



AN OBSERVATIONAL STUDY ON EVALUATION OF VYADHI AND ITS CLASSIFICATION IN ROAD TRAFFIC ACCIDENT DISASTER AFFECTED POPULATION

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Abstract

Introduction: In June 2009, the WHO lunched the report on road safety which reaffirmed that injuries due to road traffic crashes are a global health and development problem. The rapid expansion of road transport has brought with it challenge of addressing adverse factors as the increase in road accidents. It involves high human suffering and monetary costs in terms of premature deaths, injuries, loss of productivity etc. most deaths and injuries due to road traffic accidents and it one of the Man-made Disaster.

Objective: To enlist the prevalent Vyadhi observed Under Road Traffic Accident (RTA) disaster in order to classify them under different Vyadhi vargikarana.

Materials and Methods: H.D Kote, Nanjangodu road near Kadakola and Pandavapura Village of Karnataka State were selected for the survey study for RTA. Places was visited and survey was conducted by using the special Case proforma through face-to-face interview.

Results: In RTA disaster, Śārīrīka, Śārīrīka – Mānasīka, Śākhāgata, Marmagata, Mṛdu, Dāruṇa, Dwandvaja, Sannipātaja, Sukha sādhyā & Kriccha sādhyā are highly significant with $p = .001$

Key Words: Disaster, Road Traffic Accident (RTA), Vyadhi Vargikarana

Introduction

According to NIDM defines, disasters are often described as a result of the combination, the exposure to the hazard, the condition of vulnerability that are present, insufficient capacity or measures to reduce or cope with potential negative consequences, disaster impacts may include injury, disease and other negative effect on human physical mental & social well-being together with damage to property, destruction of assets, loss of services, social & economic disruption & environmental degradation of, environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area”^[1]. In June 2009, the WHO lunched the report on road safety which reaffirmed that injuries due to road traffic crashes are a global health and development problem. The rapid expansion of road transport has brought with it challenge of addressing adverse factors as the increase in road accidents^[2]. It involves high human suffering and monetary costs in terms of premature deaths, injuries, loss of productivity etc. most deaths and injuries due to road traffic accidents and it one of the Man-made Disaster. Ayurveda believes that, A wise physician should examine the distinctive features of the disease beforehand and then treatment should be started only if the disease is curable^[3]. The disease is defined as a state in which both the body and mind are subject to pain and misery^[4]. it can be classified in Various types. Diseases are classified according to need of treatment, causative factor, prognosis etc. like, Śarīrā (Physical) - Mānasika (Mental)^[5], Nija (Endogenous disease)- Āgantuja (Exogenous disease)^[6], Sādhyā (Curable)- Asādhyā (Incurable)^[7] and so on. A wise physician with his Yukti can further classify the disease in many ways^[8]. It is noticeable that Ayurveda refers that the “Samprāpti Vighatana” is the Cikitsā, so, for Samprāpti Vighatana it is necessary to understand the Vyādhi and its classification in relation to diseases caused by disasters. There is lacuna of research in ayurveda for the management of diseases due to disaster so, the classification of Vyādhi is an essential for understanding of the disease due to disaster, and it is a prerequisite factor for management of such incidences. Hence, this work has been taken to analyse the Vyādhi and its classification in disaster affected people for the welfare of the society.

Objective: To enlist the prevalent Vyadhi observed Under Road Traffic Accident (RTA) disaster in order to classify them under different Vyadhi vargikarana.

Materials and Methods:

It is a Retrospective Observational Study which is a Collaboration work with Administrative Training Institute Mysore in which 100 subjects were selected for the evaluation of Vyādhi in RTA disaster affected people. H.D Kote (Handpost) - 20 People, Nanjangodu road near Kadakola – 60 people of Mysuru District and Pandavapura Village – 20 People of Mandya District of Karnataka State were selected for the survey study for RTA, was visited survey was conducted by using the special Case proforma through face-to-face interview. Statistical analysis was done by using Frequency, Percentage and Chi-square tests.

Results

What is already known on this subject

- No Information available regarding this subject.

What this study adds:

- Prevalent Vyadhi in RTA affected people.
- Provides classification of each observed vyadhi in order to plan the appropriate treatment modalities.

Criteria for the classification of Vyadhi:

The observed diseases have been subjected to information (Guidelines for Vyadhi Vargikarana) available in Ayurvedic lexicons in order to classify them under each classification.

