

A RANDOMISED CLINICAL TRIAL TO EVALUATE THE EFFICACY OF VARMAN THERAPY IN THE MANAGEMENT OF VISHADA WITH SPECIAL REFERENCE TO GENERALISED ANXIETY DISORDER

Priyanka Devatwal¹, Sonia Meend², Sunil Kumar Yadav³

1. Assistant Professor, Awasthi Ayurvedic Medical College and Hospital, Himachal Pradesh
2. Ph.D. Scholar, Department of Rachana Sharir, National Institute of Ayurveda, deemed to be University, Jaipur
3. Professor, Head of Department, Department of Rachana Sharir, National Institute of Ayurveda, deemed to be University, Jaipur

Corresponding Author: soniyal7you@gmail.com

<https://doi.org/10.46607/iamj03p8042024>

(Published Online: May 2024)

Open Access

© International Ayurvedic Medical Journal, India 2024

Article Received: 08/04/2024 - Peer Reviewed: 05/05/2024 - Accepted for Publication: 21/05/2024.



ABSTRACT

Vishada has not been described as an individual clinical disease in Ayurvedic treatises, but references to *Vishada* are scattered in the classics. Primary psychological conditions caused purely by manas *Doshas*, i.e., *Rajas* and *Tamas*, include *Kama*, *Krodha*, *Lobha*, *Moha*, *Baya*, *Irshya*, *Vishada* etc. *Vishada*, by its symptomatology, shows much more similarity to the symptoms of generalised anxiety disorder. *Varmam* refers to the vital point present all over the body. According to the siddha system of medicine, when pressure is given on these *Varmam* points under control for a specific time and duration, it cures several diseases.

MATERIAL AND METHOD: A randomised, open, standard, controlled, clinical, interventional trial on 30 human subjects. Patients were divided into two groups, one with *Varmam* therapy with *Ksheerabala Tailam* application and the other with only *Varmam* therapy. The total duration of treatment is 35 days. There are two follow-ups every 7th day. There are 28 *Varmam* points located in the region from the top of the head to the neck, of which 10 are used in the study to manage *Vishada*.

RESULTS—After assessing the parameters of assessment criteria after treatment and inter-group comparison, it revealed that there was a significant effect of therapy in the patients of *Vishada*, and group B had a better impact than group A, which includes the *Varmam* stimulation along with *Ksheerbala Tailam*.

CONCLUSION – *Varmam* therapy is effective in the management of *Vishada* w.s.r to Generalized anxiety disorder.

Key words: *Vishada*, *Marma*, *Marma therapy*, *Varmam* therapy

INTRODUCTION

In the modern era, people cannot concentrate on their health due to a hectic lifestyle, indulgence in unwholesome objects and stressful life. Due to this, many bodily and psychological disorders start developing in the body, like mental disturbance, restlessness, irritability, and mental disorders. *Rajas* and *Tamas* are two *Manasika Dosha* which, when vitiated, are responsible for all the *Manasika Vikara* like *Kama*, *Krodha*, *Lobha*, *Moha*, *Mana*, *Mada*, *Shoka*, *Chinta*, *Udvega*, *Bhaya*, *Harsha* etc. It is mentioned in the classics that *Manasika roga* are responsible for *Sharirika Roga* and vice versa as both affect each other and become responsible causes of each other.

Vishada has not been described as an individual clinical disease in Ayurvedic treatises, but references to *Vishada* are scattered in the classics. Primary psychological conditions caused purely by *Manas Doshas*, i.e., *Rajas* and *Tamas*, include *Kama*, *Krodha*, *Lobha*, *Moha*, *Bhaya*, *Irshya*, *Vishada*, etc. *Vishada's* symptomatology resembles much more the symptoms of generalised anxiety disorder.

Anxiety is a psychological state characterised by somatic, emotional, cognitive, and behavioural components. Anxiety disorders are a broad term covering several different forms of abnormal and pathological fear and anxiety. Generalised anxiety disorder is an anxiety disorder in which there is excessive, persistent, irrational and uncontrolled worry present for no apparent reason. It is associated with excessive worry, nausea, restlessness, insomnia, edgy, muscle tension, trouble concentrating, weakness, etc. Continuous use of modern medicine for the treatment of anxiety disorder requires long-term use of sedatives, hypnotics, etc. Drugs lead to addiction and cause side

effects also, like loss of memory and allergic reactions.

