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Validation of Siddha Diagnostic Procedure of *Manikkadai nool* for *Gunmam* Patients at Government Siddha Medical College & Hospital, Palayamkottai

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Authors' contributions

This work was carried out in collaboration among all authors. Author RR designed the study, performed the statistical analysis, wrote the protocol, wrote the first draft of the manuscript, managed the analyses of the study and managed the literature searches. Authors AR and SV supervised this study. All authors read and approved the final manuscript.

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ABSTRACT

Introduction: Siddha Medicine is a system of traditional medicine originating in ancient Tamil Nadu in South India and Sri Lanka. Traditionally, it is taught that the *siddhas* laid the foundation for this system of medicine. Siddha system has a unique diagnostic method to identify the diseases and their causes. *Manikkadai Nool* is one of the diagnostic tool. It is explained in the *Agasthiyar Soodamani Kajiru Soothiram* by Saint Veadammamuni in *Pathinen Siddhar Naadi Nool*.
Aim: The primary aim of this study was to validate the Siddha diagnostic procedure of *Manikkadai nool* for *gunmam patients*.
Study Setting: Government Siddha Medical College, Palayamkottai from April to August 2019.
Methodology: It is an observational study. After identifying the eligible subjects, Data will be collected by using the interview administrated questionnaire & relevant data will be collected by

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measurement. Collected data were processed and statistically analysed by a simple statistical method using Microsoft Excel.

Results and Discussion: *Gunmam* symptoms are included in 10, 9 ½, 8 ¾, 8, 7 ½, 7, 6 ½ & 6 ¼ *Manikkadai* measurements according to the siddha literatures. Researcher has been divided the *gunmam* conditions as mild moderate and severe condition according to the evidence of literatures, Researcher has been included Premonitory symptoms as Mild Condition, Common signs and symptoms as Moderate Condition and complications as Severe condition. Mild condition is in 10-9 fbs *Manikkadai* measurements. Moderate condition is in 8 ¾-7 ¾ fbs *Manikkadai* measurements. Severe condition is in 7 ½-6 ½ > *Manikkadai* measurements. 55% (11) of right hand *Manikkadai* measurements in male and 53% (16) of Right hand *Manikkadai* measurements in female have been correlated with the siddha literatures in the diagnosis of *gunmam*. Pearson correlation value implies that negative correlation between the chronicity of *gunmam* and *Manikkadai* measurement. This data showed the negative relationship between the severity of *gunmam,* & *manikkada*i measurements.

Conclusion: Majority of the *gunmam* subjects were females (60%). The maximum number of subjects was observed in Pitha Kaalam. Majority of the *gunmam* subjects had *vali azhal naadi* (38%) and *azhal vali naadi* (32%). Nei kuri was observed as vali azhal & azhal vali in *gunmam* subjects. Siddha Physicians could be diagnosed the *gunmam* fifty percentage with the help of *Manikkadai* measurements. Pearson correlation value implies that negative correlation between the chronicity of *gunmam* and *Manikkadai* measurement. This data showed the negative relationship between the severity of *gunmam* & *manikkada*i measurements. Out of 50 *gunmam* subjects, 45 were in the assumed assessment criteria range. So further study is essential to validate this assumed assessment of criteria of *manikkadai* measurement in diagnosis of *gunmam.*

Keywords: Manikkadai Nool; Siddha; diagnostic methods; traditional; medicine; gunmam; peptic ulcer.

1. INTRODUCTION

Siddha Medicine is a system of traditional medicine originating in ancient Tamil Nadu in South India and Sri Lanka. Traditionally, it is taught that the *siddhars* laid the foundation for this system of medicine. Agastyar is considered the first *Siddhar* & the guru of all *siddhars,* the Siddha system is believed to have been handed over to him by Shiva [1]. Siddha system considers the human body as a collection of tri-humors & seven basic elements. The equilibrium of humors is consider as health & its disturbance or imbalance leads to disease [2].

Gunmam is a gastrointestinal disorder. It is characterized by indigestion, epigastric pain, heartburn, nausea, vomiting, eructation, belching, body weakness, loss of body weight, flatulence and mental disturbances. Commonly it is classified into eight types. According to the Siddha literatures signs & symptoms of *gunmam* can be compared with Peptic ulcer in modern aspect.

Siddha system has a unique diagnostic method to identify the diseases and their causes. The diagnosis is made by observing the five sense organs: Nose, Tongue, Eyes, Ear and the skin; the five senses: Smell, Taste, Vision, Touch and Sound & by interrogation. The primary importance should be given for physical examination of the five sense organs of the patient using that of the physician. According to the Saint *Theraiyar,* there are eight tools of diagnosis: Symptoms of the body, the colour, the voice, the eyes, the tongue, stools, urine and the pulse.

The examination of the stools and urine has a great significance in diagnosis [2]. Siddha system not only tells diagnosis of diseases and shows prognosis condition also. Various Siddha diagnostic methods are followed in Siddha system. *Manikkadai Nool* is one of the diagnostic tool. It is explained in the *Agasthiyar Soodamani Kajiru Soothiram* by Saint Veadammamuni in *Pathinen Siddhar Naadi Nool*. *Manikkadai* means wrist according to the siddha literatures.