Observations:

Demographic data

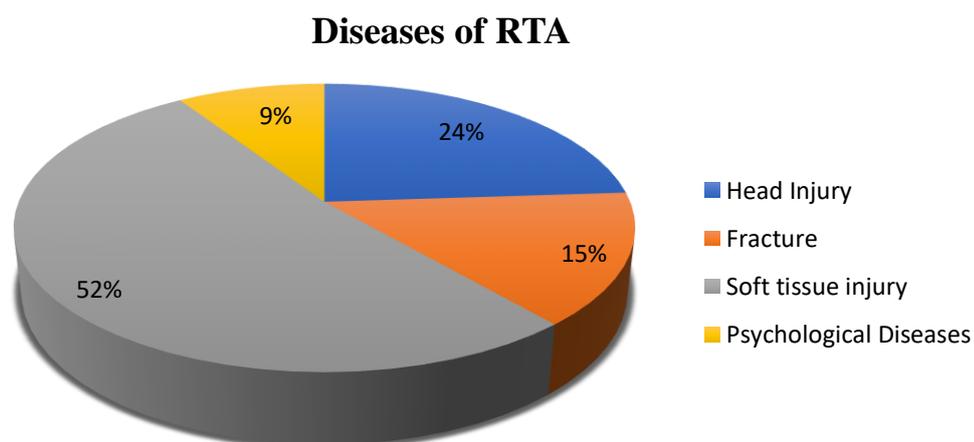
Among the 100 RTA affected people, maximum number i.e., 77.0 % were Male, and 23.0 % were Female. Maximum number of people i.e., 55.0 % belonged to the age group of 31 – 60 years, followed by the 33.0% belonged to the age group of below 30 years and 12.0% belonged to the age group of Above 60 years. Maximum number of people i.e., 52.0 % belonged to the Middle class and Minimum 48.0 % belonged to the lower class.

Vyadhi

It is found that among 100 RTA affected people, 12 (12.0 %), 25 (25.0 %), 23 (23.0 %), 15 (15.0 %) and 25 (25.0 %) were having Krōdha, Śōka, Cintā, Bhaya and Cittōdvēga respectively.

Among 100 RTA affected people, 34 (23.9 %), 21 (14.8 %), 74 (52.1 %) and 13 (9.2 %) were suffering from Head Injury, Fracture, Soft Tissue Injury and Psychological Diseases respectively.

Illustration – 1: Diseases found in RTA



Distribution of Diseases in relation with Socio Economical Status among RTA affected people:

Among 100 Chemical affected people, total 142 diseases were observed.

In Lower class, 15 (10.5 %), 14 (9.8 %), 39 (27.5 %) and 5 (3.5 %) people suffering from Head Injury, Fracture, Soft tissue injury and Psychological Diseases were observed respectively. In Middle class, 19 (13.4 %), 7 (4.9 %), 35 (24.6 %) and 8 (5.6 %) people suffering from Head Injury, Fracture, Soft tissue injury and Psychological Diseases were observed respectively. In Upper class, 0 victim was observed.

Distribution of Diseases in relation with Age among RTA affected people:

In age group of below 30, 16 (11.2 %), 4 (2.8 %), 23 (16.2 %) and 0 (0.0 %) people suffering from Head Injury, Fracture, Soft tissue injury and Psychological Diseases were observed respectively. In age group of 31 – 60, 16 (11.2 %), 9 (6.3 %), 40 (28.2 %) and 12 (8.4 %) people suffering from Head Injury, Fracture, Soft tissue injury and Psychological Diseases were observed respectively. In age group of above 60, 2 (1.4 %), 8 (5.6 %), 11 (7.7 %) and 1 (0.7 %) people suffering from Head Injury, Fracture, Soft tissue injury and Psychological Diseases were observed respectively.

Distribution of Diseases in relation with Gender among RTA affected people:

Out of 113 male, 28 (19.7 %), 18 (12.6 %), 58 (40.8 %) and 9 (6.3 %) were suffering from Head Injury, Fracture, Soft tissue injury and Psychological Diseases respectively. Out of 29 female, 6 (4.2 %), 3 (2.1 %), 16 (11.2 %) and 4 (2.8 %) were suffering from Head Injury, Fracture, Soft tissue injury and Psychological Diseases respectively.

Result on Vyādhi Vargīkarana

Table 1-Distribution of Vargīkarana in relation with RTA Disaster.

