



## NEED OF A PROTOTYPE FOR *STHANIKA BASTI* - A SURVEY STUDY

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### ABSTRACT

External basti is required for many clinical conditions and majorly in the conditions of chronic pain. These procedures are very effective but can be sometimes go out of pocket for the patients, the therapist have to stand for long hours and deal with hot oil, the doctors often talk about material wastage. The procedures are important for the patients for disease management and accuracy would help the patients. The research paper is trying to understand the same issues from therapists, doctors and patients perspective to unravel how we can approach towards making an automated machine for the same.

Key words – *Sthanika Basti*, Automated Machine, *Panchakarma*, Prototype

**INTRODUCTION** *Sthanika Basti* (External Basti ) is one the mainly used *Panchakarma* procedure in management of most of the musculoskeletal disorders, sports injuries, prevention of wear and tear of joints, strengthening of muscles, joints and bones<sup>[1]</sup>. Due to its safety and efficacy it is one of the mainly prescribed procedures at OPD and IPD level of Ayurveda clinical setup. This procedure requires trained therapist for its execution. This procedure has two main components i.e., unadulterated black gram flour kneaded properly to prepare dough well for pooling of warm oil, continuous cyclic exchange of cooled oil and warm oil with the help of cotton swab, sponge or spatula.<sup>[ii]</sup> Both of these components need perfection for its implementation. If not done properly, it may lead to minor or major burns or rashes on patient's body, leakage or tumble of warm oil. Uniformity of the procedure execution style of therapist also differs as it's a human subjective error. Apart from it post procedure it becomes difficult to scrape out dough pasted on body due to body hairs and dried flour. It is proposed that a procedure so significant for the patient should not be left with possibility of any ambiguities. As a *Panchakarma* specialist, it has been seen the intricate issues emerging on the procedure table several times. During the course of my MD in *Panchakarma*, It was often thought that how can we can have a uniform line of procedure for all technicians and hospitals which lead to the idea of an automated machine for the equivalent. My motivation for joining the PhD is the same - 'a universal method' to do the

*Sthanika Basti* (External Basti) where patients safety is the priority as they are at the receivers end.

This research paper aims to curtail the ground issues that are vital to create an automated machine. The survey research is directed towards all the three components of any treatment-doctors, therapist, and patients. All the three perspective give us three sixty degree views of the issues. These three perspectives have shown us various difficulties faced by both patients and therapists. The results show that an automated machine would be a boon to the Ayurveda. For the therapist, they would be able to cater a large number of patients which is not possible with a shortage of therapists. The Covid 19 has also unlocked new fears in both therapist and patients [iii]. From the patients perspective, we understood that sometimes the procedures can be not affordable and they welcomed the idea of an automated machine if it cuts downs the costs. As the efficacy of these external basti procedures is undoubtedly reported by all the *Ayurveda* experts [iii] but it requires a very well trained therapist to perform this procedure still it is left with discrepancy. So, in this research paper we are trying to unearth the issues faced by not the therapist but also the doctors and patients as well. With respect to Therapist, it was very important as they are the front line workers when it comes to the procedure accuracy. The patient's disease management and quality of life depends upon the accuracy of the procedure too. The Doctors who prescribes the procedure has an important role to say what needs to be in the machine. It was divided into three parts i.e., therapist, patients, doctors.

This part of the survey aimed towards the Therapist experiences in the procedure room who are actually the front line workers. We wanted to know if there is any probable problem or discomfort is faced by *Panchakarma* attendant/Technician/ Masseur while doing external Basti procedure. We asked the respondents different questions about their work experience and based on the information provided by them, we are gathering data on how can we build our self-automated machine for Ayurveda *Panchakarma* procedures. The data of this survey will be used for development of a self-regulated automated External Basti Equipment which can be easily operated at home under guidance of an Ayurveda Doctor to ease the difficulty. The participants coming from various institutions and catering to large numbers of patients every month participated in this survey There were total of 50 respondents from different institutions (Table 1). The age group was also varied with a good experience. (Table 2); on the other hand (Table 3) depicts the different positions of our respondent.

