*
10 years or less	0.7*	5.4*
No set period	39.1	33.0
<u>PRACTITIONER</u>		
Ophthalmologist	23.3*	43.5*
Optometrist	45.1	55.2
P.U. Clinic	21.2*	0 *
Don't know	10.4*	1.3*

TABLE C: The figures are representative percentages comparing the Forest Grove community with the McMinnville community.

* Significant to the 5% level.

III. DISCUSSION

Table A shows the following:

- a) More males in Forest Grove have had a visual examination within a six-month period.
- b) The above tendency is more marked when males under seventeen years of age are considered.
- c) The Forest Grove sample generally shows a tendency toward six-month periods since last visual examination.

The reasons for the above may lie in the fact that Pacific University has a recall system for a six-month period. This inference, however, is not supported by data in Table B, which indicates that the under 17 group and the females in Forest Grove attend the University clinic in greater incidence than do adult males.

Females may influence their family toward more frequent visual examination in the six-month period. The females and the under 17 age group of Forest Grove and the community of Forest Grove in general show a more frequent visual examination in the six-month period. This is probably related to the recall system previously mentioned.

An additional factor is the one discussed in the procedure, the housewife probably more often determines the sources of health care for the family. The mother goes to the clinic and it is apparent that the children go also. Thus, the six-month period of examinations for males holds. The male, however, possibly obtains the services of an outside practitioner because of the amount of time required to obtain clinic service.

In the community of Forest Grove males obtain visual care services less often than in McMinnville. This is also true of the under 17 age group in Forest Grove. Possible explanation for this is that males in general have less health care than females. In comparing the under 17 age group it is possible that Forest Grove has a larger segment

of the under 17 population who are younger than school age and the apparent need for visual care has never existed. As far as the total community is concerned, the data might indicate an apathy from knowing a visual care clinic is present and when the need arises, if it ever does, the services are handy. This tendency may also apply to the frequency. The male and the above 17 age group of Forest Grove have a greater tendency to have no regular schedule for visual examinations.

In comparing Forest Grove to McMinnville, Forest Grove may be considered to have two separate attitudes towards visual care -- those obtaining visual care on a very frequent basis and those obtaining visual care in no set period or not at all.

In comparing practitioners, it is noted that males tend to go to ophthalmologists more than do females. It is also shown that the over 17 age group receive care from ophthalmologists at an even higher rate. A factor that may be operating is that McMinnville population go to an ophthalmologist because of easy accessibility. In the case of females, their tendency is to seek the services of an optometrist. This is also true for the under 17 age group. Privately practicing optometrists serve the same proportion of population in both Forest Grove and McMinnville. Pacific University provides services for a higher percentage of the under 17 age group. This may be related to its child

oriented services - visual training and strabismus. A low percentage of the adult population attend the clinic, but those adults who do attend show similar frequencies of visits between males and females. Older (perhaps retired) adults attend the clinic, often husband and wife together.

IV. SUMMARY

It may be said that the females in McMinnville and the males in McMinnville entertain similar attitudes related to frequency and care, but obtain services from different practitioners; the females from optometrists and males from ophthalmologists. The females in Forest Grove do not have the same attitudes as the males, but when they seek visual care they do so from the same type of practitioner. The impact of the clinic has an indirect effect on the population of Forest Grove, but its services are not utilized in such a way as to indicate a significant and broad community impact.

A P P E N D I X

Absolute numbers were transformed into percentages. It is usual procedure to use raw frequencies to calculate chi-squared values. In 1939 in the Journal of the American Statistical Association (pp. 529-544) a nomograph was published which has the advantage that one does not need to use raw frequencies, but can instead determine the significance of the different proportions directly from the percentage figures. With the nomograph the percentages can be utilized directly since it takes into account respective sample sizes in establishing significant values. Nomographs should not be used when limits of significance are borderline, where sample sizes are very low, failure to consider a given value according to its place in the percentage range (i.e. only observing the magnitude of difference), and when one percentage is very small and the other is very large. For inspection purposes it must be kept in mind that a significance value is obtained and it is this value which has to be reached or exceeded in the following tabulated results if the difference is to be statistically significant at one of the customary levels of probability.