This type of side effect can be treated effectively via *Varmam* therapy. As it is non-invasive and cost-effective, it can also be given in the absence of *Aushadi*. *Varmam* refers to the vital point present all over the body. According to the siddha system of medicine, when pressure is given on these *Varmam* points under control for a specific time and duration, it cures several diseases. When pressure is given forcefully, it results in harmful effects or changes in the body. This is called *Varmam* therapy. Several stimulation methods are described in the *Siddha* system of medicine through which many ailments in the body can be cured.

Ksheerbala Tailam can cure 80 types of *Vata* disorder as per reference found in *Sahasrayogam*. It contains all *Ksheera*, *Bala* and *Tila Taila*, which also possesses all the qualities of pacifying *Vata*.

Aim And Objectives: -

To evaluate the efficacy of *Varmam* therapy in the management of *Vishada*.

□ To compare the clinical efficacy of *Varmam* therapy with or without *Ksheerbala Taila* application in managing *Vishada*.

Materials And Methods

The following materials and methods were used for conducting the present research.

project:

Study design:

It was a randomised, open, standard, controlled, clinical, interventional trial on human subjects.

Study population:

The study population was collected from indoor and outdoor patients of the P.G. Department of Sharir

Rachana at the National Institute of Ayurveda Hospital, Jaipur, SSBH Jaipur, and Satellite Hospital after obtaining informed consent from patients.

Sample size and selection criteria:

Thirty patients of *Vishada* (Generalised Anxiety Disorder) were registered, who fell in the following criteria of inclusion and did not belong to the exclusion criteria.

Inclusion Criteria:

- Patients with clinical findings suggestive of *Vishada* (Generalised Anxiety Disorder) will be the potential trial subjects.
- Patients in the age group of 18-60 years of either sex.
- The patient is willing to participate.
- Patients diagnosed with generalised anxiety disorder according to the Hamilton anxiety rating scale and having a total score of above 17 on the scale will be included.

Exclusion Criteria:

- Patients with uncontrolled diabetes mellitus, uncontrolled hypertension, and other systemic diseases.
- Patients suffering from organic brain diseases.
- Vishada* due to the direct physiological effect of a substance (e.g. drug abuse, medication) or a general medical condition (e.g. hyperthyroidism).
- Occurrence of *Vishada* (Generalised anxiety disorder) exclusively during a mood disorder, a psychotic disorder, or a pervasive development disorder.
- Patients having chronic diseases like encephalitis, meningitis, malignancies, chronic renal failure, etc. will be excluded.

Procedure –

There are 28 *Varmam* points located in the region from the top of the head to the neck, of which 10 are used in the study to manage *Vishada*.

- Patient suffering from alcohol addiction.
- The patient has a HAM-A score under 17.

Withdrawal Criteria

- Non compliance patient.
- The patient wants to withdraw from a clinical trial.
- During the trial, urgent treatment is required if any severe condition or profound adverse effect occurs.
- If the patient fails to adhere to the protocol requirements.

Work Plan:

Grouping: Patients will be randomly divided into two groups of 15 patients each.

Group A: *Varmam* stimulation twice a day.

Group B: *Varmam* stimulation and the *Ksheerabala Taila* application are made twice daily.

Dose: As per required

Duration of Therapy:

Varmam therapy will be employed based on the literary evidence of *Varmam* texts. The total duration of treatment is 35 days.

- Therapy period- maximum 21 days (no. of sitting depends upon patient relief, but the period will not extend beyond 35 days).
- Follow up 14 days in two intervals (on seven days intervals)
- Therapy protocol - one sitting timing (includes two times per day) for both groups -10 min.
A. In the first week, seven days of regular sittings
B. In the second week (next seven days), sitting on alternative days like 1st,3rd,5th etc.
C. In the remaining seven days in the third week, sitting on once every three days.

Table 1.1 shows different *Varma* with different locations, positions of fingers, and stimulation methods.