Manikkadai nool is a parameter to diagnose the state of disease by measuring the circumference of the wrist by means of a thread and then dividing the measured circumference with the patient's finger. By this measurement the disease can be diagnosed. When the *Manikkadai nool* is 11 fbs, the person will be stout and he/she will live a healthy life for many years. When the *Manikkadai nool* measures from 4 to 6, it indicates bad prognosis of disease and the

severity of the illness will be high and it leads to death. *Manikkadai Nool* measurement is a continuous ranging value from 4 to 11 fb with an interval of 0.25 fb between each value [3,4].

Manikkadai Nool measurement is the circumference of wrist which is measured four-finger breadth from the wrist. Wrist girth of the *gunmam* is measuring by inelastic thread and expressing it in patient's own finger breadth units and interpreting a prognosis or diagnosis of diseases [3,4]. Gastro intestinal symptoms are included in 10, 9 ¾, 9 ½, 8 ¾, 8, 7 ¾, 7 ½, 7, 6 ½ & 6 ¼ *Manikkadai* measurements [4].

1.1 Objective

1.1.1 Primary objective

To validate the Siddha diagnostic procedure of *manikkadai nool* for *gunmam patients.*

1.1.2 Secondary objectives

1. To find out the wrist circumference according to the text of *Pathinen Siddhar Naadi Nool.*
2. To correlate the *Manikkadai Nool* in *gunmam* patients.

2. METHODOLOGY

2.1 Study Design

This is an observational study.

2.2 Study Setting

This study will be carried out in OPD (Out Patient Department) & IP at Government Siddha Medical College, Palayamkottai.

2.3 Study Duration

This study will be carried out from April – August 2019.

2.4 Study Population

2.4.1 Inclusion criteria

Age above 20 and below 65
Both sexes
Loss of appetite
Nausea / Vomiting
Belching
Eructation
Pain in the abdomen
Flatulence
Abdominal distension
Indigestion
Generalized weakness

2.4.2 Exclusion criteria

Age below 19 to above 80
GIT disorders other than *gunmam*

2.4.3 Sample size

According to the inclusion & exclusion criteria, 50 *gunmam* subjects will be selected for this study.

2.5 Data Collection

2.5.1 Selection of the subjects

The selection will be made for all suitable *gunmam* subjects who will come to the OPD & IPD in the study period.

2.5.2 Sampling techniques and randomization process

The subjects will be selected by simple random method.

2.6 Study Instrument

2.6.1 Questionnaire

Questionnaire was prepared based on the specific objectives

2.7 Study Procedure

Subjects who were diagnosed as *gunmam* will be examined by researcher in the OPD & IPD. After identifying the eligible subjects, relevant information will be collected by using the interview administrated questionnaire & relevant data will be collected by measurement.

2.8 Data Analysis

Data will be entered and analysed with the usage of Microsoft Excel. Collected literature review information also will be compare with the results.

Finally, the research report will be obtained from this present study.

3. RESULTS

3.1 Data Collected from Literatures and Its Interpretation

According to Noi Naadal Noi Muthal Naadal Thiraddu Part II

Gunmam usually appears between age 25 to 45 and are more common in men than women. It tends to occur late in life.

Early symptoms: Loss of appetite, Nausea, Vomiting, Indigestion, Eructation

Late stage: A bloating feeling, Pain in the abdomen, Pain relief after induce vomiting, Mental depression.

Researcher has been divided the *gunmam* conditions as mild moderate and severe condition according to the evidence of literatures, Researcher has been included Premonitory symptoms as Mild Condition, Common signs and symptoms as Moderate Condition and complications as Severe condition [5-13].

Measurements of *Manikkadai,* 10 fbs is include the symptoms of Abdominal discomfort due to gas collection and gastritis. 9 ½ fbs is include the symptom of Loss of appetite. 8 ¾ fbs is include the symptoms of Abdominal pain and discomfort due to *Moola vaivu.* 8 fbs is include the symptoms of Indigestion, abdominal discomfort due to gas collection, anorexia and body weakness. 7 ½ fbs is include the symptom of Abdominal discomfort. 7 fbs is include the symptoms of Hematemesis and constipation. 6 ½ fbs is include the symptom of anorexia. 6 ¼ fbs is include the symptoms of Eructation, vomiting and diarrhoea [3,4,6].

Researcher have been divided the *gunmam* conditions as mild moderate and severe condition according to the symptoms. Mild condition is included in 10-9 fbs *Manikkadai* measurements. Moderate condition is included in 8 ¾-7 ¾ fbs *Manikkadai* measurements. Severe condition is included in 7 ½-6 ½ > *Manikkadai* measurements [3,4,6].

3.2 Data Collected from *gunmam* Subjects and its Analysis

55% of right hand and 45% of left hand *Manikkadai* measurements have been correlated with the siddha literatures in male. 53% of right hand and 40% of left hand *Manikkadai* measurements have been correlated with the siddha literatures in female.