Chart 1: Determination of significant level to be obtained from the N values of the sample.

Chart 2: Determination of Significance to the 5% level from the percentage values.

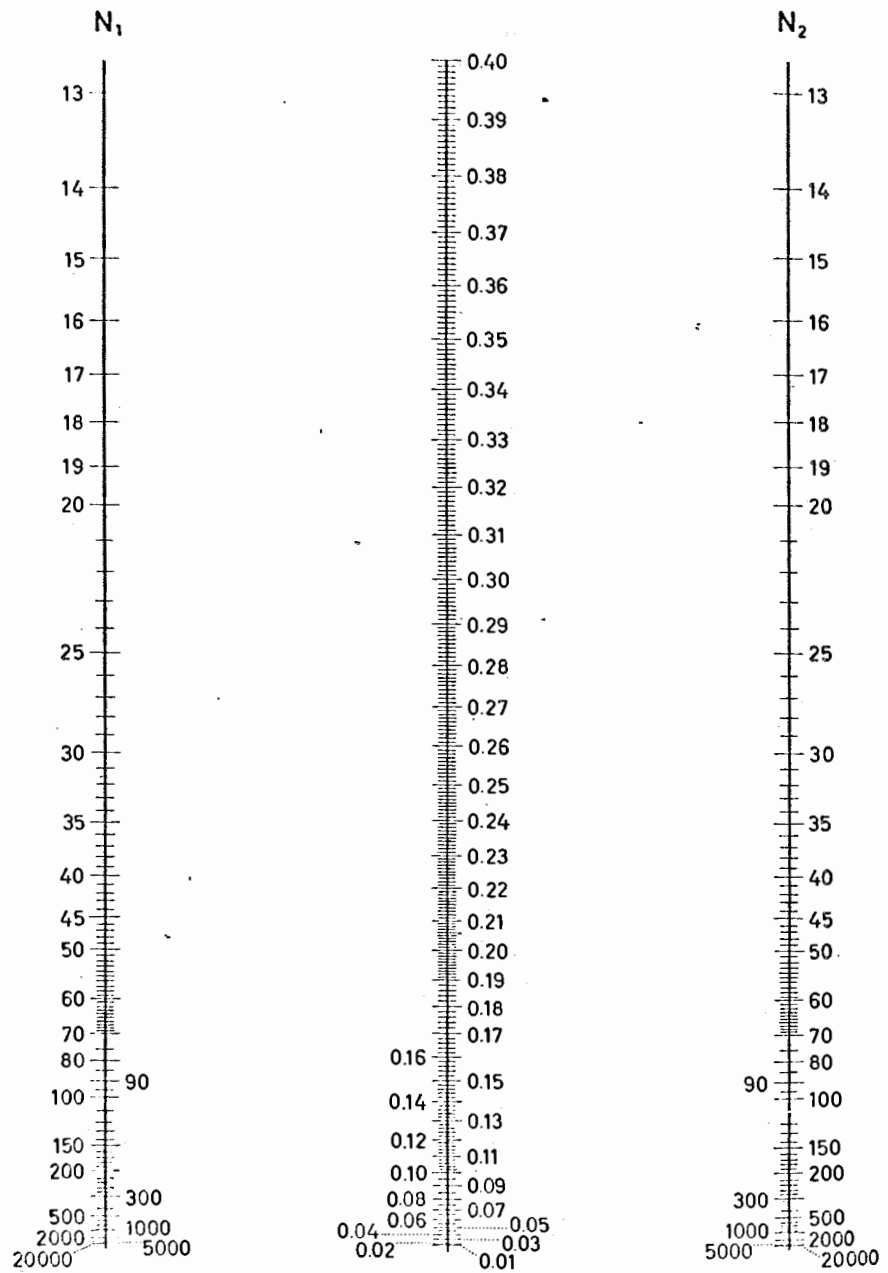


Chart 1

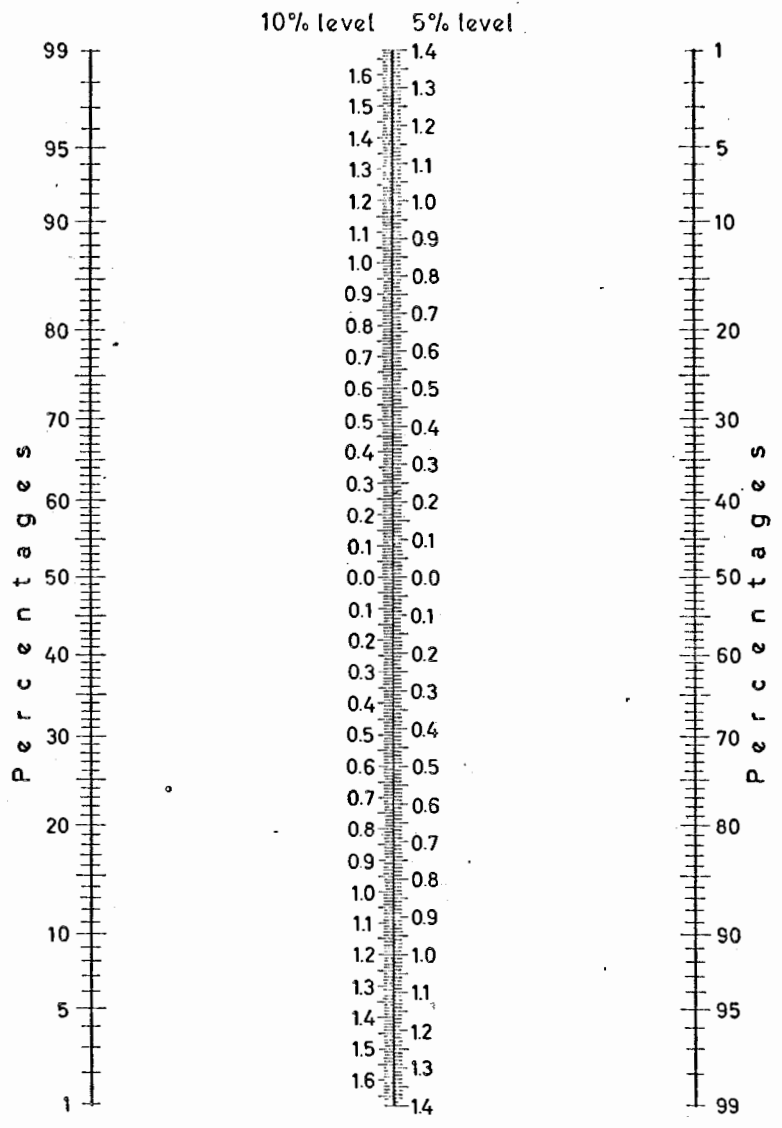


Chart 2

T A B L E 1

	TOTAL MALE-FEMALE	MALES FG - Mc	FEMALES FG - Mc
<u>TIME ELAPSED</u>			
6 months	.100	.206*	.120
1 year	.120	.210*	.029
2 years or less	.050	.118	.090
5 years or less	.080	.085	.050
10 years or less	.080	.355*	.050
Never	.230*	.210*	.080
<u>FREQUENCY</u>			
6 months	.040	.120	.210*
1 year	.025	.280*	.060
2 years or less	.020	.025	.120*
5 years or less	.020	.055	.160*
10 years or less	.170	.360*	.140
No set period	.085	.343*	.050
<u>PRACTITIONER</u>			
Ophthalmologist	.165*	.250*	.019
Optometrist	.205	.008	.010
P.U. Clinic	.020	.480*	.510*
Don't know	.400	.190*	0

TOTAL MALES AND FEMALES:Time elapsed values
 $N_1 = 111, N_2 = 161$

Significance = .124

*Significance level = 5%

Frequency and Practitioner values
 $N_1 = 100, N_2 = 159$

Significance = .127

*Significance level = 5%

MALES: FOREST GROVE AND McMINNVILLE:Time elapsed values
 $N_1 = 55, N_2 = 56$

Significance = .206

*Significance level = 5%

Frequency and Practitioner values
 $N_1 = 46, N_2 = 54$

Significance = .201

*Significance level = 5%

cont'd...

