

EFFICACY OF AUDIOVISUALS ON HEARING LOSS: A FIELD STUDY

REG. NO. M9403


***AN INDEPENDENTS PROJECT WORK SUBMITTED IN PART
FULFILMENT FOR THE FIRST YEAR MASTERS DEGREE
IN SPEECH AND SEARING TO THE UNIVERSITY OF
MYSORE***

***ALL INDIA INSTITUTE OF SPEECH AND HEARING
MYSORE 570 006
INDIA
MAY 1995***

CERTIFICATE

This is to certify that the Independent project entitled *"EFFICACY OF AUDIOVISUALS ON HEARING LOSS-A FIELD STUDY"* has been prepared under my supervision and guidance.


Mysore
May 1995


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CERTIFICATE

This is to certify that the Independent project entitled *"EFFICACY OF AUDIOVISUALS ON HEARING LOSS - A HELD STUDY"*, is the bonafide work, done in part fulfilment for the First year of the Master's degree in Speech and Hearing of the student with Registration No.M 9403.

Mysore
May 1995



Dr. (Miss) S.Nikam,
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DECLARATION

I hereby declare that this Independent Project entitled " *EFFICACY OF AUDIOVISUALS ON HEARING LOSS - A HELD STUDY* " is a result of my own effort under the guidance of Dr. (Miss) S. Nikam, Professor and Head of the Dept. of Audiology at All India Institute of Speech and Hearing, Mysore and has not been submitted earlier at any University for any other Diploma or Degree.

Mysore
May 1995

Reg. No. M9403

ACKNOWLEDGEMENTS

My heartfelt gratitudes to prof. Dr.(Miss) S. Nikam, Professor and Head, Audiology for her unending support and guidance during the course of the project. Thanks a million Madam.

My sincere thanks to Dr. S. Nikam, Director, AIISH for allowing me to carry out this piece of work.

Mrs. Vanaja C.S & Mrs. Manjula P. - I don't find words to thank you enough for all the trouble you have taken to suggest me new ideas and guide my work on the right track.

Dr. Mohan Rao, Priya, Raksha, Aparna, Gokul and Jayakumar for translating my questionnaire into regional languages.

A token of thankfulness and gratitude to all my subjects at R.C.E, P.T.C, and A.I.I.S.H.

There are many people who are the first ones to help others but enjoy doing so away from the limelight.

Nirupama - Your silent prayers, love and perpetual support has been a great asset to me. I don't have words to thank you enough nor the vocabulary to bring into limelight your contribution to my life.

Gopi and Himanshu - Thanks for the much needed love, support and help that we share. Its the essence of student life !

Priya K. and Snehalata deserve a special token of my thankfulness for the support, help and care they have extended during my initial days in AIISH.

Sincere thanks to all my classmates.
Last but not the least -

MY SINCERE GRATITUDES TO MY MOTHER.
~Mama' - You have been a great friend, a mother, a father, a guide and a pillar of support in my life. I couldn't have been what I'm today but for your blessings and silent prayers.

I DEDICATE THIS PIECE OF WORK TO YOU.

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INTRODUCTION;-

The 20th century has seen **rapid progress in** industrialization along with modernization of the life style. With this rapidity of progress environmentalists are already concerned about the environmental pollution that is affecting the human beings in a multitude of dimensions. Noise pollution is one potential hazard that goes along in the continuum of pollutants. Apart from its unquestionable ill effects on the auditory system of the human, the noise also adversely affects the autonomic system, the mental status and the efficiency of individuals. The ambient noise level in many industries and public places are beyond the prescribed maxima. One sentence that aptly describes the whole scenario reads like this: "Hearing loss has become the number one health hazard of a non fatal nature in the industry and it needs an attention from all angles if we are to protect our hearing'.

This necessitates active public-professional partnership and sharing of information. One of the most efficient and time tested ways to achieve this has been "mass public education'.

Ear- which is a God given gift, like any other organ is

liable to damage from drug, trauma, disease and noise. Among these noise takes the major role. However, unfortunately very few people really take care to prevent exposure to hazardous noise levels.

NOISE is defined as unwanted sound with more or less random disturbances. (Robert & Young, 1957)

NOISE is a random frequency current or voltage signal extending over a considerable frequency spectrum and no useful purposes unless it is intentionally generated for test purposes. (Rutus & Turner, 1980)

One of the major hazardous nature of noise is that it can result in hearing loss. There is no doubt that hazardous noise conditions produce destruction of the auditory sensory cells and hair cells in the cochlea and that sufficient destruction of these elements will produce hearing loss. (Sataloff and Michael, 1973)

This type of hearing loss is called Noise Induced Hearing Loss (NIHL).

Hearing loss caused by continuous noise exposure is called occupational disease and the Hearing loss due to the instantaneous impact of noise is called occupational injury. (Newell, 1987).

Few other enemies of our hearing which as a part are ototoxicity, disease such as hypertension, diabetes, arteriosclerosis make the ears more vulnerable to damage from prolonged exposure to noise.

All these call for public awareness on a massive scale. Increased public awareness can have positive effects on the implementation and planning of Hearing conservation programmes. This can be achieved by selecting 'target groups' to which the orientation would be given. It is ideal to have target groups who usually come in contact with groups of people in their daily lives. Apart from these another potential target group is the actual subjects who are exposed to hazardous noise levels in their daily lives. Teachers, industrial supervisors, industrial workers make the potential target groups.

It is a common experience that audiovisual materials are more effecient than pure audio or pure visual materials. Several audiovisuals have been developed at AIISH for use in community awareness campaigns. They are either in the form of video capsules or slides with background audio playbacks.

The main aims of the present study are:

- (1) To evaluate the efficacy of the audiovisuals.

- (2) To find out whether the language level in the narrations are too complex or easily comprehended.
- (3) To check whether any modifications can be done to the existing materials to improve penetration power of the materials.
- (4) Based on the experience of the field study to suggest a set of recommendations which are to be used in further development of audiovisual materials.

The procedural aspects of this field study largely is based on a comparison of scores obtained (Pre and Post exposure) from certain target groups. Details of methodology is discussed somewhere else in this project report.

The need to study these audiovisuals become an important issue. Because before really putting these materials into use we should have a field trial. This in turn will give us the direction to its efficacy in penetrating the mass. In other words, the experimenter can find out, the lacunae in the audiovisuals and hence those can be modified according to the need.

For the purpose of this study the experimenter has selected two audiovisual materials:

(1) **Ear and Hearing, Part I : This is a capsule**

video programme explaining the structure and function of ear, hearing and various causes of hearing loss.

- (2) A **course** in noise pollution : A set of slides with pre-recorded audio cassette explaining the cause and effect of noise pollution and ways to control it.

STATISTICAL HYPOTHESIS;

- I. There is no significant difference between the pre exposure and post exposure scores of the target group.
- II. There is no significant difference between the scores obtained before exposure to audiovisuals and after exposure to audiovisuals.

METHODOLOGY

This piece of independent project aims at studying the efficacy of the audiovisuals developed in conveying message to the general public. To find out this a questionnaire was developed basing on the selected audiovisuals which is discussed elsewhere in this section. The efficacy of the audiovisuals were judged by comparing the pre exposure and post exposure scores on target groups. The two sets of scores were subjected to statistical analysis to find out significance of variance.

To get a better feedback on the audiovisuals the same methodology was carried out on 3 different groups. Group I was subjected to pre and post-exposure analysis where as the other two groups (II & III) were shown the audiovisual and a post exposure score was taken presuming that they didn't have any prior information about hearing and hearing loss.

Selection of subjects:

The subjects for the group I were selected basing on the following criteria:

1. All subjects should have good comprehension of spoken English.

2. The subjects should not be from science stream so as to eliminate bias of prior knowledge of Ear and Hearing.
3. They should have adequate sensory mechanism to perceive and register the message conveyed by the audiovisuals.

Keeping all the criteria in mind 40 subjects (both male and female) were selected for the purpose of the study .

Keeping all the above criteria in mind a second group (Group II) of 14 subjects were chosen.

Similarly, a third group comprising 6 persons without formal training in speech and hearing were selected.

Selection of audiovisuals:

Two independent projects were selected in which audiovisuals were developed for community awareness. One being a capsule video programme - "Ear & Hearing", the other a set of slides and an audio cassette - "A course in noise pollution".

"Ear & Hearing" depicts various aspects of ear and its anatomy, various common causes of hearing loss including noise pollution.