Next part included Ayurveda Doctors, for understating what doctors feel about the automated machine, we surveyed 50 doctors from different institutions and hospital serving at various post (Table 9). This survey aims to know about if there is any probable problem is faced by Ayurveda Doctors while treating patients and prescribing external Basti procedure. We asked the respondents different questions about their work experience and based on the information provided by them, data was gathered on how we can build our self-automated machine for *Sthanika Basti* Ayurveda *Panchakarma* procedures.

The further part included patients who have experienced *Sthanika Basti*( External oil retention *Panchakarma* therapy ) and what are their expectations, we have surveyed a total number of 50 patients ( Table 19). The age of patients ranged from below 20s to 70. (Table 17) .They all were treated for various kind of diseases (Table 18) .

They all were treated with various *Sthanika Basti* (Table). It suggested many patients talked about travel and wait or get admit to the hospital which is hectic. The also talked about daily visits of the hospital. Hence, their answers reflected what can be done for automated machine.

### Methodology

The research is approached through a mixed method where the quantitative side of the study is showing the number to evaluate and while qualitative side is the one showing how we should approach making of the automated machine. A survey questionnaire was prepared exploring all the major areas of the external Basti. The survey was done through Google forms where the forms were filled online and in person. The population of the survey is coming various hospitals in India with vivid range experience. The patients are also coming with approximately a number of 33 diseases which gives us an umbrella understating of the patients experiences during the procedures. The Therapists were given a total number of 25 questions, doctors were given 15 questions and the patients were given 17 questions. We encountered many new discoveries during this process and the results great value addition to the automated machine project.

As stated above that this survey is divided into three parts Therapists, doctors and patients. We will be looking at these perspectives separately in this paper. The results of all the three surveys separately and later combined to develop an automated machine. We will be first looking at therapist experiences and how they suggested that what should the priority of the automated machine. The tables below are showing the results of the survey.

#### From the therapists perspective

**Table 1**

Institutions	No. of Respondents
AIIA	27
Accord Hospital	1
Jabalpur Ayurveda Chikitsalaya	3
Jiva Ayurveda	1
LBSNAA	4
NIA, Jaipur	8
Santhagiri	4
Sports Authority of India, Assam	2
<b>Total</b>	<b>50</b>

**Table 2**

Age group	No. of respondents
Under 18	1
18-22	8

22-26	21
26-30	10
30-34	7
34-38	3

**Table 3**

Position	No. of Respondent
<i>Panchakarma</i> Technician	23
<i>Panchakarma</i> Attendant	12
<i>Panchakarma</i> Therapist	11
<i>Panchakarma</i> therapist course student	4

**Table 4**

S.no	Question	Always	Often	Regularly	Sometimes	Never
1	Unhygienic to use black gram dough in context to COVID 19	17 (34%)	11 (22%)	5 (10%)	14 (28%)	3 (6%)
2	Do you maintain a consistent temperature throughout the procedure	16 (32%)	3 (6%)	10 (20%)	13 (26%)	8 (16%)
3	Do you find different tolerance to temperature in patients	25 (50%)	4 (8%)	14 (28%)	7 (14%)	0
4	Do you find the different temperature tolerance in therapist	26 (52%)	6 (12%)	7 (14%)	9 (18%)	2 (4%)
5	Does the patient ask you to increase or decrease the temperature?	24 (48%)	9 (18%)	8 (16%)	8 (16%)	1 (2%)
6	How often does dough well leaks.	0	14 (28%)	5 (10%)	28 (56%)	4 (8%)
7	Does the warm oil spills on the patient's body.	1 (2%)	11 (22%)	2 (4%)	35 (70%)	1 (2%)