VARMAM	LOCATION	POSITION OF FINGERS	STIMULATION METHOD
<i>TILARtha KAALAM</i>	It is located between the two eyebrows and above the roof of the nose. It is a <i>padu Varmam</i> .	Place the pulp part of the fingers on the <i>Varmam</i> point in a downward direction.	Press and lift the <i>Varmam</i> point upward using 1/4 th mathirai pressure.
<i>PAALA VARMAM</i>	One finger below the <i>Kannada kalam</i> on the nose.	Use the pulp part of the middle finger and place it on the <i>Varmam</i> point to stimulate.	Use 1/4 th mathirai pressure and run it over the <i>Varmam</i> point 3 times in a clockwise and anticlockwise direction.
<i>PURVA KAALAM</i>	In the middle of the eyebrows	On both <i>Varmam</i> points, place the first interphalangeal joint of the thumb.	Apply three outward and three inward rotations simultaneously on both the <i>Varmam</i> points using 1/4 th <i>Mathirai</i> pressure.
<i>CHUNNAMBU KAALAM</i>	it mainly lies three fingers above the poigai kaalam.	Place the pulp part of the middle three fingers on both the <i>Varmam</i> points to stimulate it.	Apply three backward and three forward rotations using 1/4 mathirai pressure to simulate it.
<i>CHEVIKUTRI KAALAM</i>	It is mainly located behind the auricle of the external ear, where there is a pit on both sides. It is a <i>padu Varmam</i> .	Place the pulp part of the middle fingers on the <i>Varmam</i> points.	To stimulate the <i>Varmam</i> points, lift the fingers upwards and release gently three times using 1/4 mathirai pressure simultaneously on both sides.
<i>PATCHI VARMAM</i>	it is mainly located one and a half fingers above the thilartha kalam.	Use the pulp part of the middle three fingers to stimulate the <i>Varmam</i> point.	Apply sideward movements using the middle three fingers and 1/4 mathirai pressure on the <i>Varmam</i> point thrice.
<i>KONDAI KOLLI</i>	it is located on the vertex of the head, ten fingers above the thilartha kalam on the midline of the head	use the pulp part of the middle three fingers and place it on the <i>Varmam</i> point.	Apply sideward movement three times using 1/4 <i>Mathirai</i> pressure.
<i>PORCHAI KAALAM</i>	mainly located on one finger right and left of the pidari kalam	using the pulp part of the middle finger, place it on the <i>Varmam</i> point and support by the index and ring finger on both sides simultaneously with equal pressure	make an inverted “U” and apply pressure of 1/4 maathirai three times on the <i>Varmam</i> point
<i>OTTU VARMAM</i>	located in the lies below the chin.	Place the pulp part of the middle three fingers on the <i>Varmam</i> point for the stimulation.	Apply forward movement thrice using 1/4 maathirai pressure to stimulate the <i>Varmam</i> points.
<i>URAKKA KAALAM</i>	on both sides of the face inside the lower jaw	place the pulp part of the middle three fingers on the starting point of the mandible bone.	At the starting point of the mandible bone, drag the middle three fingers through the <i>Urakka Kalam</i> and end at the <i>Ottu Varmam</i> . Repeat this action three times, and in the third and last application, end it with a clockwise and an anticlockwise rotation at <i>Ottu Varmam</i> .

Criteria of assessment

- Assessment will be done on *Vishada's* symptoms as per the text of Ayurvedic and *Shrimad Bhagavad Gita*.
- Assessment will be done using the Hamilton Anxiety Rating Scale or HAM-A.

Statistical analysis –

All the results are calculated using SPSS version 20 (IBM SPSS Statistics Inc., Chicago, Illinois, USA), a Windows software program.

- Descriptive statistics included the computation of percentages, means and standard deviations. The

unpaired t-test (for quantitative data to compare two independent groups)

- The chi-square and Fisher exact tests were used for qualitative data whenever two or more groups were used to compare.
- A Wilcoxon matched pairs signed ranks test was used for non-parametric data, and results were obtained for each group.
- The Mann-Whitney Test is used to calculate the inter-group comparison.

The level of significance was set at $P \leq 0.05$.