"A course on noise pollution" consists of a set of 35 slides and an audiocassette. It explains anatomical features of the inner ear and effect of noise on human being including various sources of noise, methods of measuring noise, methods of controlling noise pollution, auditory and non-auditory effects of noise.

The two audiovisuals were combined to form a single unit in which the videocassette formed the first part and slides the second part. This was done so as to give a better understanding of the ear, various causes of hearing loss and noise pollution as a particular message being one of the potential causes of hearing loss.

Development of questionnaire :

Before developing the questionnaire, the experimenter watched the audiovisuals and went through the texts. Following this a questionnaire was developed keeping the target population in mind. The questionnaire consisted of three sections.

Section I - Multiple choice type questions.

Section II - True/False type questions.

Section III - Opinion section in which the subjects are asked to indicate their impression on the

audiovisuals. e.g. quality of visuals, level of language, rate of narration, technicality of information etc.

The first page of the questionnaire had a section for personal data and a brief instruction for the subjects.

A sample of the questionnaire is given in the Appendix II of this project report.

Pilot trial of the Questionnaire;

The developed questionnaire was distributed to 10 judges who had formal training in Speech and Hearing. Their suggestions were taken and necessary ones were incorporated into the questionnaire.

COLLECTION OF DATA:

The data was collected in three steps for group-I.

i) Pre exposure score :

All the 40 subjects were seated in a well ventilated and lighted classroom. They were given a brief orientation about the purpose of this study and what is expected out of them. The experimenter then explained, how to fill in the questionnaire. Special emphasis was given on encouraging the subjects not to guess. Instead they were instructed to indicate-'I. DON'T KNOW in appropriate cases there by

eliminating/reducing the probability of false positives.

Following the brief orientation the questionnaire was distributed to each subject. They were given appropriate time to answer it.

Each subject was given an identity number (01 to 40) and the same number was printed on the corresponding questionnaire for the ease of comparative study with post-exposure data.

ii) Exposure to audiovisuals;

In a second session the two audiovisuals as described somewhere else in the methodology were played back to the same subject group. The distance of the screen and level of audio signal was adjusted according to the comfortable level of the subjects.

No additional explanation about the audiovisuals were given so as to prevent biasing.

iii) Obtaining post-exposure scores;

The questionnaires were distributed to the subjects after exposure to the audiovisual materials. These set of questionnaires were differentiated from the first set by marking 'Post' and writing the date on the top righthand corner. The identity

number of each student was also printed on the top of corresponding questionnaire. The subjects were given adequate time to answer the questions.

For groups II and III step (i) was not used. Step (ii) and step (iii) were carried on as described above..pa

RESULTS AND DISCUSSION

The results were analysed using suitable statistical procedure.

Scoring pattern:

The questionnaire items were scored in a binary system of correct or incorrect. Each correct answer gets 1 mark and each incorrect answer gets 0 mark. Items including "I don't know ' were also scored 0.

The same principle was applied to both pre and post exposure studies.

All the response figures were tabulated in a continuation form for further statistical analysis. Two separate tabulations were made for pre and post exposure scores. The scores were on Y- axis and the subjects were on X-axis.

Statistical analysis:

To find out the significance of variance among the two samples (pre and post exposure) Z-test of significance was applied to the data and conclusions obtained.

Furthermore, the pre and post exposure scores were analyzed and presented in the form of descriptive statistics.

GRODP I :

The individual pre and post exposure scores were tabulated and Z-test was administered to analyze the data.

Statistical analysis of data revealed a mean pre exposure score of 7.725 with a standard deviation (σ) of 3.271. A mean score of 23.975 was obtained for the post exposure survey with a standard deviation (σ) of 5.922. (Fig. 1a)

Analysis of significance of difference using Z-test revealed a Z-value of 15.729 which clearly showed a significant difference between the pre and post exposure mean scores at 0.01 level of significance, (i.e. $p \leq 0.01$). In other words, the ratio of the actual observed difference of means to the standard error of the data was highly

significant ruling out the difference owing to chance factors.

All the data are presented in the form of multiple bar-diagrams, where the backward slash represents the pre exposure scores and the forward slash represents the post exposure score. (Fig 2 - 7)

GROUP II:

Statistical analysis of POST EXPOSURE SCORE revealed a mean score (\bar{X}) of 30.928 with a standard deviation (σ) of 3.497.

GROUP III:

POST EXPOSURE ANALYSIS of group III scores showed a mean score of 33.8 with a standard deviation of 4.764.

Furthermore, when Z-test was applied to see the significance of difference between pre and post exposure score obtained from individual items (questions)*, it was found that there was a significant difference between the mean of individual items at $P \leq .01$. However, this significance was a group trend. When each item from the post exposure scores was analysed, there was a clear trend for

* Here the term individual item refers to the total score obtained for each question i.e. out of 40 subjects how many answered correctly question (item) no 1 per say.

some items to get high score and others low score. This revealed two groups of items. Eighteen items (questions) from the questionnaire fetched less than 50 % of total score. In other words, less than 50 % of subjects were able to answer those 18 questions correctly.

A subjective analysis of the low scoring items revealed that

- (1) All of them were technical questions.
- (2) They either focussed on finer anatomy, physiology or technical terminologies.
- (3) Most of such items when reanalysed from slide/video tape revealed an inadequate representation.
- (4) Either there was a complicated visual support e.g., a circuit diagram, an audiogram, neural pathways such as the auditory pathway; or the technical terms were not explained properly with lack of emphasis on the terms.

A comparative bar diagram showing the means of the low scoring (50 %) and the high scoring (50 %) items is shown in fig I b.

Analysis of the data obtained in the section III of the questionnaire is presented below in the form of descriptive statistics.

Thirty out of 60 subjects (i.e., 50%) reported that the

level of language used to explain the matter in the audiovisuals was easy to understand. Rest of the 30 subjects (50 %) felt it was difficult.

Twentyeight subjects (i.e., 46 %) suggested that the technical terms need further explanation. 18 subjects (30 %) indicated the need for additional visuals with the technical terms. Eleven subjects (18 %) opined that the technical terms used, need further explanation as well as supported by more visuals. However, only three of them (6 %) felt the terms were easily understood.

Thirtynine subjects (65 %) reported that the rate of speech of the narator was appropriate. Eighteen of them (i.e., 30 %) felt the rate was faster than normal whereas only 3 subjects (5 %) felt the rate was slow.

Thirtynine subjects (65 %) felt that the information given is appropriate. On the otherhand, 35 % of the subjects i.e., 21 of them felt the information given was too much and created confusion.

Eightythree percent of subjects (i.e., 50 in number) reported that the matter was clearly presented and there was no ambiguity. However, rest of of subjects (17 %) felt the matter was ambiguous.

A significant proportion of the subjects suggested methods for improvement of the audiovisual. Twenty four

methods for improvement of the audiovisual. Twenty four subjects recommended addition of more visuals whereas 22 subjects wanted use of simpler language while narrating. Eleven subjects recommended both of the above. Only one person wanted no addition and 2 subjects needed expansion of the text.

The descriptive statistics is presented herewith in the form of a comprehensive table. Where the upper case figures in each block indicate the number of subjects and the lower case figures show the corresponding percentage. Last block in each table shows general overall trend which is indicated by either '+' or '-'.

A trend with '+' indicates the parameter considered is acceptable to majority of subjects e.g., rate of speech (table III) - 66 % felt appropriate as compared to 30 % who felt it was faster.

A -ve trend refers to inability of a parameter to impress majority of subjects e.g., technical terms.

± indicates equivocality of response.

Number of pluses or minuses indicate the strength of trend or response.

SUMMARIZATION OF OPINIONS OBTAINED IN THE STUDY

LEVEL OF LANGUAGE	EASY	DIFFICULT	GENERAL TREND
	30 50%	30 50%	+

TECHNICAL TERMS	EASILY UNDER-STOOD	NEED FOR FURTHER EXPLANATION	NEED FOR MORE VISUALS	OVERALL TREND
	3 6%	28 46%	18 30%	11 18%

RATE OF SPEECH	SLOW	FAST	APPROPRIATE	OVERALL TREND
	03 04%	18 30%	39 66%	++

INFORMATION LOAD	TO MUCH & CONFUSING	APPROPRIATE	OVERALL TREND
	21 35%	39 65%	++

PRESENTATION OF MATTER	AMBIGUOUS	APPROPRIATE	OVERALL TREND
	10 17%	50 65%	...