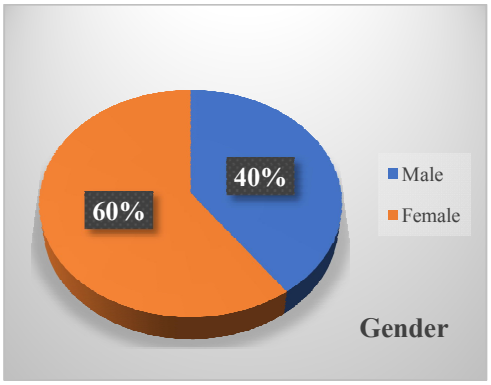

Fig. 1. Percentage of distributions of subjects by gender

Out of 50 gunmam subjects 60% (30) were female and 40% (20) were male

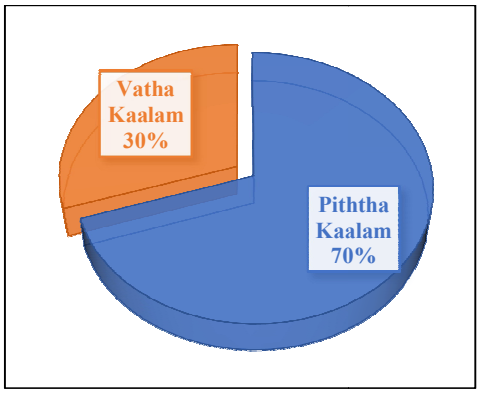

Fig. 2. Percentage of distributions of Subjects by *Kaalam*

Out of 50 gunmam subjects, 70% (35) were in Piththa kaalam. 30% (15) were in vatha kaalam

Out of 26 *gunmam* subjects, 46% (12) was in the 9 ½ fbs and 27% (7) was in 10 and 8 ¾ fbs. Out of 21 subjects, 52% (11) was in the 9 ½ fbs, 24% (5) was in the 8 ¾ fbs, 19% (4) was in 10 fbs and 5% (1) was in 8 fbs.

Out of 50, 26 *gunmam* subjects have loss of appetite, 33 *gunmam* subjects have flatulence, 45 *gunmam* subjects have pain in the abdomen & 28 *gunmam* subjects have abdominal discomfort. Out of 26 *gunmam* subjects, 31% (8) & 19% (5) were coinciding with *manikkadai* value of loss of appetite in right hand and left hand respectively. Out of 33 *gunmam* subjects, 3% (1) & 3% (1) were coinciding with *manikkadai* value

of flatulence in right hand and left hand respectively. Out of 45 *gunmam* subjects, 13% (6) & 11% (5) were coinciding with *manikkadai* value of pain in the abdomen in right hand and left hand respectively. Out of 28 *gunmam* subjects, 25% (7) & 18% (8) were coinciding with *manikkadai* value of abdominal discomfort in right hand and left hand respectively.

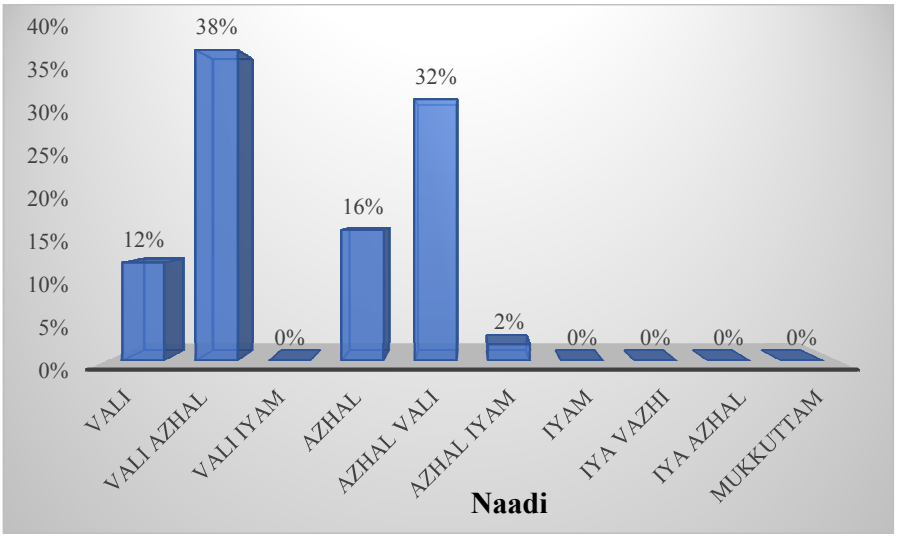

Fig. 3. Distribution of *Naadi*

Out of 50 gunmam subjects, 38% (19) were observed vali azal naadi on examination. 32% (16) were observed azal vali naadi on examination. 16% (8) were observed azal naadi on examination. 12% (6) were observed vali naadi on examination. 2% (1) were observed azal iyam naadi on examination