Vyadhi Vargikarana		Percentage
Based on Adhithana ^[9]	Saririka	51.0 %
	Manasika	13.0 %
	Saririka - Manasika	36.0 %
Based on Nimitta ^[10]	Nija	13.0 %
	Agantuja	87.0 %
Based on Rogamarga ^[11]	Shakhagata	55.0 %
	Koshthagata	4.0 %
	Marmagata	41.0 %
Based on Dosha ^[12]	Vataja	0.0 %

	Pittaja	0.0 %
	Kaphaja	0.0 %
	Dwandvaja	19.0 %
	Sannipataja	81.0 %
Based on Bala ^[13]	Mrudu	28.0 %
	Daruna	72.0 %
Based on Sadhyasadhyata ^[14]	Sukhasadhya	28.0 %
	Kricchasadhya	53.0 %
	Yapya	19.0 %
	Pratyakheya	0.0 %

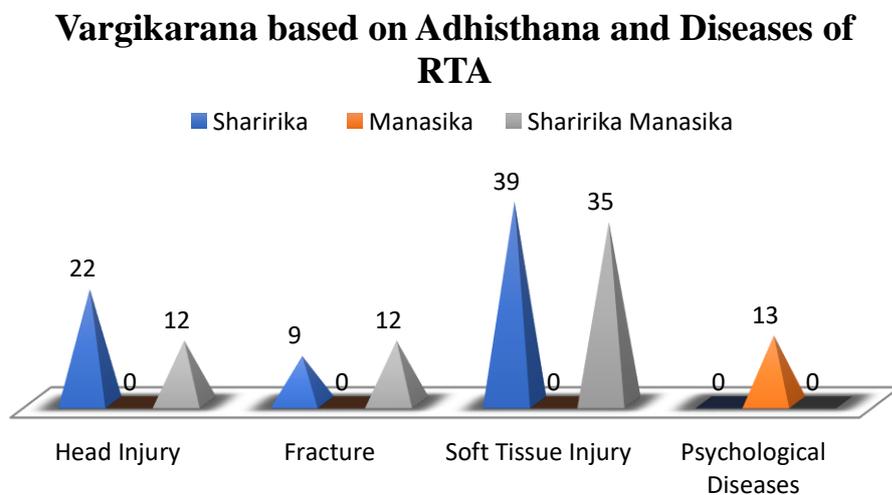
Distribution of Vyādhi Vargīkaraṇa based on Adhiṣṭhāna in relation with Diseases of RTA Disaster.

In RTA among 70 Śārīrīka Vyādhi, 22 (15.5 %), 9 (6.3 %), 39 (27.4 %) and 0 (0.0 %) were Found in Head Injury, Fracture, Soft Tissue Injury and Psychological Diseases respectively.

In RTA total 13 Psychological Diseases were found.

In RTA among 59 Śārīrīka - Mānasīka Vyādhi, 12 (8.4 %), 12 (8.4 %), 35 (24.6 %) and 0 (0.0 %) were Found in Head Injury, Fracture, Soft Tissue Injury and Psychological Diseases respectively.

Illustration – 2: Relation between Vargīkaraṇa based on Adhiṣṭhāna and Diseases of RTA



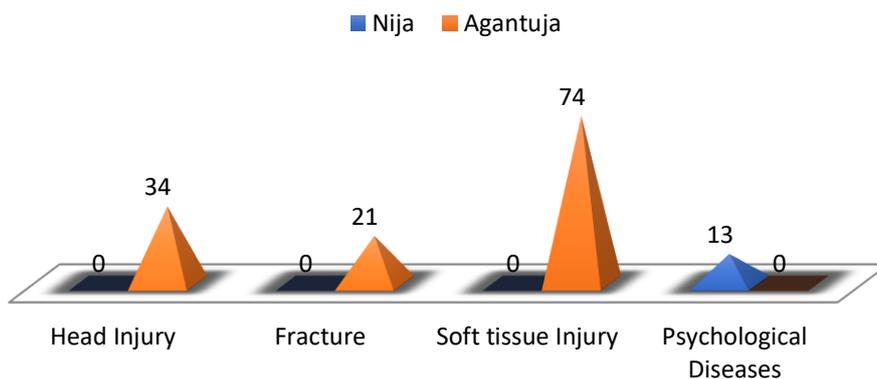
Distribution of Vyādhi Vargīkaraṇa based on Nimmita in relation with Diseases of RTA Disaster

In RTA total 13 Psychological Diseases were found under Nija Vyādhi.