	NO NEED FOR ADDITIONAL MATTER	EXPANSION OF THE TEXT	ADDITION OF MORE VISUALS	SIMPLER LANG WHILE NARRATING	GENERAL TREND
GENERAL COMMENTS AND SUGGESTIONS	01	02		22	
	02%	04%	39%	41%	
				11	
			14%		

DIAGRAM SHOWING THE MEAN PRE EXPOSURE

AND POST EXPOSURE SCORES:

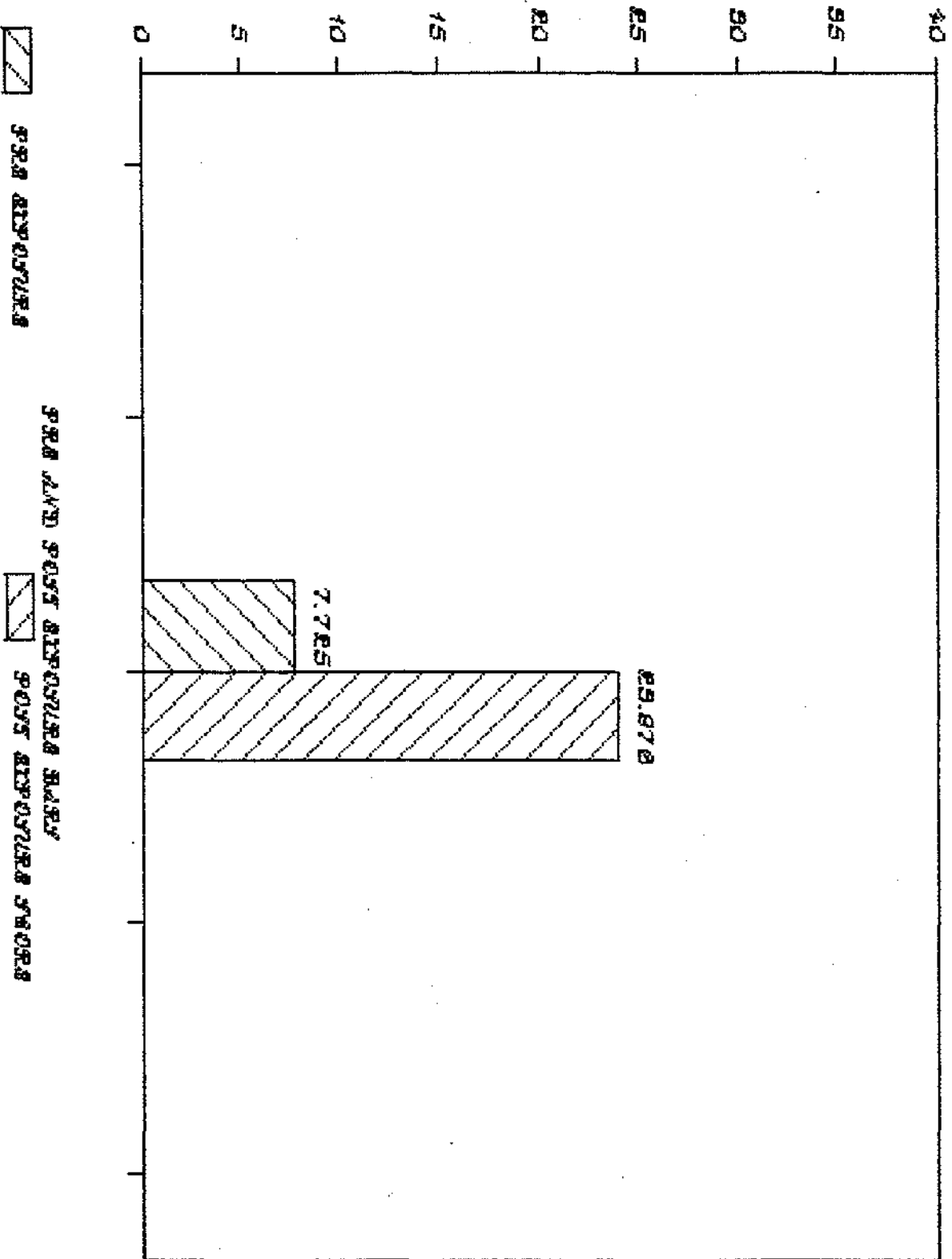


fig 3a

DIAGRAM SHOWING MEAN SCORES OF LOW AND HIGH SCORING ITEMS.

AND HIGH SCORING ITEMS.

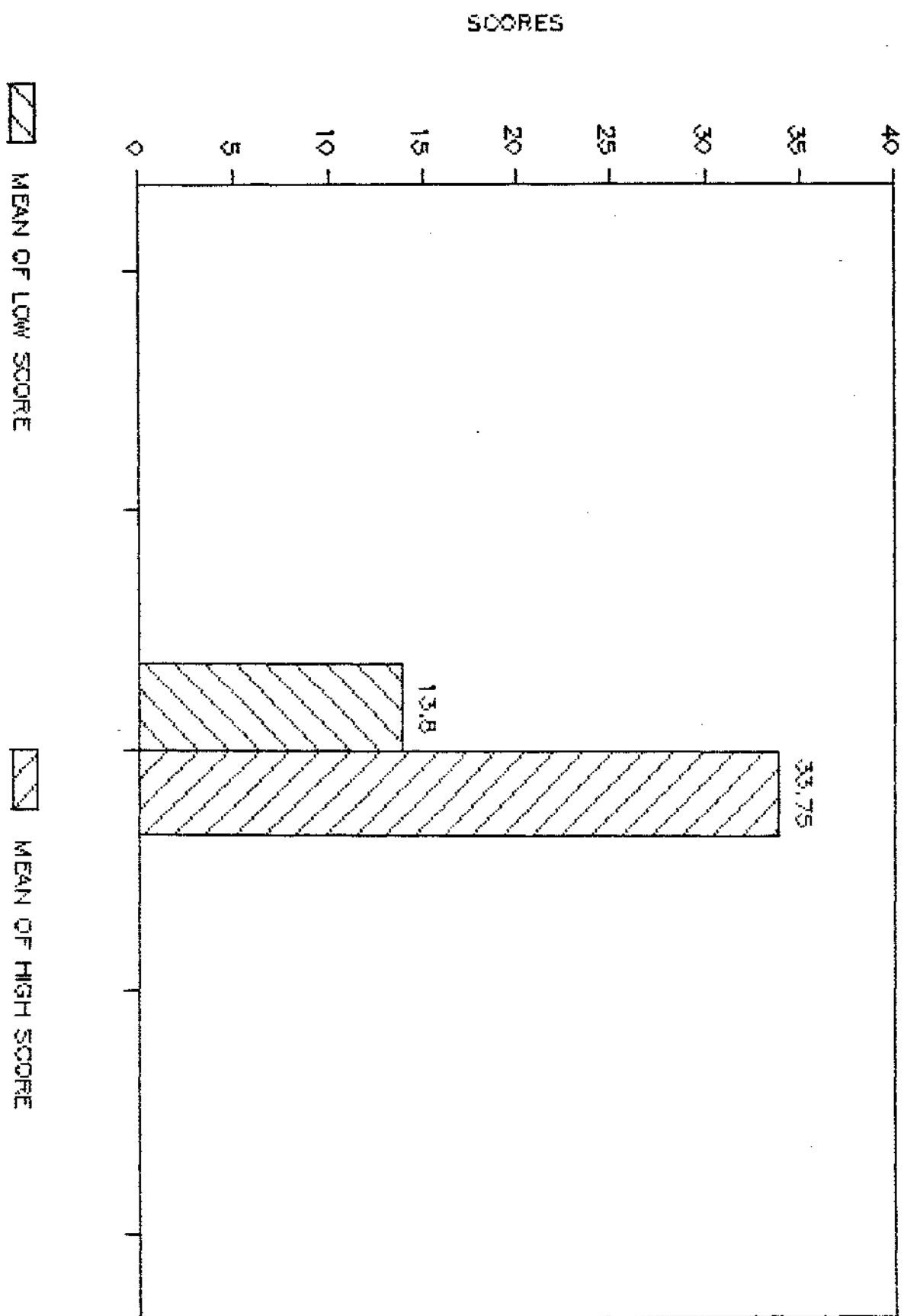


Fig 1b

DIAGRAM SHOWING INDIVIDUAL PRE AND POST EXPOSURE SCORES.

POST EXPOSURE SCORES.