CTRI Registration Number - CTRI/2020/03/024354

Observations And Results –

Table no. 1.2 Showing the effect of *Varman* therapy on the symptoms of *Vishada* (Wilcoxon matched pairs signed ranks test)

Variable	Mean		Mena differences	% Relief	SD	SE	P value
	BT	AT					
<i>Gaatrasada Group A</i>	.53	.27	0.26	49.05	0.45	0.11	0.04 (S)
<i>Gaatrasada Group B</i>	.73	.00	0.73	100	0.79	0.206	0.003 (HS)
<i>Vepathu Group A</i>	0.27	0.00	0.27	100	0.45	0.11	0.04 (S)
<i>Vepathu Group B</i>	0.4	0	0.4	100	0.63	0.16	0.02 (S)
<i>Romharsha Group A</i>	1.07	0.27	0.8	74.7	0.41	0.107	0.001 (HS)
<i>Romharsha Group B</i>	1	0.07	0.93	93	0.704	0.18	0.001 (HS)
<i>Paridashan Group A</i>	1.73	0.73	1	57.8	0.65	0.16	0.001 (HS)
<i>Na cha shak-nomi avasthatum Group A</i>	0.6	0.13	0.46	76.6	0.51	0.13	0.004 (HS)
<i>Na cha shak-nomi avasthatum Group B</i>	0.73	0	0.73	100	0.704	0.18	0.001 (HS)
<i>Mano bhraman Group A</i>	1.73	0.47	1.26	72.8	0.7	0.18	0.001 (HS)
<i>Mano bhraman Group B</i>	2.2	0.13	2.06	93.6	0.704	0.18	0.001 (HS)

<i>Anavasthita chittatvam Group A</i>	2.07	0.93	1.13	54.5	0.51	0.13	0.001 (HS)
<i>Anavasthita chittatvam Group B</i>	2.6	0.33	2.26	86.9	0.704	0.18	0.001 (HS)
<i>Dukhatawam Group A</i>	1.47	0.47	1	68.1	0.37	0.09	0.001 (HS)
<i>Dukhatawam Group B</i>	1.73	0.13	1.6	92.4	0.73	0.19	0.001 (HS)
<i>Avasada Group A</i>	1.47	1	0.46	31.2	0.64	0.16	0.01 (S)
<i>Avasada Group B</i>	1.8	0.33	1.46	81.1	0.51	0.13	0.001 (HS)
<i>Nidra vaishamyam Group A</i>	2.53	1.27	1.26	49.8	0.7	0.18	0.001 (HS)
<i>Nidra vaishamyam Group B</i>	2.27	0.2	2.06	90.7	0.79	0.206	0.001 (HS)
<i>Aatmano asahkta janmam Group A</i>	1.33	0.47	0.86	64.6	0.64	0.16	0.001 (HS)
<i>Aatmano asahkta janmam Group B</i>	1.2	0	1.2	100	0.77	0.2	0.001 (HS)
<i>Asiddhi bhayat apravritti Group A</i>	0.87	0.27	0.6	68.9	0.507	0.13	0.001 (HS)
<i>Asiddhi bhayat apravritti Group B</i>	1.13	0.13	1	88.49	0.65	0.16	0.001 (HS)
<i>Vishada Group A</i>	2.47	1	1.46	59.1	0.51	0.13	0.001 (HS)
<i>Vishada Group B</i>	2.53	0.47	2.06	81.4	1.22	0.31	0.001 (HS)
<i>Mukhashosha Group A</i>	0.93	0.4	0.53	56.9	0.51	0.13	0.001 (HS)
<i>Mukhashosha Group B</i>	1.13	0	1.13	100	0.51	0.13	0.001 (HS)
<i>Prasveda Group A</i>	1.2	0.33	0.86	71.6	0.35	0.09	0.001 (HS)
<i>Prasveda Group B</i>	1.07	0.07	1	93.4	0.53	0.13	0.001 (HS)
<i>Hridayrava Group A</i>	1.6	0.67	0.93	0.58	0.45	0.11	0.001 (HS)
<i>Hridayrava Group B</i>	1.67	0.13	1.53	91.6	0.51	0.13	0.001 (HS)
<i>Aruchi Group A</i>	1.87	0.87	1	53.4	0.53	0.13	0.001 (HS)
<i>Aruchi Group B</i>	1.8	0.13	1.66	92.2	0.72	0.18	0.001 (HS)

Shrama asahtva Group A	1.6	0.73	0.86	53.7	0.51	0.13	0.001 (HS)
Shrama asahtva Group B	1.87	0.2	1.66	88.7	0.61	0.15	0.001 (HS)

Table no. 1.3 Showing the effect of Varmam therapy on the Hamilton Anxiety Rating Scale(HAM-A scale) (Wilcoxon matched pairs signed ranks test)

HAM-A score

Variable	Mean		Mena differences	% relief	SD	SE	P value
HAM-A	BT	AT					
Group A	22.67	17.2	5.46	24.08	1.407	0.36	0.001 (HS)
Group B	22.8	15.53	7.26	31.84	1.58	0.408	0.001 (HS)

(HS: Highly significant

S: Significant

NS: Non-significant)

Intergroup comparison:

To assess the efficacy of the two therapies, an intergroup comparison was conducted, and the Mann—Whitney Test was used for statistical analysis.