In RTA among 129 Āgantuja Vyādhi, 34 (24.0 %), 21 (14.7 %), 74 (52.1 %) and 0 (0.0 %) were Found in Head Injury, Fracture, Soft Tissue Injury and Psychological Diseases respectively.

Illustration – 3: Relation between Vargikaraṇa based on Nimitta and Diseases of RTA

Vargikarana based on Nimitta and Diseases of RTA



Distribution of Vyādhi Vargikaraṇa based on Rogamarga in relation with Diseases of RTA disaster

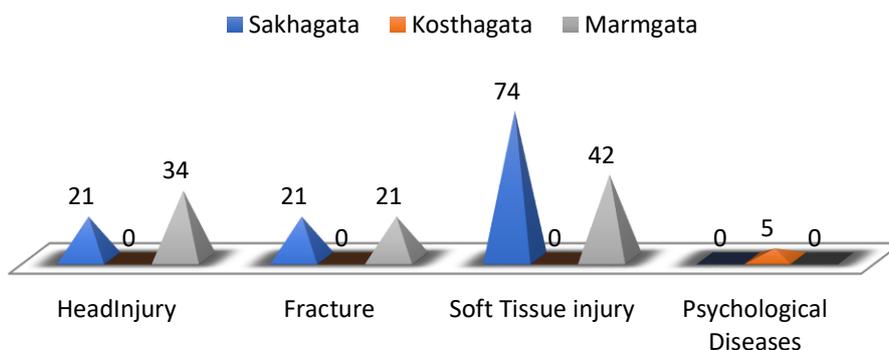
In RTA among 116 Śākhāgata Vyādhi, 21 (9.6 %), 21 (9.6 %), 74 (34.0 %) and 0 (0.0 %) were Found in Head Injury, Fracture, Soft Tissue Injury and Psychological Diseases respectively.

In RTA total 5 Koshagata Vyādhi were found under soft tissue Injury.

In RTA among 97 Marmagata Vyādhi, 34 (15.6 %), 21 (9.6 %), 42 (19.2 %) and 0 (0.0 %) were Found in Head Injury, Fracture, Soft Tissue Injury and Psychological Diseases respectively.

Illustration – 4: Relation between Vargikaraṇa based on Rōgamārga and Diseases of RTA

Vargikarana based on Rogamarga and Diseases of RTA



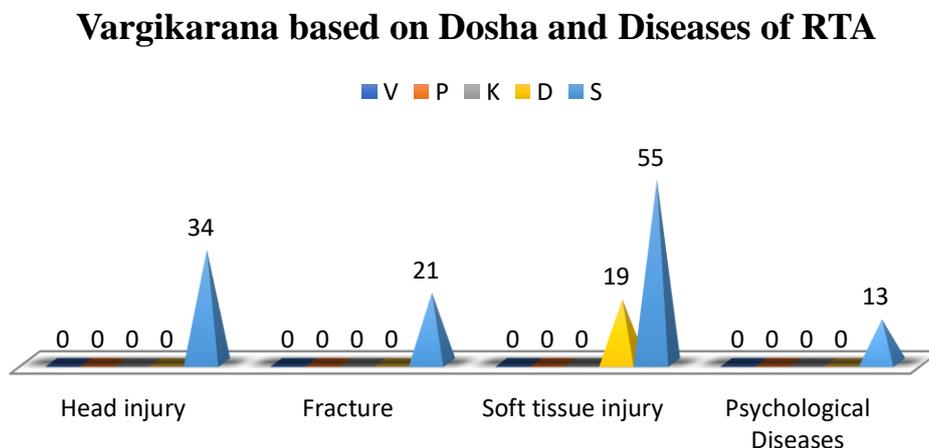
Distribution of Vyādhi Vargikaraṇa based on Doshaja in relation with Diseases of RTA disaster.

In RTA 0 Vātaja, Pittaja and Kaphaja Vyādhi was found.

In RTA total 19 Dwandaja Vyādhi were found under soft tissue Injury.

In RTA among 123 Sannipātaja Vyādhi, 34 (24.0 %), 21 (14.8 %), 55 (38.7 %) and 13 (9.1 %) were Found in Head Injury, Fracture, Soft Tissue Injury and Psychological Diseases respectively.