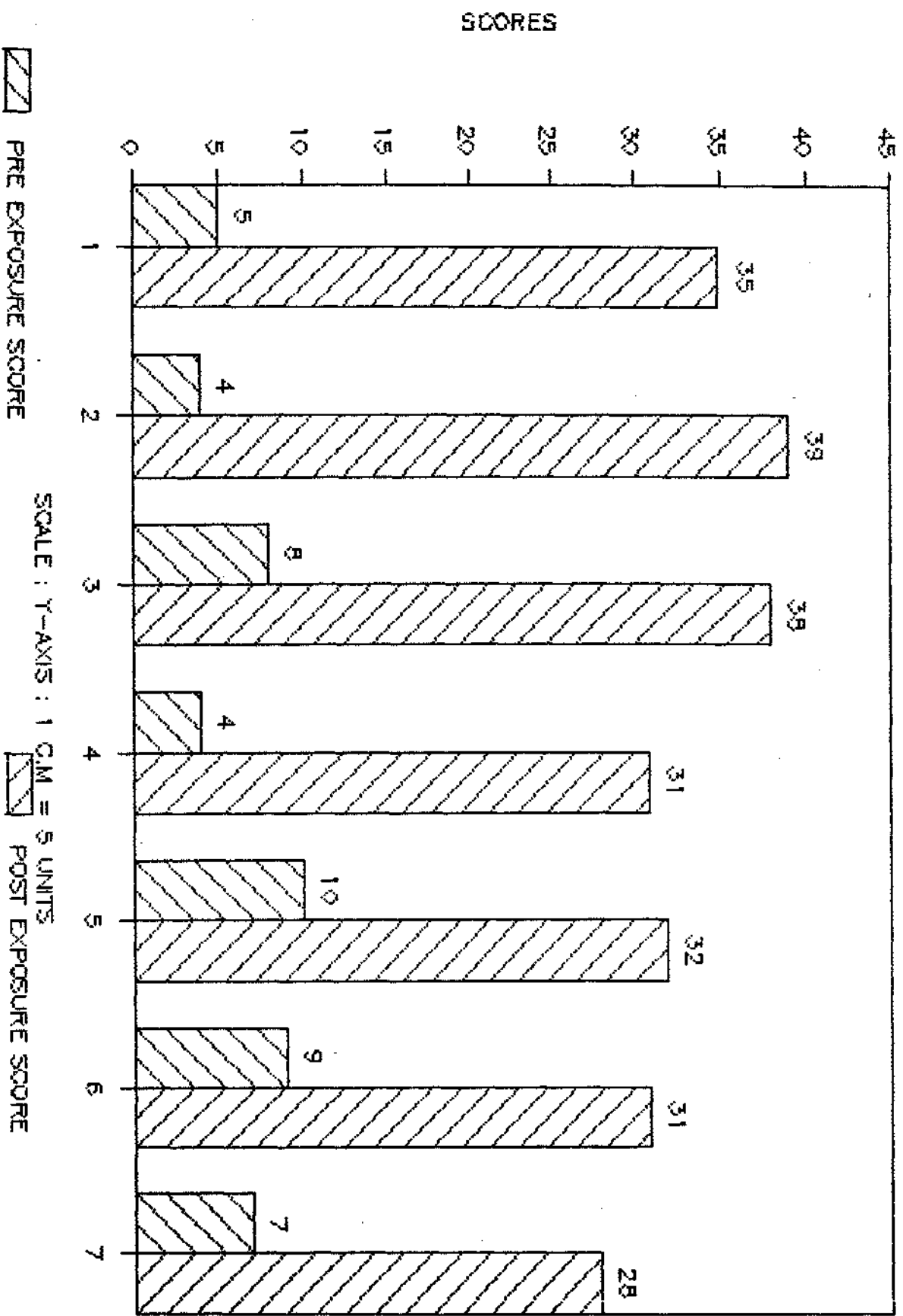


FIG 2

DIAGRAM SHOWING INDIVIDUAL PRE AND POST EXPOSURE SCORES.

POST EXPOSURE SCORES.

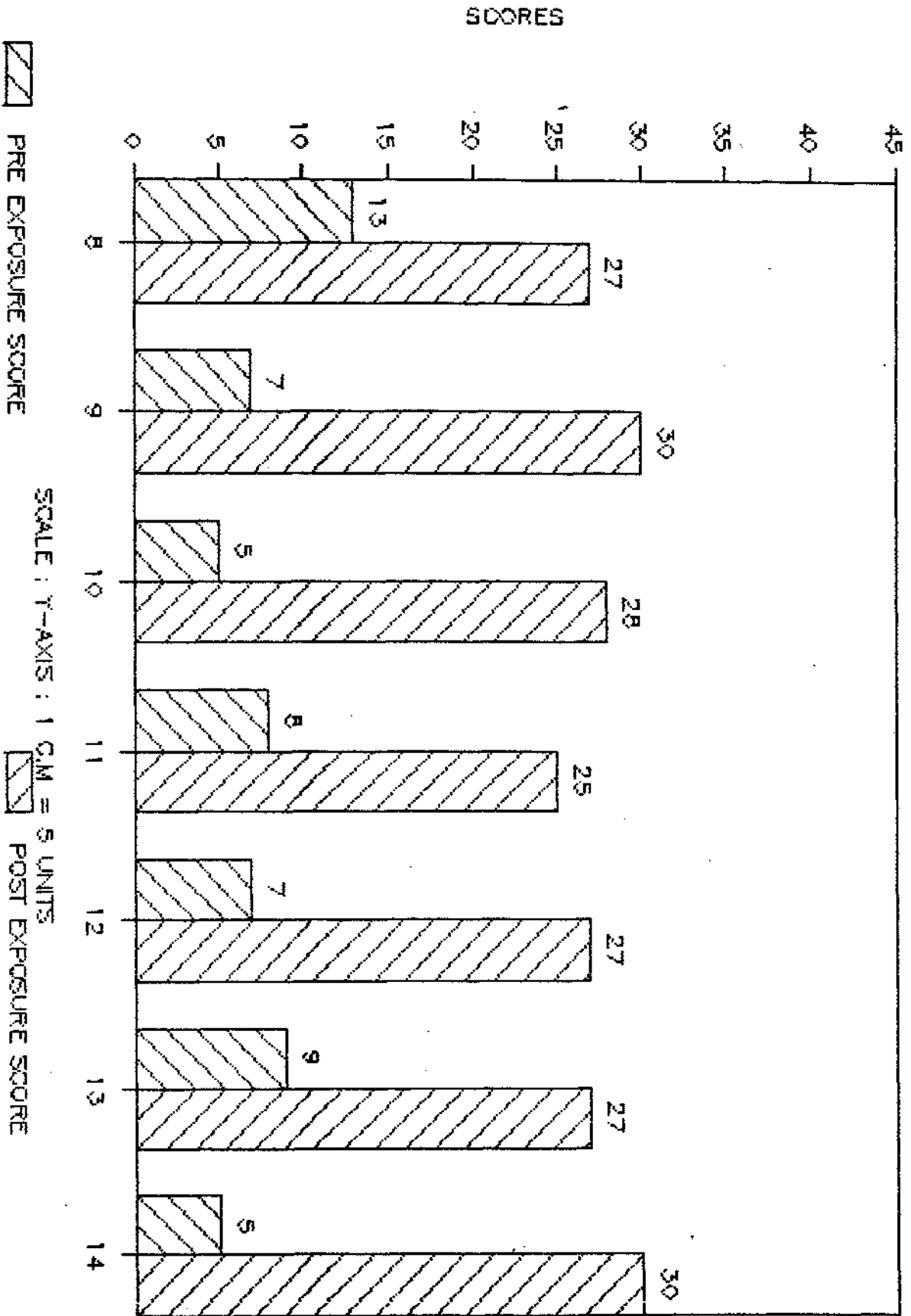


DIAGRAM SHOWING INDIVIDUAL PRE AND POST EXPOSURE SCORES.

POST EXPOSURE SCORES.