Table no. 1.4 Inter-group comparison of group 1 and group2 for symptoms of Chittodvega (Mann-Whitney Test)

		Mean	Std. Deviation	Std. Error	Mean difference	% relief	P value
Gaatra sada	A	.27	.458	.118	0.26	96.2%	0.04 (S)
	B	.00	.000	.000			
Vepathu	A	.00	.000 ^a	.000		--	---
	B	.00	.000 ^a	.000			
Romharsha	A	.27	.458	.118	0.2	74.7	0.15
	B	.07	.258	.067			
Paridahan	A	.73	.458	.118	0.66	90.4	0.001 (HS)
	B	.07	.258	.067			
Na cha shak-nomi Avasthatum	A	.13	.352	.091	0.13	100	0.15
	B	.00	.000	.000			
Manobhrama	A	.47	.516	.133	0.33	70.2	0.04 (S)
	B	.13	.352	.091			
Anavasthitam	A	.93	.458	.118	0.6	64.5	0.002 (HS)
	B	.33	.488	.126			
Dukhatwan	A	.47	.516	.133	0.33	70.2	0.04 (S)
	B	.13	.352	.091			
Avasada	A	1.00	.378	.098	0.66	66	0.001 (HS)
	B	.33	.488	.126			

Nidra Vaishamya	A	1.27	.458	.118	1.06	83.4	0.001 (HS)
	B	.20	.414	.107			
Atmano	A	.47	.516	.133	0.46	97.8	0.002 (HS)

Ashakti Janmam	B	.00	.000	.000			
AsiddhiBhayat Apravritti	A	.27	.458	.118	0.13	56.5	0.37
	B	.13	.352	.091			
Vishada	A	1.00	.378	.098	0.53	53	0.003 (HS)
	B	.47	.516	.133			
Mukhsosha	A	.40	.507	.131	0.4	100	0.005 (HS)
	B	.00	.000	.000			
Prasveda	A	.33	.488	.126	0.26	78.7	0.07
	B	.07	.258	.067			
Hridadrava	A	.67	.488	.126	0.53	79.1	0.002 (HS)
	B	.13	.352	.091			
Aruchi	A	.87	.516	.133	0.73	83.9	0.001 (HS)
	B	.13	.352	.091			
Shrama Asahatva	A	.73	.594	.153	0.53	72.6	0.008 (HS)
	B	.20	.414	.107			

(HS: Highly significant

S: Significant

NS: Non-significant)

Table no. 1.5 Inter-group comparison of Group 1 and Group 2 for Hamilton Anxiety Rating Scale Score (Mann-Whitney Test)

	Groups	Mean	Std. Deviation	Std. Error	Mean difference	P value
HAM-A	A	17.20	1.373	.355	9.6	0.001 (HS)
	B	15.53	.990	.256		

(HS: Highly significant

S: Significant

NS: Non-significant)

DISCUSSION

According to the *Samprati* made on the reference available in the classics and based on *Dosha* and *Dushya* involved, it came to know that when a person with *Alpa Sattva* is exposed to any psychological trauma, it causes vitiation of *Rajas*, *Tamas* and *Vata*, *Kapha* which further leads to *Vaigunya* of *Manovaha Srotas* i.e *Avarana* of *Manovaha srotas* by *Tamas*. In *Sushruta Samhita*, *Acharya Dalhana* explained the *Vishada* as *Asiddhi*, which means *unable to get the desired thing or person*; *Bhayat*, which means *a feeling of fear from the known and unknown object*; *Sada* and *Apravritti*, which means *no interest and non-*

indulgence in work. Though *Vishada* is a *Manas Roga*, there are three types of *Chikitsa* present for *Manas Roga*, which are *Yukti vyapashraya Chikitsa*, *Daiva vyapashraya Chikitsa*, *Satwavajaya Chikitsa*. The symptoms that appear in *Vishada* resemble entirely the symptoms of modern disease generalised anxiety disorder, which is studied in detail in a present clinical study.