8	Does the oil tumbles on the floor.	1 (2%)	14 (28%)	3 (6%)	26 (52%)	6 (12%)
9	encounter any minor or major accident or fall due to slipping	0	7 (14%)	3 (6%)	32 (64%)	8 (16%)
10	Do you ever have minor or major burn while handling warm oil or warm utensils	0	4 (2%)	2 (4%)	37 (74%)	7 (14%)
11	Does patient get minor or major burn due to warm oil or warm utensils	0	1 (2%)	0	41 (82%)	8 (16%)
12	Do you think the oil of patient mixes with another patient while using a common sponge	28(56%)	4 (8%)	7 (14%)	10 (20%)	1(2%)
13	Do you find that the Black gram flour brought by the patient is adulterated	4(8%)	6(12%)	15(30%)	25(50%)	0
14	Do you find that black gram dough doesn't get completely removed	12 (24%)	8(16%)	4(8%)	24(48%)	2 (4%)
15	Quantity of oil used differs as per different <i>Panchakarma</i> Therapist	1 (2%)	12(24%)	10 (20%)	24(48%)	3(6%)
16	Height of dough well and mould Is not same.	30 (60%)	3 (6%)	7 (14%)	10 (20%)	0

**Table 5**

S.no	Question	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree
1	It is hygienic to use a common sponge for all the patients.	7 (14%)	2 (4%)	6(12%)	17(34%)	18 (36%)
2	Would an automated Basti machine help you in patient handling?	26 (52%)	18 (36%)	6(12%)	0	0

**Table 6 – Height of Oil Pool**

S no	Quantity	No. of Response
1	Up to 20ml	17 (34%)
2	Up to 50 ml	24 (48%)
3	Up to 100ml	9 (18%)

**Table 7– Method of oil exchange**

S no	Responses	No. of Responses
1	Cotton Swab	24 (48%)
2	Sponge	18 (36 %)
3	Spoon	08 (16 %)
4	Big Spatula	00

**Table 8 - Repetition of dough**

Responses	No. of Responses
No	17 (34%)
Yes	33 (66 %)

**From the doctors perspective**

**Table 9**

Institutions	No. of respondents
All India institute of Ayurveda, New Delhi	20
A & U Tibbia college, Karol Bagh	08
Ministry of Ayush	03
MD Ayurvedic College, Etah	01
Swastha Raksha Ayurveda	01
SKS Sarabha Ayurvedic Medical College & Hospital	01
Ayush Department, Rajasthan government	01
Government Ayurveda Dispensary, Orissa	01
Orissa government	01
IIT Delhi	01
Shri Krishna Government Ayurvedic college	01

National institute of Ayurveda	01
CCRAS, Punjabi bagh	01
<i>Praanda Ayurveda</i>	01
<i>Charaka Ayurvedic</i> medical college , UP	01
<i>Prakash Ayurveda Panchakarma Chikitsalaya</i> , Wardha, Maharashtra	01
<i>Maharishi Ayurveda</i>	01
<i>Kayabandhu</i> clinics	01
NIA , Jaipur	01
ESIC , Delhi	01
MB <i>Ayurvedic</i> college	01
<i>Swadharma Ayurveda</i> clinic	01

Table 10

Post	No. of respondent.
MD scholar/PG Scholar	23
AMO	06
Assistant Professor	05
<i>Panchakarma</i> Consultant	06
PhD	05
<i>Panchakarma</i> Vaidhya	02
Director	01
MO ( <i>Panchakarma</i> )	01
<i>Ayurveda</i> Consultant	01

Table 11

S.no	Questions	Always	Often	Regularly	Sometimes	Never
1	Do your patients complain to you about minor/major burn or rashes?	1 (2%)	6 (12%)	2 (4%)	35 (70%)	6 (12%)
2	Would you like to use an automated external <i>Basti</i> machine for your patients?	28 (56%)	6 (12%)	4 (8%)	11 (22%)	5 (10%)
3	Are there variations in the manner of procedure execution of therapist?	10 (20%)	18 (36%)	4 (8%)	18 (36%)	0
4	Do you find varied temperature affinity in different patient	11 (22%)	20 (40%)	3 (6%)	15 (30%)	1 (2%)
5	Do you think the	12 (24%)	11(22%)	22(44%)	3(6%)	2(4%)

	affected area of the patient does not gets covered up completely in mould method of external <i>Basti</i> procedure					
6	Do you advice the patients not to move once the oil is pooled up?	32 (64%)	9 (18%)	5 (10%)	3 (6%)	1 (2%)
7	Does your patient complain of stiffness/cramps/pain during external <i>Basti</i> due to restricted movement	4 (8%)	5 (10%)	4 (8%)	35 (70%)	2 (4%)