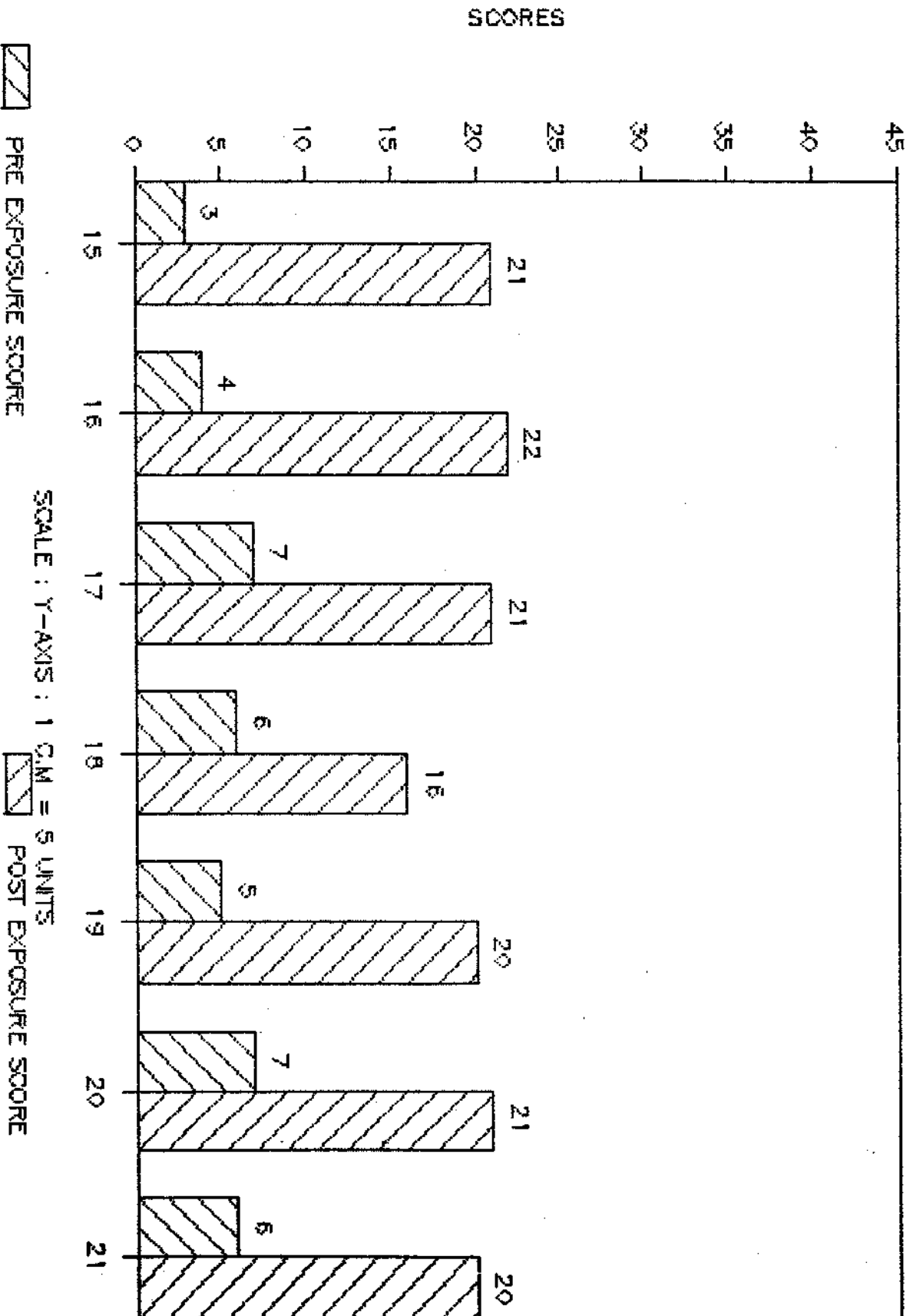
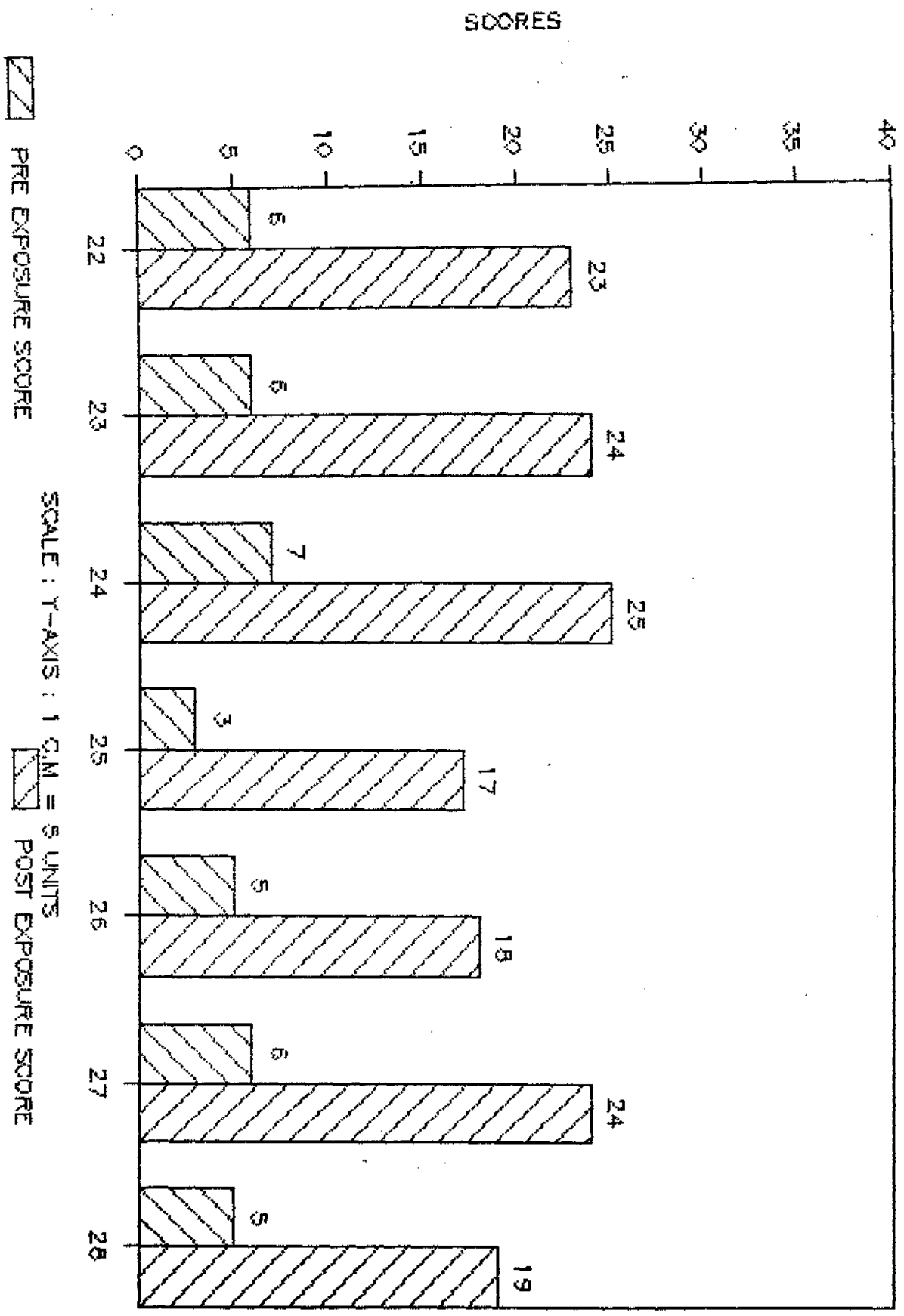


DIAGRAM SHOWING INDIVIDUAL PRE AND POST EXPOSURE SCORES.

POST EXPOSURE SCORES.



SCALE : Y-AXIS : 1 C.M = 5 UNITS

Fig 5

DIAGRAM SHOWING INDIVIDUAL PRE AND POST EXPOSURE SCORES.

POST EXPOSURE SCORES.