All 30 *Vishada* patients registered for the research trial were randomly divided and then assessed for subjective and clinical improvement after the individual therapy in each group. A healthy diet and lifestyle were suggested to all 30 patients.

After observing the results of the inter-group comparison revealed a significant effect of therapy in group B than in group A, which includes the *Varmam* stimulation and *Ksheerabala Tailam*. Most of the variables show substantial results in group B over group A. Variables like *Gatra sada*, *Na cha shaknomi avasthatum*, *Manobhrama*, *Anavasthitchitam*, *Dukhatwan*, *Avasada*, *Nidra vaishamya*, *Atmano ashakti janmam*, *Vishada*, *Mukhsosha*, *Hridayadra-va*, *Aruchi*, *Shrama Asahatva*, HAM-A SCALE Shows significant results.

Effect of Varmam therapy:

As in *Varmam*, the therapy described in the present study includes all the points above the clavicle, which are vital and more important than the rest of the points of the body because of their location. The head is the most essential part of the body, which regulates the body in different means. Brain and associated parts and significant vessels are present in this location. All the psychological disorders arise from here only, so giving pressure in the proper amount to stimulate the *Varmam* points present above the clavicle not only helps in curing disease but also increases confidence in the person and makes the person more comfortable than before to achieve the daily routine and task properly on his own.

Ksheerbala tailam is effective with *Varmam* stimulation because it has the property of pacifying vata wherever it is applied, regulates blood circulation properly due to stimulation, and helps increase concentration.

CONCLUSION

Vishada is correlated with generalised anxiety disorder instead of depression, and anxiety is the prior form; the patient feels anxiety first, and after that, the patient goes to depression. After the physical touch

and counselling, the patient gets comfortable, and half of his mental pressure is relieved only by touch. Among various psychological disorders described in Ayurveda, *Vishada* is the nearest term for Generalized Anxiety Disorder. *Rajas* and *tamas* with vitiation of *Vata* play an essential role in *Vishada*. As per the clinical study, *Ksheerbala tailam*, along with *Varmam therapy*, plays a much more influential role in treating *Vishada patients* due to its properties.

ACKNOWLEDGEMENT- We would like to acknowledge Prof. Sanjeev Sharma, VC NIA, for providing us with all the facilities for the trial. Also, thanks to the teachers at the National Institute of Ayurveda, as well as patients and friends who supported this trial.

REFERENCES

1. “*Charaka Samhita-Vidyotini*” Hindi, Commentary (vol.1 and 2) 21st edition 1995 by Pd.K.N. Shastri, Dr.G.N. Chaturvedi.
2. *Ashtanga Hridaya* with commentaries “*Sarvanga Sundara*” of Arunadutta and “*Ayurveda Rasayana*” of Hemadri, Chaukhambha Orientalia, Varanasi 2002.
3. Kaviraj Ambika Dutta Shastri, *Sushruta Samhita* with “*Ayurveda Tattva Sandipika*” commentary, Varanasi: Chaukhambha Sanskrit Sansthan, 1995, parts 1 and 2.
4. Bhaghel MS; Research in Ayurveda; 2nd Ed Jamnagar: Mridu Ayurveda Publications & Sales
5. Harrison’s Principles of Internal Medicine (vol 2) 18th edition, by Longo, Fauci, Kasper, Hauser, Jameson, Loscalzo Published by McGraw-Hill Medical.
6. Dr. T. Rajendran, Textbook of Varmam massage science, first edition 2017, Published by the International Research Institute of Verma Sciences Power Publications Kanyakumari.
7. Dr K.N. Raja Ram, Varmam points and plating methods based on life energy circulation in Varmam therapy first edition 2008, revised second edition 2017, published by the Centre for Varmam Medicine and Research Kanyakumari.

Source of Support: Nil

Conflict of Interest: None Declared

How to cite this URL: Priyanka Devatwal et al: A randomised clinical trial to evaluate the efficacy of varman therapy in the management of vishada with special reference to generalised anxiety disorder. International Ayurvedic Medical Journal {online} 2024 {cited May 2024} Available from: http://www.iamj.in/posts/images/upload/322_330.pdf