Table 1. Literature evidence of signs and symptoms of *gunmam* and its inference

Premonitory symptom of gunmam	**Common signs & symptoms of gunmam**	**Complications**
According to *Noi Naadal Noi Muthal Naadal Thiraddu* Part II	According to Yugi Vaithiya Kaaviyam	According to *Noi Naadal Noi Muthal Naadal Thiraddu* Part II
Loss of appetite	Skip the foods	Anemia
Nausea	Heartburn	Loss of body weight
Belching	Vomiting	Hematemesis
Excessive salivation	Pain in the abdomen	Tumor in the stomach
Pain in the epigastrium	Constipation for long period	Hiccough
Vomiting	Vitiated *pitham*	Asthma
Eructation		Breathing difficulties
Flatulence		Chest pain
According to *Jeevarasamirtham*	According to *Anupava vaithiya theva ragasiyam*	
Belching	Belching	
Constipation	Constipation	
Abdominal discomfort	Abdominal discomfort	
Body weakness	Body weakness	
Flatulence	Flatulence	
Abdominal distention due to gas collection	Abdominal distention due to gas collection	
Pain in the abdomen	Pain in the abdomen	
Indigestion	Indigestion	

Table 2. Literature evidence of measurements of *Manikkadai Nool* and its inference related to signs and symptoms of *gunmam*

Measurements of *manikkadai nool*	Inference
10 fbs	Abdominal discomfort due to gas collection, gastritis.
9 ½ fbs	Loss of appetite
8 ¾ fbs	Abdominal pain and discomfort due to *Moola vaivu*
8 fbs	Indigestion, abdominal discomfort due to gas collection, anorexia, body weakness
7 ½ fbs	Abdominal discomfort
7 fbs	Hematemesis, constipation
6 ½ fbs	Anorexia
6 ¼ fbs	Eructation, vomiting, diarrhea (poorly formed stool)

Table 3. An assumed assessment criteria according to the literature evidence of measurements of *Manikkadai Nool* in the diagnosis of *Gunman*

Assessment criteria	Measurements of *Manikkadai Nool*	Inference
Mild	10 fbs	Abdominal discomfort due to gas collection,
(10 -9 fbs)	9 ½ fbs	gastritis.
		Loss of appetite
Moderate	8 ¾ fbs	Abdominal pain and discomfort due to *Moola vaivu*
(8 ¾ - 7 ¾ fbs)	8 fbs	Indigestion, abdominal discomfort due to gas collection, anorexia, body weakness
Severe	7 ½ fbs	Abdominal discomfort
(7 ½ - 6 ½ >)	7 fbs	Hematemesis, constipation
	6 ½ fbs	Anorexia
	6 ¼ fbs	Eructation, vomiting, diarrhea (poorly formed stool)

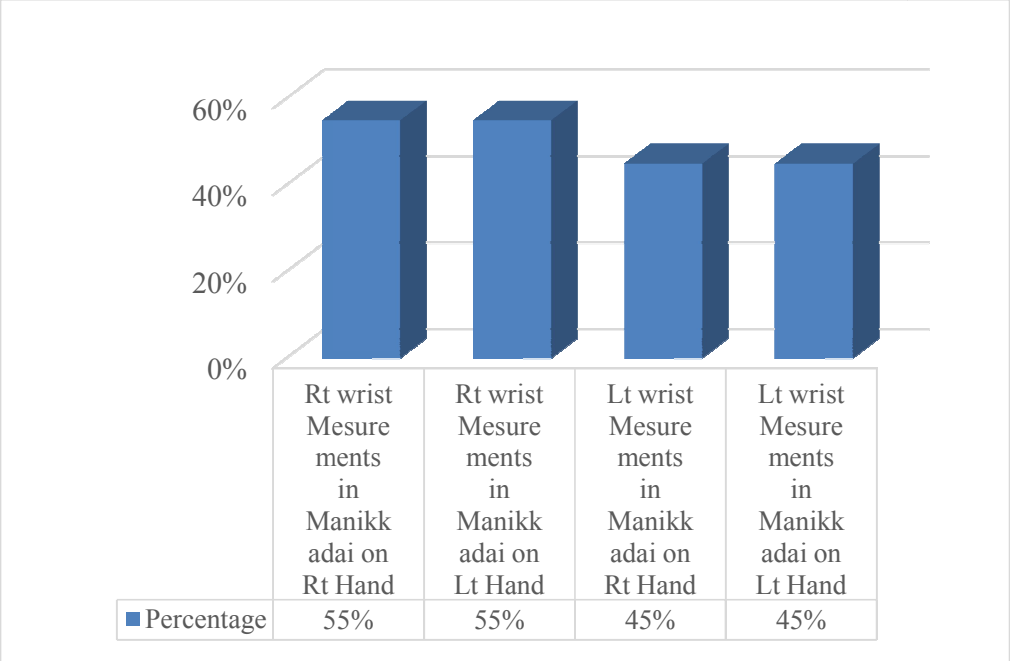

Fig. 4. Correlating the symptoms in *gunmam* related to *Manikkadai* measurements based on siddha literatures and wrist circumference of *gunmam* male subjects