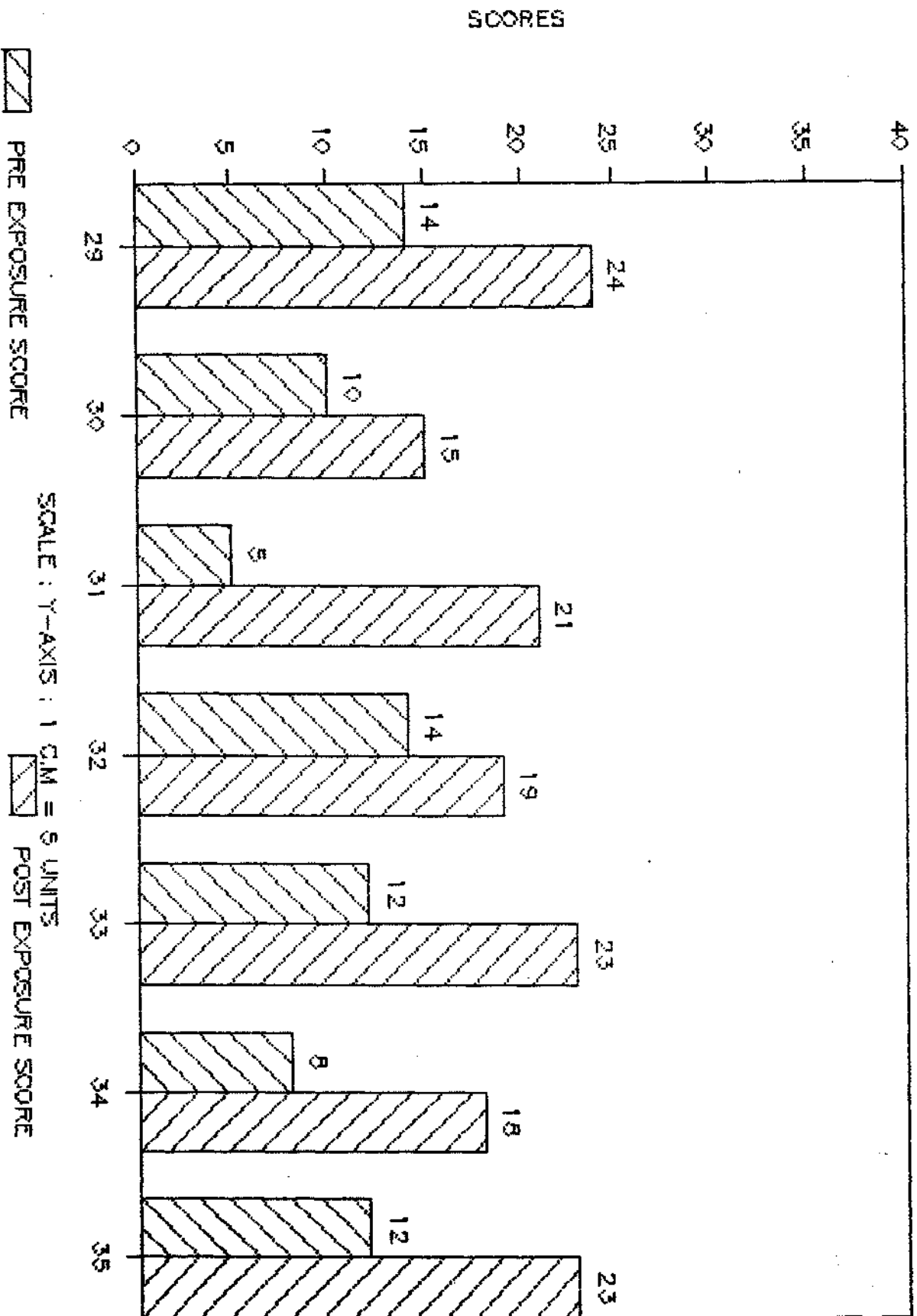


Fig 6

DIAGRAM SHOWING INDIVIDUAL PRE AND POST EXPOSURE SCORES.

POST EXPOSURE SCORES.

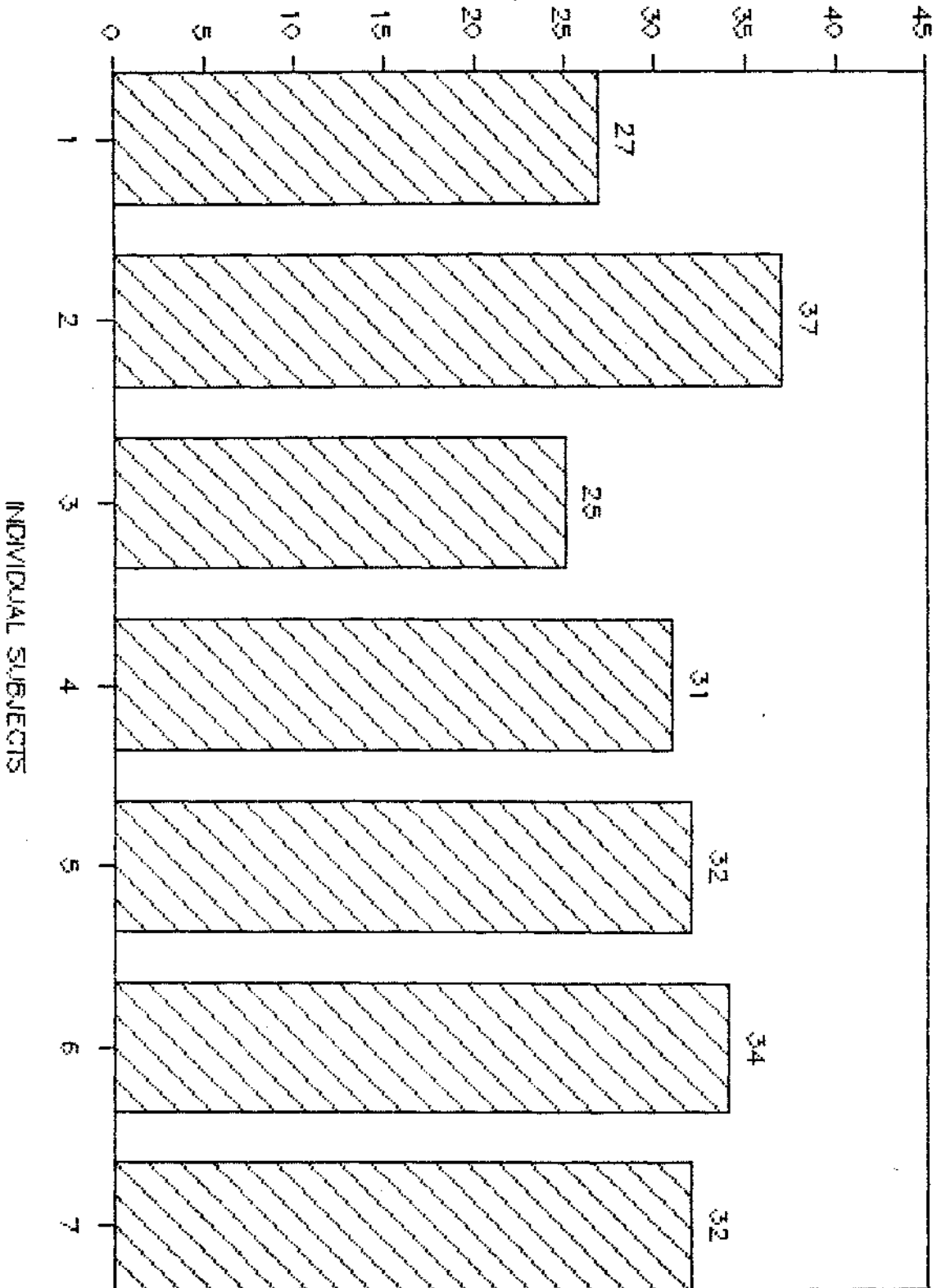


7 87

SCORES (NO. OF CORRECT ANSWERS)

DIAGRAM OF INDIVIDUAL POST EXPOSURE

SCORES OUT OF A MAX. SCORE OF 44.



Feb 82

DIAGRAM OF INDIVIDUAL POST EXPOSURE

SCORES OUT OF A MAX. SCORE OF 44.