Table 12 - Usage frequency of external Basti

Response	No. of Response
Most frequently	20 (40%)
Often	16 (32%)
Regularly	14 (28%)
Sometimes	0
Never	0

Table 13- Rough amount of Black gram flour used in mould method

Quantity	No. of respondent
10 to 50 gram	00
50 to 100 gram	10 (20%)
100 to 150 gram	21 (42%)
150 to 200 gram	07 (14%)
200 to 250 gram	06 (12%)
250 to 300 gram	01 (2%)
300 to 350 gram	02 (4%)
350 to 400 gram	00
Not clear	02 (4%)

Table 14- Rough amount of Black Flour used in dough well method

Quantity	No. of responses
000 to 100 gram	1 (2%)
100 to 200 gram	5 (10%)
200 to 300 gram	18 (36%)
300 to 400 gram	17 (34%)



<b>400 to 500 gram</b>	4 (8%)
<b>500 to 600 gram</b>	4 (8%)
<b>Not Clear</b>	1 (2%)

**Table 15**

S. No	Question	Yes	No
1.	<b>Do you recommend extra amount of oil due to a significant amount of oil in cotton swab/sponge</b>	43 (86%)	7 (14%)
2.	<b>Do you think to cover the affected area completely the dough well method used is expensive in comparison to mould method.</b>	47 (94%)	3 (6%)

**Table 16 - Convenient for patient to use automated instrument**

Response	No. of response
<b>Strongly Agree</b>	8 (16%)
<b>Agree</b>	22 (44%)
<b>Not sure</b>	12 (24%)
<b>Disagree</b>	7 (14%)
<b>Strongly Disagree</b>	1(02%)

**From the patients perspective****Table 17 - Age group of respondents**

S. No	Age Groups	No of respondents
1	Under 20	01
2	20-30	07
3	30-40	15
4	40-50	13
5	50-60	06
6	60-70	04
7	70-80	04

**Table 18- Disease wise category of the respondents**

Diagnosis	No. of patients
<i>Sandhi Vaat</i>	04
Sciatica	03
<i>Kati Shool</i>	03
Post Covid Cardiac Myopathy	04
Low Back ache	02
<i>Kati Grah</i>	02
ACL tear	02
Lumber disc degeneration	01
Cervical spondylitis	01
vertigo	01
<i>Skandha Grah</i>	01
<i>katigatvata</i>	01
Frozen shoulder	02

Stiffness in low back	01
Ankylosing Spondylitis	02
Upper back ache	01
Neck stiffness	01
Back stiffness	01
Ligament rupture in knee	01
<i>Gridhrasi</i>	01
Lumber nerve compression with back pain	01
Lower back ache	01
<i>Jeerna Aam vaat</i>	01
<i>Sandhi Vaat</i>	01
Post traumatic back ache	01
Crackling sound from knee joint	01
Palpitations	01
Sciatica and Osteoarthritis	01
Lumbar spondylitis	01
<i>Aam Vaata with Sandhi Vaata</i>	01
SCA 12	01
Osteoarthritis	01
Weakness in knee joint	01

Table 19- External Basti Procedure experienced by the patients

Options	No. of responses
<i>Kati Basti</i>	18 (36%)
<i>Janu Basti</i>	17(34%)
<i>Greeva Basti</i>	08(16%)
<i>Kati-Prishut Basti</i>	07(14%)
<i>Hridaya Basti</i>	05(10%)
<i>Skanda Basti</i>	03(6%)

Table 20 - Requirement of repetition of External Basti

S. No	Question	Yes	No
1	Requirement of repetition of External <i>Basti</i>	46 (92 %)	4 (8 %)
2	Black gram flour did not stick properly	31 (62%)	19 (38%)