Out of 50 gunmam subjects, 55% (11) of right hand and 45% (9) of left hand Manikkadai measurements have been correlated with the siddha literatures

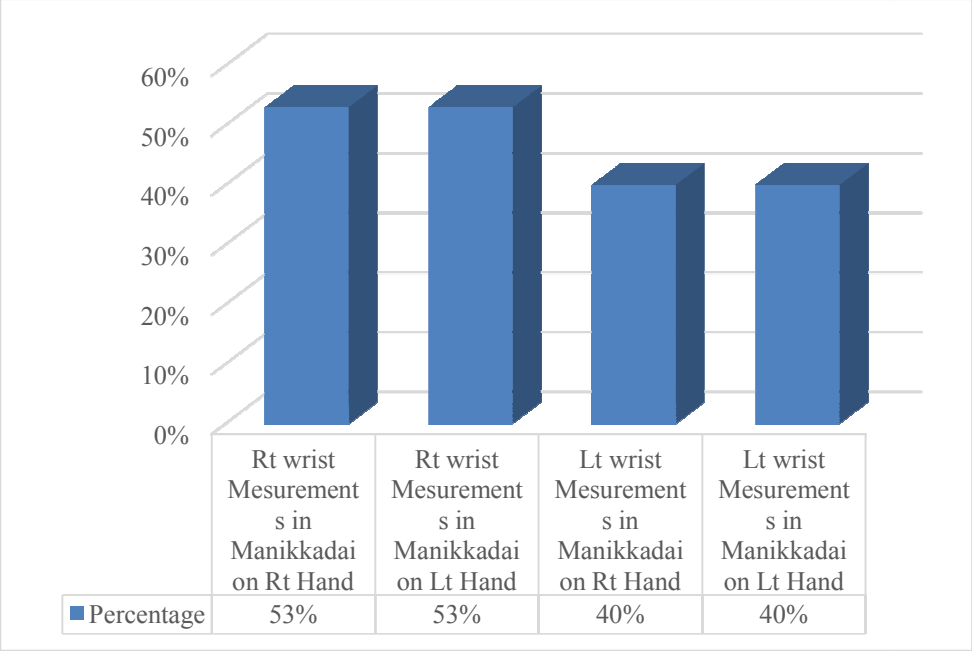

Fig. 5. Correlating the symptoms in *gunmam* related to *Manikkadai* measurements based on siddha literatures and wrist circumference of *gunmam* female subjects

Out of 50 gunmam subjects, 53% (16) of right hand and 40% (12) of left hand Manikkadai measurements have been correlated with the siddha literatures

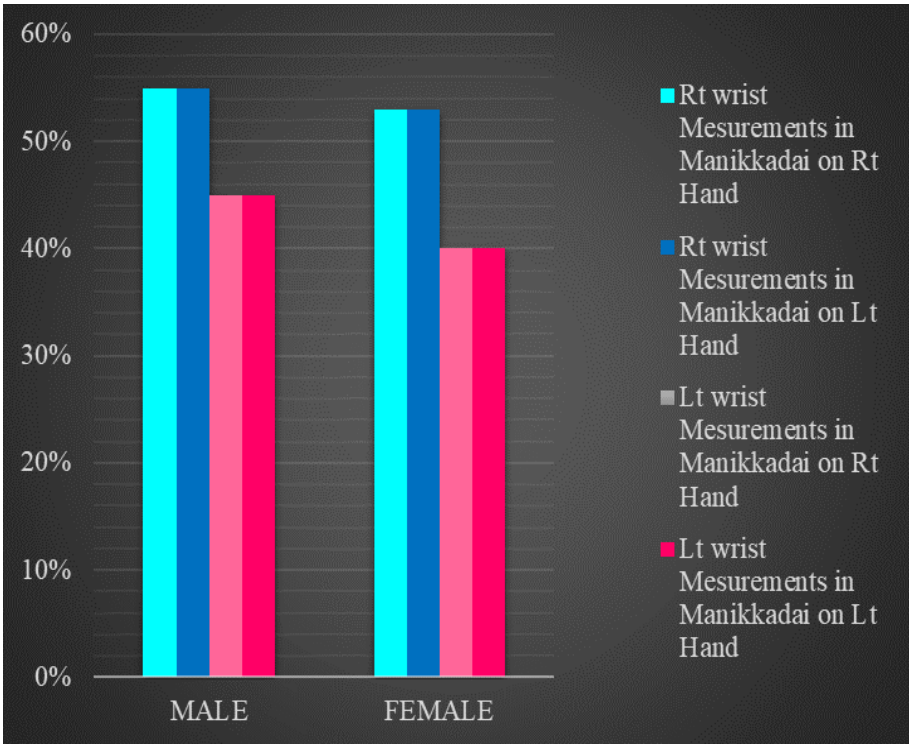

Fig. 6. Correlating the symptoms in *gunmam* related to *Manikkadai* measurements based on siddha literatures and wrist circumference of *gunmam* subjects by gender