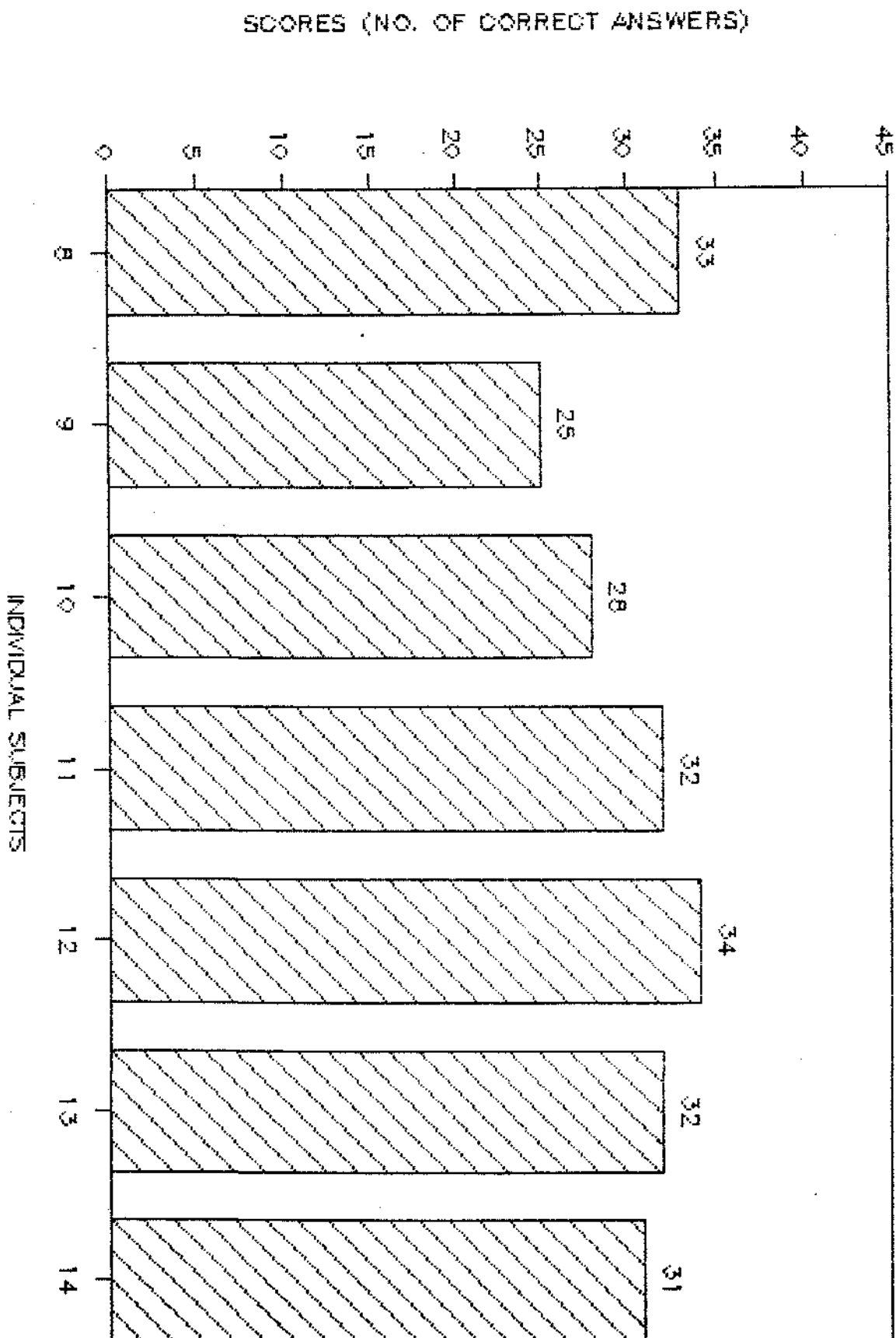


fig 8b

DIAGRAM SHOWING SCORES OF THE SUBJECTS

OF GROUP III

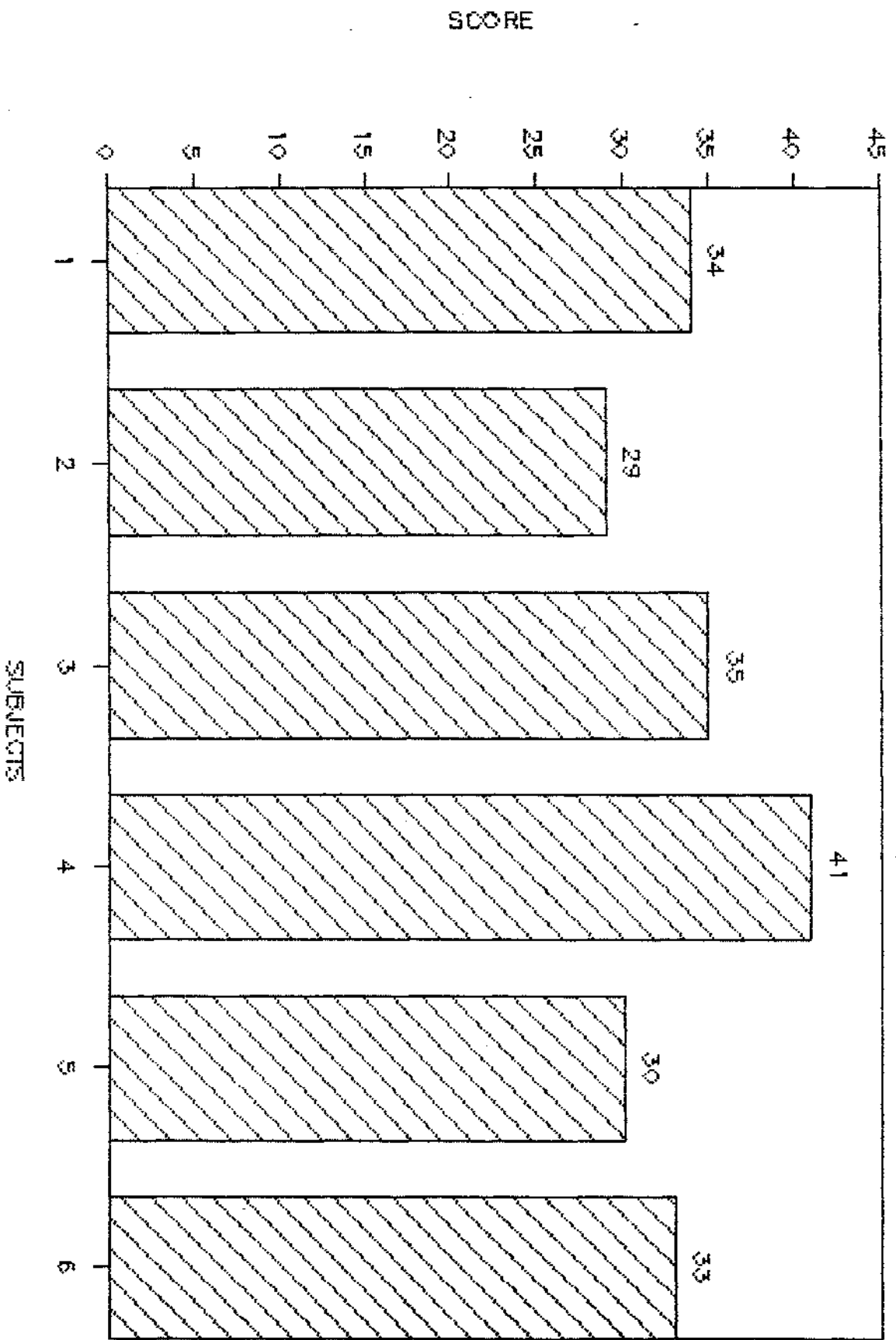


fig 1

CONCLUSION:

The outcome of the conducted field study clearly demonstrates efficacy of audiovisual materials in public awareness and education programmes. The two audiovisuals which were subjected to field trial under this study, were well accepted by the subjects. The subjective as well as statistical analysis of the post exposure data revealed that the subjects had gained a significant amount of knowledge on the audiovisuals (normal hearing and hearing loss due to exposure to noise).

However, most of the subjects opined few modifications in the materials to make it more presentable and easy to comprehend.

1. The technical terms should be supported by more visuals and explained in simple language.
2. The language level should be very simple while narrating.
3. The rate of speech should be appropriate with adequate pauses.

Basing on the above opinions and his own experience, during the field study the experimenter would like to suggest few 'rules of thumb' to be followed, while preparing audiovisual materials on hearing loss for the common people.

1. The audiovisuals should be attractive, short and

easy to understand.

2. Visuals should be preferably colourful (as opposed to black and white) and self explanatory.
3. Technical diagrams such as circuits, complex anatomical pathways etc. should be avoided as far as possible. Instead, block diagrams and flow charts should be used.
4. While preparing the audiovisuals, the 'target group' should always be kept in mind. Depending on their education, language, cultural background and general level of intelligence, the script and visuals should be presented.
5. The visuals should be presented in such a way that dubbing into other languages be possible.
6. Technical terms if any, should be explained with simple diagrams and narrations. Furthermore, if there terms", they must be used.
7. The level of language should be simple, and the sentences be preferably short with appropriate pauses.
8. While recording the voice for the audiovisuals a professional can be approached for help.
9. Video capsule programmes should be preferred to slides, because of the following reasons.
 - a) They are durable.

- b) They are easy to reproduce.
- c) The cassette need not be arranged everytime (as compared to slides).
- d) In one cassette a number of capsule programmes can be recorded.
- e) It is easy to disseminate information through video cassettes.