Table 21

S.No	Question	Always	Often	Regularly	Sometimes	Never
1	Getting admitted to IPD or coming daily to hospital for external <i>Basti</i> procedure is	8 (16%)	11 (22%)	3 (6%)	25 (50%)	3 (6%)

	<b>hectic.</b>					
<b>2</b>	<b>Do you need to tell the Panchakarma Therapist to increase or decrease the temperature of oil?</b>	1 (2 %)	9 (18 %)	3 (6%)	26 (52%)	11 (22 %)
<b>3</b>	<b>Did you ever have minor or major burn due to warm oil or utensils</b>	0	0	0	21 (42%)	29 (58%)
<b>4</b>	<b>Did you face any leakage of oil</b>	0	0	0	34 (68%)	16(32%)
<b>5</b>	<b>Did Black gram dough remain stick on your body after procedure completion?</b>	5 (10%)	2 (4%)	2 (4%)	37 (74%)	4 (8%)
<b>6</b>	<b>Do you find discomfort in removing stick Black gram dough</b>	8 (16%)	9(18%)	2 (4%)	24 (48%)	7 (14%)
<b>7</b>	<b>Do you think that your affected area does not get completely covered?</b>	5 (10%)	5 (10%)	0	32 (64%)	8 (16%)
<b>8</b>	<b>Is there any difference in the style of therapist?</b>	3 (6%)	4 (8%)	4 (8%)	35 (70%)	4 (8%)

Table 22

<b>S. No</b>	<b>Question</b>	<b>Strongly agree</b>	<b>Agree</b>	<b>Not Sure</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
<b>1</b>	<b>Would you like</b>	24 (48%)	16 (32%)	7 (14%)	3 (6 % )	0

	<b>to use automated external Basti instrument at your home.</b>					
<b>2</b>	<b>Do you find it costly to use black gram flour</b>	4 (8%)	41 (82%)	5 (10%)	0	0
<b>3</b>	<b>Do you find oil gets wasted in cotton, sponge, flour?</b>	6 (12%)	37 (74%)	7 (14%)	0	0
<b>4</b>	<b>Is it unhygienic to use black gram dough?</b>	6 (12%)	30 (60%)	14 (28%)	0	0

### Discussion

The 22 tables are self-explanatory which shows different experience of therapists, doctors and patients.

The first 8 tables are from the perspective of the therapist, where a total of 50 *Panchakarma* therapists attended the survey. Data suggests that the covid-19 has instilled a new fear of close proximity. Ayurveda procedures like basti need the therapists to be in close contact with the patients. We asked our respondents about how they feel about their work in the age of airborne covid-19, we can see that a number of 17 respondents find it unhealthy to paste the black gram flour on the patient body, 16 respondents also expressed their uneasiness. 14 respondents claimed that sometimes they do find it unhygienic and difficult. Basti requires using of consistent warm oils, when asked only 16 respondent said that they always accomplish it (Table 4). In addition to it 25 therapists reported that the temperature tolerance of all patients is different and it requires a lot of training to accustom as per the requirements. Due to long term usage of warm temperature the affinity of therapist changes and it was noted that 26 respondent's different tolerance. It also shows that 24 therapists said that patient always ask adjust the temperature as per their tolerance. Around 28, 14, 5 therapists informed that the dough well sometimes leaks which results into oil spilling. The data suggests that spilling of oil is common in the procedure room and around 49 reported the same. 46 therapists also reported about the oil spillage on floors or therapy bed. 42 and 47 of them also encountered minor/major fall and burn respectively while doing the procedure. 42 of them also claimed that patients also sometimes get minor burn or rashes due to oil spillage. 49 of them admitted that using a common sponge during the procedure may results into mixing of oils of unalike patients. Data suggests that all of them found that black gram flour is not purest form in the market. Majority of them 42 also informed that dough gets dried up making it difficult to scrap off completely. 47 said sometimes the oil usage differs as per