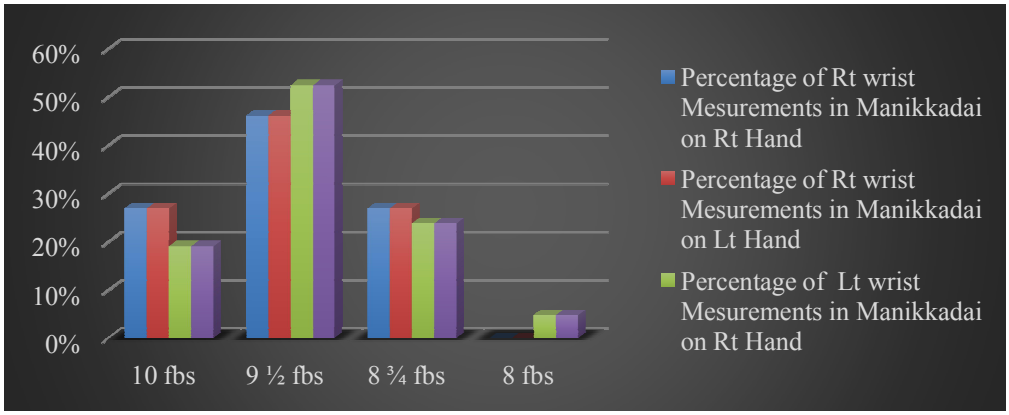

Fig. 7. Correlating *Manikkadai* measurement based on siddha literatures in *gunmam* subjects

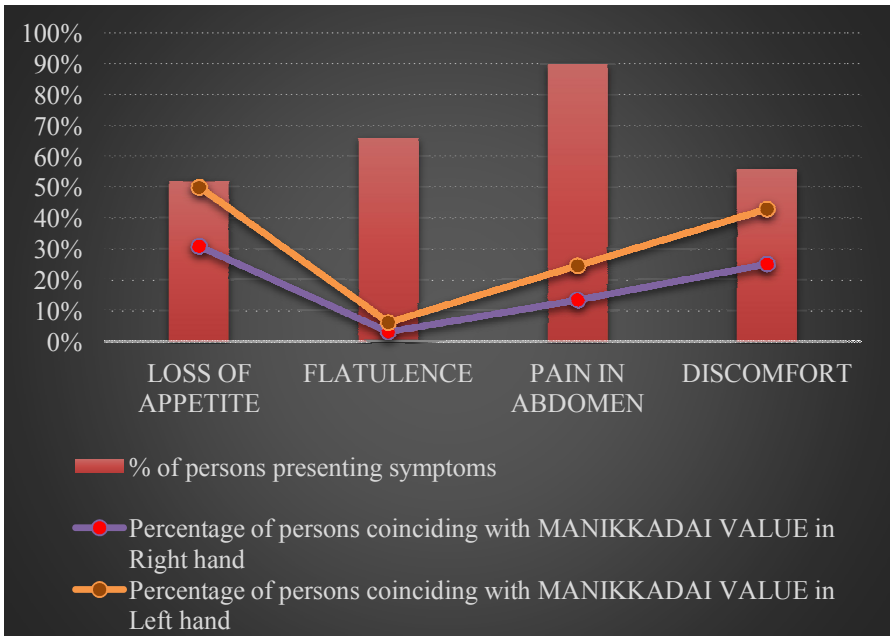

Fig. 8. *Manikkadai* measurements coinciding the symptoms of *gunmam*

Table 4. Correlating *Manikkadai* measurement with chronicity of *gunmam*

Chronicity	
	R-value
Over all	-0.1197
Female	-0.0673
Male	-0.355

Pearson correlation value: (R-Value): -0.1197

The value -0.1197 implies that there is a *weak negative correlation* between the variables of Chronicity of *gunmam* and *Manikkadai* measurements.

Female subjects' correlation

Pearson correlation value: (R-Value): -0.0673

The value -0.0673 implies that there is a *very weak negative correlation* between the variables of Chronicity of *gunmam* and *Manikkadai* measurements.

Male subjects' correlation

Pearson correlation value: (R-Value): -0.355

The value -0.355 implies that there is a *moderate negative correlation* between the variables of

Chronicity of *gunmam* and *Manikkadai* measurements.

So, Pearson correlation shows that negative correlation between the variables of Chronicity of *gunmam* and *Manikkadai* measurements. This data showed the negative relationship between the severity of *gunmam,* & *manikkada*i measurements.

Out of 50 *gunmam* subjects, 45 are in the assumed assessment criteria range. Out of 45 *gunmam* subjects, 29% (13) were in 10–9 fbs on Right hand and 69% (31) were in 10–9 fbs on Left hand. 71% (32) were in 8 3/4-7 3/4 fbs on Right hand and 31% (14) were in 8 3/4-7 3/4 fbs on Left hand.