Illustration – 5: Relation between Vargikaraṇa based on Dōṣa and Diseases of RTA



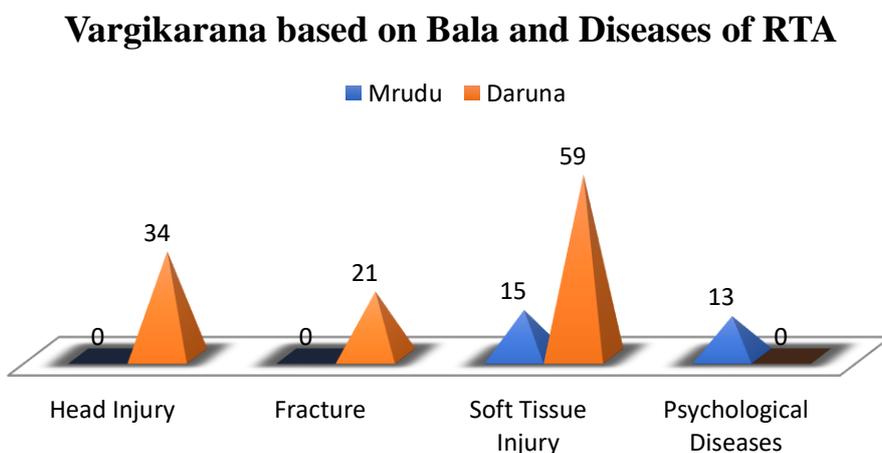
Distribution of Vyādhi Vargikaraṇa based on Bala in relation with Diseases of RTA disaster

In RTA among 28 Mṛdu Vyādhi, 0 (0.0 %), 0 (0.0 %), 15 (10.5 %) and 13 (9.1 %)

were Found in Head Injury, Fracture, Soft Tissue Injury and Psychological Diseases respectively.

In RTA among 114 Dāruṇa Vyādhi, 34 (24.0 %), 21 (14.7 %), 59 (41.5 %) and 0 (0.0 %) were Found in Head Injury, Fracture, Soft Tissue Injury and Psychological Diseases respectively.

Illustration – 6: Relation between Vargikaraṇa based on Bala and Diseases of RTA



Distribution of Vyādhi Vargīkaraṇa based on Sadhyasadyata in relation with Diseases of RTA disaster.

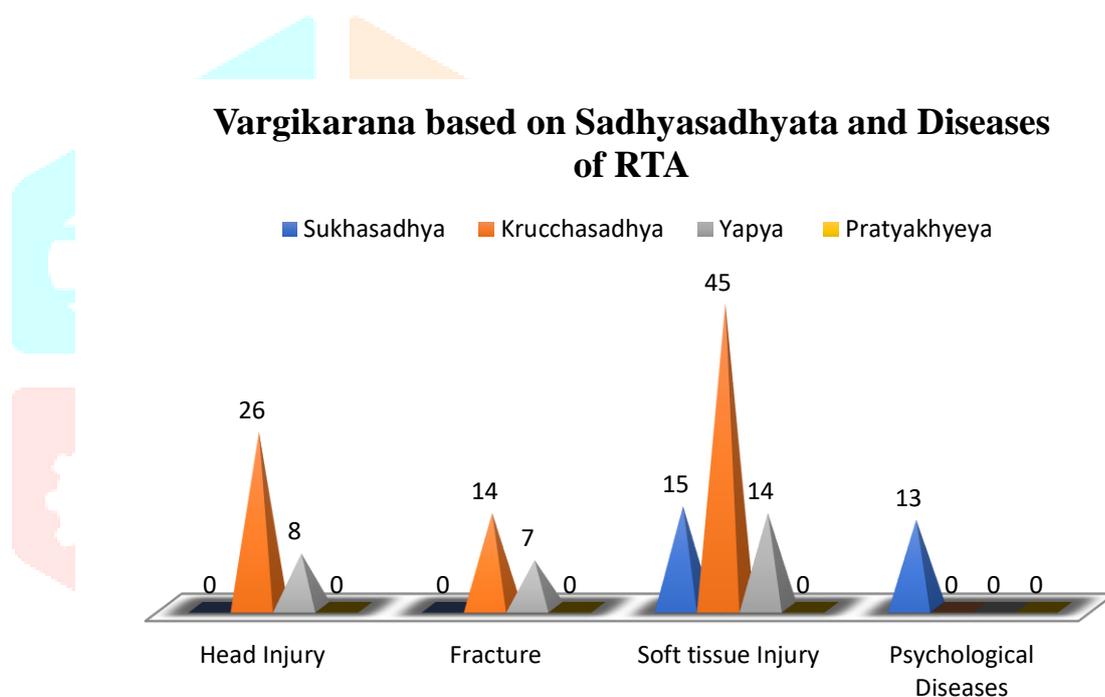
In RTA among 28 Sukhasādhyā Vyādhi, 0 (0.0 %), 0 (0.0 %), 15 (10.5 %) and 13 (9.1 %) were Found in Head Injury, Fracture, Soft Tissue Injury and Psychological Diseases respectively.