FEMALES: FOREST GROVE AND McMINNVILLETime Elapsed values $N_1 = 70, N_2 = 91$

Significance = .159

*Significance level = 5%

Frequency and Practitioner values $N_1 = 70, N_2 = 89$

Significance = .159

*Significance level = 5%

T A B L E 2

	UNDER 17 AND OVER 17	UNDER 17 FG - Mc	OVER 17 FG - Mc
<u>ELAPSED</u>			
6 months	.155*	.156	.135*
1 year	.210*	.150	.100
2 years or less	.190*	.190*	.020
5 years or less	.130*	.700*	.075
10 years or less	.350*	0	.085
Never	.310*	.250*	.120
<u>FREQUENCY</u>			
6 months	.050	.380*	.120
1 year	.080	.115	.105
2 years or less	.090	.150	.070
5 years or less	.050	.380*	.100
10 years or less	.320*	0	.190
No set period	.180	.208	.230*
<u>PRACTITIONER</u>			
Ophthalmologist	.260*	.240*	.245*
Optometrist	.100	.340*	0
P.U. Clinic	.115	.672*	.510*
Don't know	.120	.509*	.135*

Time elapsed values

Significance	.115	.190	.121
N ₁	111	59	125
N ₂	272	52	147
*Significance level	5%	5%	5%

Frequency and Practitioner values

Significance	.187	.223	.124
N ₁	32	37	115
N ₂	259	37	143
*Significance level	5%	5%	5%

T A B L E 3POPULATION -
FOREST GROVE - McMINNVILLE

<u>ELAPSED</u>	
6 months	.155*
1 year	.010
2 years or less	.105*
5 years or less	.245*
10 years or less	.025
Never	.175
<u>FREQUENCY</u>	
6 months	.175*
1 year	.035
2 years or less	0
5 years or less	.110*
10 years or less	.125*
No set period	.075
<u>PRACTITIONER</u>	
Ophthalmologist	.230*
Optometrist	.109
P.U. Clinic	.580*
Don't know	.225*

TOTAL - FOREST GROVE AND McMINNVILLETime elapsed values

Significance = .102

N₁ = 184N₂ = 199Frequency and Practitioner values

Significance = .110

N₁ = 151N₂ = 185

*Significance level = 5%

INSTRUCTIONS

- A. Speak to the woman of the house; if not home, speak to the husband.
- B. We are conducting a survey studying the health care attitudes toward vision.

QUESTIONS

- 1. How many member in your family?
 - a. over 17 years of age ()
 - b. under 17 years of age ()

- 2. When was the last time your eyes were examined?
 - a. When ()

if answer is uncertain lead to following:

 - a. 6 months ago ()
 - b. 1 year ago ()
 - c. within the last 2 years ()
 - d. less than 5 years ()
 - e. less than 10 years ()
 - f. never ()

- 3. How often do you have them examined? ()

- 4. Do you remember the practitioner's name who gave you this service?
 - a. yes ()
 - b. no ()

- 5. What is his name? ()
 - a. M.D. ()
 - b. O.D. ()
 - c. P.U. clinic ()

- 6. When was the last time the members of your family had their eyes examined?
 - a. spouse ()
 - b. children ()

- 7. How often do the members of your family have their eyes examined?
 - a. spouse ()
 - b. children ()
 - 1. ()
 - 2. ()
 - 3. ()
 - 4. ()
 - 5. ()

- 8. What is the name of the practitioner giving this service to each member of your family?
 - a. spouse ()
 - b. children ()
 - 1. ()
 - 2. ()
 - 3. ()
 - 4. ()
 - 5. ()