4. DISCUSSION

Out of 50 *gunmam* subjects

- 60% (30) were female and 40% (20) were male.
- 70% (35) were in *Piththa kaalam*. 30% (15) were in *vatha kaalam*.
- 38% (19) were observed *vali azal naadi* on examination. 32% (16) were observed *azal vali naadi* on examination. 16% (8) were observed *azal naadi* on examination. 12% (6) were observed *vali naadi* on examination. 2% (1) were observed *azal iyam naadi* on examination.
- 32% (16) were observed *azal vali* in *nei kuri* examination. 30% (15) were observed *vali azal* in *nei kuri* examination. 24% (12) were observed *azal* in *nei kuri* examination. 8% (4) were observed *vali* in *nei kuri* examination. 4% (2) were observed *iyam* in *nei kuri* examination. 2% (1) were observed *iya azhal* in *nei kuri* examination.

Data collected from literatures and its interpretation

- Literature evidence of measurements of *Manikkadai Nool* and its inference related to gastro intestinal system.
  Gastro intestinal symptoms are included in 10, 9 ¾, 9 ½, 8 ¾, 8, 7 ¾, 7 ½, 7, 6 ½ & 6 ¼ *Manikkadai* measurements.
- Literature evidence of signs and symptoms of *gunmam* and its inference
  Researcher has been divided the *gunmam* conditions as mild, moderate and severe condition according to the evidence of literatures, Researcher has been included Premonitory symptoms as Mild Condition, Common signs and symptoms as Moderate Condition and complications as Severe condition.
- Literature evidence of measurements of *Manikkadai Nool* and its inference related to signs and symptoms of *gunmam*

Measurements of *Manikkadai,* 10fbs is include the symptoms of Abdominal discomfort due to gas collection and gastritis. 9 ½ fbs is include the symptom of Loss of appetite. 8 ¾ fbs is include the symptoms of Abdominal pain and discomfort due to *Moola vaivu.* 8 fbs is include the symptoms of Indigestion, abdominal discomfort due to gas collection, anorexia and body weakness. 7 ½ fbs is include the symptom of Abdominal discomfort. 7 fbs is include the symptoms of Hematemesis and constipation. 6 ½ fbs is include the symptom of anorexia. 6 ¼ fbs is include the symptoms of Eructation, vomiting and diarrhoea.

- Assumed Assessment criteria according to the literature evidence of measurements of *Manikkadai Nool* in the diagnosis of *gunmam*.

Researcher has been divided the *gunmam* conditions as mild moderate and severe condition according to the symptoms. Mild condition is included in 10 - 9 fbs *Manikkadai* measurements. Moderate condition is included in 8 ¾ - 7 ¾ fbs *Manikkadai* measurements. Severe condition is included in 7 ½ - 6 ½ > *Manikkadai* measurements.

Correlating the symptoms in *gunmam* related to *Manikkadai* measurements based on siddha literatures and wrist circumference of male *gunmam* subjects

Out of 50 *gunmam* subjects,

- 55% (11) of right hand and 45% (9) of left hand *Manikkadai* measurements have correlation with the siddha literatures in male
- 53% (16) of right hand and 40% (12) of left hand *Manikkadai* measurements have correlation with the siddha literatures in female.
- 46% (12) was in the 9 ½ fbs and 27% (7) was in 10 and 8 ¾ fbs. Out of 21 subjects, 52% (11) was in the 9 ½ fbs, 24% (5) was in the 8 ¾ fbs, 19% (4) was in 10 fbs and 5% (1) was in 8 fbs.

- 26 *gunmam* subjects have loss of appetite, 33 *gunmam* subjects have flatulence, 45 *gunmam* subjects have pain in the abdomen & 28 *gunmam* subjects have abdominal discomfort. Out of 26 *gunmam* subjects, 31% (8) & 19% (5) were coinciding with *manikkadai* value of loss of appetite in right hand and left hand respectively. Out of 33 *gunmam* subjects, 3% (1) & 3% (1) were coinciding with *manikkadai* value of flatulence in right hand and left hand respectively. Out of 45 *gunmam* subjects, 13% (6) & 11% (5) were coinciding with *manikkadai* value of pain in the abdomen in right hand and left hand respectively. Out of 28 *gunmam* subjects, 25% (7) & 18% (8) were coinciding with *manikkadai* value of abdominal discomfort in right hand and left hand respectively.

Correlating *Manikkadai* measurement with chronicity of *gunmam*

- **Over all correlation**

Pearson correlation value: (R-Value): -0.1197

The value -0.1197 implies that there is a *weak negative correlation* between the variables of Chronicity of *gunmam* and *Manikkadai* measurements.

- **Female subjects' correlation**

Pearson correlation value: (R-Value): -0.0673

The value -0.0673 implies that there is a *very weak negative correlation* between the variables of Chronicity of *gunmam* and *Manikkadai* measurements.

- **Male subjects' correlation**

Pearson correlation value: (R-Value): -0.35

The value -0.1197 implies that there is a *moderate negative correlation* between the variables of Chronicity of *gunmam* and *Manikkadai* measurements.