In RTA among 85 Kṛcchasādhyā Vyādhi, 26 (18.3 %), 14 (9.8 %), 45 (31.6 %) and 0 (0.0 %) were Found in Head Injury, Fracture, Soft Tissue Injury and Psychological Diseases respectively.

In RTA among 29 Yāpya Vyādhi, 8 (5.6 %), 7 (5.0 %), 14 (9.8 %) and 0 (0.0 %) were Found in Head Injury, Fracture, Soft Tissue Injury and Psychological Diseases respectively.

In RTA 0 Pratyakhyeya Vyādhi was found.

Illustration – 7: Relation between Vargīkaraṇa based on Sādhyāsādhyatā and Diseases of RTA



RESULT

In Head Injury, Marmagata, Dwandvaja, Sannipātaja, Mṛdu, Dāruṇa, Sukha sādhyā, Kriccha sādhyā & Yāpya are highly Significant ($p = .001$), Followed by, Āgantuja Significant ($p = .004$).

In Fracture, Marmagata, Mṛdu, Dāruṇa & Sukha sādhyā are highly Significant ($p = .001$), Followed by, Āgantuja & Śākhāgata Significant ($p = .003$ & $.002$) respectively.

In Soft tissue injury, Śārīrika, Śārīrika – Mānasīka & Śākhāgata are highly Significant ($p = .001$), Followed by, Āgantuja, Dwandvaja, Sannipātaja, Dāruṇa & Sukha sādhyā are Significant ($p = .002$, $.004$, $.003$, $.004$ & $.004$) respectively.

In Psychological Diseases, Mānasīka, Nija, Agntuja, Mṛdu, Dāruṇa, Sukha sādhyā & Kṛccha sādhyā are highly Significant ($p = .001$).

DISCUSSION

Discussion has been done on Vyādhi Vargīkaraṇa in relation with RTA disaster riveting over range of observed data by highlighting the role of disaster management cycle.

Based on Adhiṣṭhāna (Śārīrīka, Mānasīka Śārīrīka - Mānasīka)

Observed Data shows that there is more chance of getting Śārīrīka & Śārīrīka - Mānasīka type of Vyādhi compare to Mānasīka. Therefore, the treatment modalities pertaining to Śārīrīka and Dhī, Dhṛti, Atmādivijñāna Ādi will be countable in the preparedness as well recovery stage of disaster management.

Based on Nimitta (Nija & Āgantuja)

Observed data shows that there is more chance of getting Āgantuja Vyadhi compare to Nija types of Vyādhi. Therefore, the treatment modalities pertaining to Agantuja followed by Nija Vyadhi will be countable in the preparedness as well recovery stage of disaster management.

Based on Rōgamārga (Śākhāgata, Kōṣṭhagata and Marmagata)

Observed data shows that there is more chance of getting Śākhāgata & Marmagata compare to Kōṣṭhagata type of Vyādhi. Therefore, the treatment modalities pertaining to Śākhāgata & Marmagata Vyādhi will be countable in the preparedness as well recovery stage of disaster management.

Based on Dōṣaja

Observed data shows that there is high tendency of getting Sannipātaja type of Vyādhi compare to Dwandvaja & Eka Dōṣaja. Therefore, the treatment modalities pertaining to Sannipātaja Vyadhi will be countable in the preparedness as well recovery stage of disaster management.

Based on Bala (Mṛdu & Dāruṇa)

With the help of current data, it can be concluded that there is more chance of getting Dāruṇa compare to Mṛdu types of Vyādhi. Therefore, the treatment modalities pertaining to Dāruṇa Vyādhi will be countable in the preparedness as well recovery stage of disaster management.