10. The information load of the material should be as less as possible. It should clearly convey the messages which one wishes to convey to his target group•

11. After the completion of the whole capsule programmes a small amount of time should be spent for summarizing the message. This must clearly spell out what the group is expected to know.

12. Last but not the least, the prepared audiovisuals must be subjected to field trial and necessary modifications made before using them.

APPENDIX - I

PRE AND POST-EXPOSURES SCORES OF ALL THE SUBJECTS:

GROUP - I:

SL. No.	Pre	Post	SL. No	Pre	Post
1	05	35	21	06	20
2	04	39	22	06	23
3	08	38	23	06	24
4	04	31	24	07	25
5	10	32	25	03	17
6	09	31	26	05	18
7	07	28	27	06	24
8	13	27	28	05	19
9	07	30	29	14	24
10	05	28	30	10	15
11	08	25	31	05	21
12	07	27	32	14	19
13	09	27	33	12	17
14	05	30	34	08	18
15	03	21	35	12	23
16	04	22	36	08	19
17	07	21	37	16	28
18	06	16	38	11	19
19	05	20	39	11	19
20	07	21	40	11	18

GROOP - II:

Sl. No.	Post
1	27
2	37
3	25
4	31
5	32
6	34
7	32
8	33
9	25
10	28
11	32
12	34
13	32
14	31

GROUP - III:

Sl. No.	Post
1	34
2	29
3	35
4	41
5	30
6	34

APPENDIX - II

ALL INDIA INSTITUTE OF SPEECH AND HEARING

QUESTIONNAIRE FOR FIELD STUDY

Name :

FOR USE OF INVESTIGATOR
ONLY

Age :

Qualification :

A B DATE
POST POST

Occupation :

Dear friends,

Thank you very much for your participation and motivation in this field study for evaluation of efficacy of audiovisuals on hearing loss.

In this questionnaire you are asked a few questions on hearing loss. All that you have to do is to tick, (/) the correct answer from the given probables. Don't worry, in the first chance you might score low. But after that you will be shown two films related to the questions. In the second chance you can score better. Our aim is to see how effective were the audiovisuals in explaining various aspects of hearing loss to you.

CHOOSE THE CORECT ANSWER AND PUT A TICK (/) MARK ON IT;

1. All India Institute of Speech and Hearing is situated in

(a) Bombay (b) Mysore (c) **New** Delhi (d) Bhubaneswar

2. Our ear has _____ parts.

(a) 1 (b) 8 (c) 3 (d) I don't know.

3. The part of the ear that you can see is called
- (a) Pinna (b) Outer ear (c) Ear drum (d) I don't know.
4. The most important function of ear is_____.
- (a) Listening to music (b) to act as an alert mechanism for us round the clock (c) help in understanding what others say (d) I don't know.
5. When we speak, our ear helps us to _____.
- (a) Monitor the loudness of speech (b) think about what is to be spoken next (c) formulate more speech (d)I don't know.
- 6 . The role of pinna is_____.
- (a) to provide good look to the face.
 (b) to collect and direct sound waves into the ear.
 (c) both of the above.
 (d) I don't know.
7. Smallest bones in the body are found in the
-
- (a) fingers (b) mouth (c) nose (d) ear
 (e) I don't know.
8. _____part of the ear helps in reducing the intensity of very loud sounds.
- (a) External (b) middle (c) Inner (d) I don't know
9. Inner ear is also responsible for_____.
- (a) Balance of the body in the sapce (b) Reducing the loudness of sound (c) both the above (d) I don't KNOW
10. Removal of wax by sharp objects like hairpin,Pencil

- matchstick etc, might lead to_____.
- (a) Infection of the ear (b) Injury to the ear and pain
(c) All of these (d) I don't know
11. If somebody is slapped on the ears, it may lead to
- (a) bleeding from the ear (b) rupture of the eardrum
(c) hearing loss (d) I don't know
12. If one listens to continuous loud sounds such as music over a long period of time, he can develop
- (a) hearing loss (b) psychological problems (c) physiological problems (d) all of the above
(e) I don't know.
13. Swimming in a pond containing contaminated water can lead to_____.
- (a) ear infection (b) giddiness (c) vomiting
(d) I don't know
14. When one person is exposed to loud noise over a long period of time on a regular basis, we can see
-
- (a) damage to external ear (b) ear discharge (c) damage to inner ear (d) I don't know
15. Exposure to a sudden blast noise causes_____.
- (a) inner ear damage (b) rupture of the ear drum or dislocation of the ossicular chain (c) sleep disturbances
(d) I don't know
16. People working in a very noisy place are more prone to

- develop_____.
- (a) noise trauma (b) noise induced hearing loss
(c) noise intolerance (d) I don't know
17. The commonest type of disturbing noise in our environment are_____
- (a) traffic noise (b) industrial noise (c) people talking around (d) I don't know
18. _____ of the following groups is maximally exposed to noise pollution.
19. Presence of a loud noise affects our communication because of _____
- (a) disturbances (b) decreased ability to understand speech (c) distortion (d) I don't know
20. In the initial stages of hearing loss due to exposure to noise maximum hearing loss is noticed at _____
- (a) 1000 Hz (b) 200 Hz (c) 4000 Hz (d) I don't know
21. The reason for carrying out noise measurement at noisy places is :
22. Measurement of noise levels can be done by:
- (a) listening to noise (b) by use of sophisticated equipments (c) by comparing with another noise
(d) I don't know
23. Noise measurement needs_____ of loud noise for a long period, what can you expect ?
24. When a person is continuously exposed to loud noise for a long period, what can you expect ?
25. The ill effects of noise are mainly seen in the

26. Apart from hearing loss, exposure to loud noise can result in _____
27. The method (process) of restricting the dangerous noise levels from reaching the human ear is called _____
28. We can save the hearing of an industrial worker by providing _____
(a) hearing aids (b) cotton balls (c) hearing protection devices (d) I don't know
29. To save the hearing ability of an industrial worker we may use _____
(a) ear plugs (b) ear muffs (c) helmets combined with one of the above (d) any of the above
30. A programme planned to bring about noise control is called _____
(a) hearing conservation programme (b) noise reduction programme (c) rehabilitation programme (d) I don't know
31. In order to bring about an effective way of saving hearing ability of industrial workers we need _____
(a) to strengthen our laws (b) to reduce noise level
(c) teamwork of engineers, audiologists, management, trade union and work force (d) I don't know

SECTION - II

1. One should not listen to loud music continuously.
(a) True (b) false (c) I don't know
2. Loud sounding fire crackers don't effect our hearing.
(a) True (b) false (c) I don't know
3. As people grow old they often experience a decreased ability to hear.
(a) True (b) false (c) I don't know
4. Certain drugs (medicines) can lead to hearing loss,
(a) True (b) false (c) I don't know
5. The hearing loss due to exposure to loud noise can become bad to worse with time.
(a) True (b) false (c) I don't know
6. Presemce of loud noise affects our ease of communication,
(a) True (b) false (c) I don't know
7. It is essential to measure the level of noise in noisy environment.
(a) True (b) false (c) I don't know
8. Apart from damaging the ear noise can also affect physiological functions like heartrate, blood pressure, sleep etc.
(a) True (b) false (c) I don't know
9. A hearing conservation programme must be implemented systematically.
10. Noise induced hearing loss is curable
(a) True (b) false (c) I don't know
11. Noise induced hearing loss is contageous
(a) True (b) false (c) I don't know

12. Preventive steps can be taken to reduce incidence of noise induced hearing loss.

(a) True (b) false (c) I don't know

13. Are there any regulations/laws regarding control of environmental noise level ?

(a) True (b) false (c) I don't know

SECTION - III

This section consists of few questions pertaining to your impression and opinion regarding the audiovisuals.

1. The level of language used in the material is :

(a) easy to understand (b) difficult to understand

2. The technical terms used:

(a) need further explanation (b) are easily understood

(c) need to be supported by more visuals

3. The rate of speech of the narrator is :

(a) slow (b) fast (c) appropriate

4. The information given is too much which cause confusion and/or which is not useful

(a) Yes (b) No

5. The matter is not clearly presented and is ambiguous

(a) Yes (b) No

6. If additional information is required. Indicate in which of the following ways this could be presented

(a) no additional matter required

(b) expansion of the text

(c) addition of more visuals

(d) simpler language while narrating

7. Any other comments/suggestions :

SIGNATURE.

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