So, Pearson correlation shows that negative correlation between the variables of Chronicity of *gunmam* and *Manikkadai* measurements.

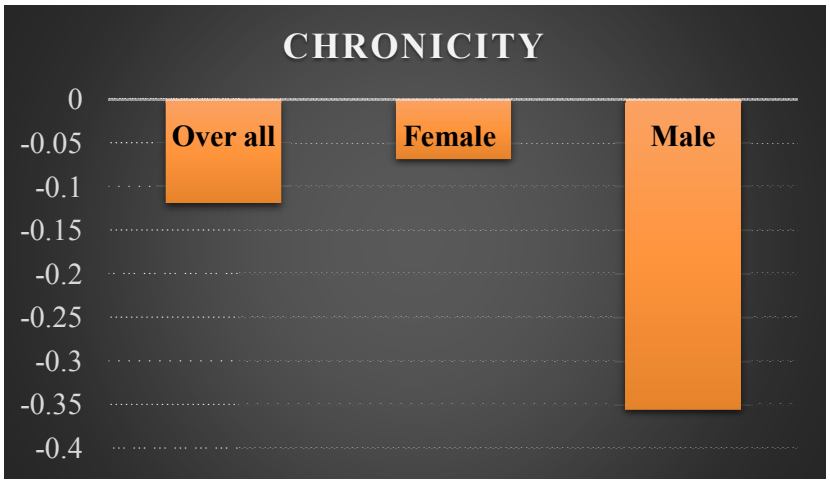

Fig. 9. Over all correlation

Table 5. Distribution of *Manikkadai* measurements according to the assumed assessment criteria

Symptoms	Manikkadai	Rt forearm Mesurements in Manikkadai on Rt Hand	Rt forearm Mesurements in Manikkadai on Lt Hand	Lt forearm Mesurements in Manikkadai on Rt Hand	Lt forearm Mesurements in Manikkadai on Lt Hand
Mild **Moderate**	**10-9 fbs** **8 3/4- 7 3/4 fbs**	29% (13) 71% (32)	29% (13) 71% (32)	69% (31) 31% (14)	69% (31) 31% (14)
Severe	**7 1/2- 6 1/2 >**	0 45	0 45	0 45	0 45

Distribution of *Manikkadai* Measurements according to the assumed assessment criteria

- Out of 50 *gunmam* subjects,
  45 were in the assumed assessment criteria range.
- Out of 45 *gunmam* subjects,
  29% (13) were in 10–9 fbs on Right hand and 69% (31) were in 10–9 fbs on Left hand.
  71% (32) were in 8 3/4-7 3/4 fbs on Right hand and 31% (14) were in 8 ¾-7 3/4 fbs on Left hand.

5. CONCLUSION

Siddha Physicians could be diagnosed the *gunmam* fifty percentage with the help of *Manikkadai* measurements. Pearson correlation value implies that negative correlation between the chronicity of *gunmam* and *Manikkadai* measurement. This data showed the negative relationship between the severity of *gunmam* & *manikkada*i measurements.

Out of 50 *gunmam* subjects, 45 were in the assumed assessment criteria range. So further study is essential to validate this assumed assessment of criteria of *manikkadai* measurement in diagnosis of *gunmam.*

CONSENT

Informed concerned form was prepared by the researcher and written consent will be obtained from selected subjects before the commencement of the study.

ETHICAL APPROVAL

The proposal was submitted to Institutional Ethical Committee (IEC) and obtain clearance certificate.

DISCLAIMER

The products used for this research are commonly and predominantly use products in our area of research and country. There is absolutely no conflict of interest between the authors and producers of the products because we do not intend to use these products as an avenue for any litigation but for the advancement of knowledge. Also, the research was not funded by the producing company rather it was funded by personal efforts of the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Available:https://en.wikipedia.org/wiki/Siddha_medicine
2. Uthamaroyan CS. A compendium of Siddha Doctrine. 2005;301-335.
3. Balakirushnan BR. Pathinen Siddharkal aruliseitha Naadi Saasthiram. 2000;117-122.
4. Rakulini R, Rajarajeshwari A, Victoria S. Literature review of traditional siddha diagnostic method of *Manikkadai Nool*. Journal of Complementary and Alternative Medical Research. 2019;7(4):1-5.
5. Shanmugavel M. Noi Nadal, Noi Muthal Nadal Part II; 2016.
6. Shanmugavel M. Noi Nadal, Noi Muthal Nadal Part I. 2006;345–352.
7. Mohan RS. Yugimuni Vaithiya Kaaviyam; 2014.
8. Kandasamy. Aathmaratsaamirtham ennum vaithiya sara sankirakam; 293-301.
9. Rathakrishnan K. Anupava vaithiya theva ragasiyam Part IV. 1991;158-160.
10. Ponnaiah I. Pararasasegaram Part VI.
11. Ganeshalingam N. Segarasa segara vaithiyath thiravukol.
12. Subraminiyam, Jeevaraksamirtham.
13. Vengadarajan S. Thanvanthiri vaithiyam Part I. 1962;171-178.

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