Based on Sādhyaśādhya (Sukhasādhya, Kricchasādhya and Yāpya)

Observed data shows that affected People are more vulnerable to fall under Kricchasādhya category compare to Sukhasādhya & Yāpya category. Therefore, the treatment modalities pertaining to Kricchasādhya Vyādhi will be countable in the preparedness as well recovery stage of disaster management. Thereby, arrest the process of disease transformation from one stage to other.

Conclusion:

Understanding the concept comprehensively and situational analysis of the same is the only way to cope such situations. The same has been understood fully by our acharyas, which is very much evident in present era also

1. There is extensive classification of the diseases in the Ayurvedic classics. The logic behind the classification is to be explored for the better understanding the aim of science. A different kind of treatment modalities has been designed and the knowledge regarding Vyādhi Vargikaraṇa will provide a bridge through which one can achieve the same.
2. In present study, the attempt has been made to understand the concept of Vyādhi & its Vargikaraṇa with new impression i.e., disaster for advancement of community.
3. The observed Mānasika bhāvās in range between 18.0 % - 25.0 % are Cittōdvēga, Bhaya, Śōka, Krōdha and Cintā. This suggests that the chance of getting above mentioned Bhāvās are more. During observation found that people are more vulnerable to Head Injury (23.9 %) and Soft Tissue Injury (52.1 %). In RTA, Śārīrika, Śārīrika – Mānasīka, Śākhāgata, Marmagata, Mṛdu, Dāruṇa, Dwandvaja, Sannipātaja, Sukha sādhyā & Kriccha sādhyā are highly significant with $p = .001$.

REFERENCE:

1. Available from, <https://nidm.gov.in/PDF/Disaster> [Last accessed on 2022 june17].
2. <http://www.acs-aec.org/index.php?q=transport/road-traffic-accidents-%E2%80%93-a-man-made-disaster>
3. Acharya YT, editor. Charaka Samhita of Agnivesha, Sutra Sthana. Ch. 20, Ver. 20. Reprint Edition. Varanasi: Chaukhamba Orientalia; 2019. p. 115.
4. Bhisagacharya HPV, editor, Sarvanga Sundari commentary of Arunadatta and Ayurveda rasayana commentary of Hemadri on Astanga hridayam of Vagbhata, Nidana Sthana. Ch. 1, Ver. 1 Varanasi: Chaukhambha Sanskrit sansthan,2017; p 440.
5. Acharya YT, editor. Charaka Samhita of Agnivesha, Vimana Sthana. Ch. 6, Ver. 3. Reprint Edition. Varanasi: Chaukhamba Orientalia; 2019. p. 242.
6. Acharya YT, editor. Charaka Samhita of Agnivesha, Vimana Sthana. Ch. 6, Ver. 3. Reprint Edition. Varanasi: Chaukhamba Orientalia; 2019. p. 242.
7. Acharya YT, editor. Charaka Samhita of Agnivesha, Sutra Sthana. Ch. 10, Ver. 8. Reprint Edition. Varanasi: Chaukhamba Orientalia; 2019. p. 66.

8. Acharya YT, editor. Charaka Samhita of Agnivesha, Vimana Sthana. Ch. 6, Ver. 4. Reprint Edition. Varanasi: Chaukhamba Orientalia; 2019. p. 243.
9. Acharya YT, editor. Charaka Samhita of Agnivesha, Sutra Sthana. Ch. 20, Ver. 3. Reprint Edition. Varanasi: Chaukhamba Orientalia; 2019. p. 112.
10. Acharya YT, editor. Charaka Samhita of Agnivesha, Sutra Sthana. Ch. 20, Ver. 3. Reprint Edition. Varanasi: Chaukhamba Orientalia; 2019. p. 112.
11. Acharya YT, editor. Charaka Samhita of Agnivesha, Sutra Sthana. Ch. 11, Ver. 48. Reprint Edition. Varanasi: Chaukhamba Orientalia; 2019. p. 77.
12. Acharya YT, editor. Charaka Samhita of Agnivesha, Sutra Sthana. Ch. 20, Ver. 3. Reprint Edition. Varanasi: Chaukhamba Orientalia; 2019. p. 112.
13. Acharya YT, editor. Charaka Samhita of Agnivesha, Vimana Sthana. Ch. 6, Ver. 3. Reprint Edition. Varanasi: Chaukhamba Orientalia; 2019. p. 252.
14. Acharya YT, editor. Charaka Samhita of Agnivesha, Vimana Sthana. Ch. 6, Ver. 3. Reprint Edition. Varanasi: Chaukhamba Orientalia; 2019. p. 252.