different therapist. The discrepancy between the height of dough ring and mould can be concluded with the data of all the participants (Table 4). In (Table 5) 35 therapists reported that it's not hygienic to use common sponge in unlike patients. And around 44 therapists accepted that an automated instrument would ease their work in handling patients. In (Table 6) almost all of them reported that noteworthy amount of oil gets wasted in sponge and cotton. There was also a discrepancy found in method of oil pouring into dough well. 24 respondents were using cotton swab, 18 respondents were using the sponge, and 8 were using the spoon (Table 7) In (Table 8) the data suggests that repetition of black gram dough is a well common practice as 33 respondents said that they do repeat the dough for more than one time. The survey was a catalyst to understand that what we should look for when developing our self-regulated automated machine from the therapist perspective. Maximum answers maintained that it should be easy to handle and operate. Maximum medical equipment is expensive, heavy and takes a lot of space. Therapist told us that they should compact acquiring less space. Since, the machine would be electricity based. Therapist said that it should risk free. The Cost effectiveness of machines was also mentioned by the therapists. They also told us that it should be made of durable material so that even small clinics could set up the machine. The therapists told us they have been working all the time and a machine would save their time and efforts. As seen from the survey. It is clear that hygiene is imperative for the procedures. The machine should a hygienic environment. In these procedures, the oil and dough often gets wasted, machine should have Zero wastage. Therapist also mentioned that some patients find it difficult to get up to *Droni*. The machine should be made in a way that it should accessible. These procedures require heated oil to be put on patient's body. The machine should have Temperature management system and last but not the last, a therapist spends a great time in learning the procedure of different therapies. The machine should give satisfactory result.

### Doctors

The doctors responses not starkly different from the therapist when we asked them about issues concerning in the procedure room. As the above data it suggest that this procedure requires heating of different oils and band hence, minor major burns are really common in the procedure room, around 44 admitted the incident. On asked about automated machine 45 respondents are somewhat positive about using it. Data shows that all the doctors found variations in the procedure execution manner of the therapist. Around 49 doctors said there is variation in temperature affinity of almost all patients. Added to it 48 doctors informed that the affected mostly doesn't get completely covered up in the mould method and dough method. Also 49 doctors informed that they advise there patients to not to move during the procedure as the oil is pooled up, also 48 doctors informed that it results into cramps and stiffness in patient.(Table 11).

As per the data (Table 12) all the doctors reported about the high frequency usage of external basti in their respective clinics, hospitals and institution. Furthermore (Table 13 and 14) suggest that there is no fixed amount of the black gram flour for these procedures. Plus, it shows us a state of confusion for the patients. Although, the range of 100 gram to 150 gram was preferred, still do not have fixed answer for it. The procedure requires certain preparation. As in this procedure the cotton bandages or sponges are soaked in the oil and

poured into dough well and in the end are thrown away, which results in a substantial loss of oil at the end of the treatment, for that 43 respondents said that they do recommend extra oil for the same reason. Which add up to the patients pockets. Furthermore 47 doctors informed that the affected area do gets completely covered in the dough well method but is used is expensive in comparison to mould method which unlikely doesn't covers affected area completely. 42 doctors readily accepted that automated instrument would help patients (Table 15)

Apart from it doctors also showed a positive interest about development of self-automated machine (Table 16) And when on asked about their input son it, maximum doctors said that temperature regulation should be there, auto cut, no leakage, whole affected area of body should be covered, no use of flour etc. Also they added that it should be affordable, shock proof, easy to clean, less wastage, cost effective, app monitored, compact, light, temperature modification as per patient's tolerance, adjustable mould, bio sensing, automatic oil filling mechanism etc. were the most common suggestions by the different doctors for the self-automated machine.

### **Patients**

The idea of self-automated machine cannot develop without knowing the perspective of the receiver. The result of 50 patients showed that 46 patients believed that *Sthanik Basti* should be repeated and used on a regular basis for further prevention of aggravation of disease. Also 31 respondents' believed that black gram flour does not get stick properly and leaks various time (Table 20). Added to this (Table 21) it can be distinguished that 50% of the patients found it hectic to regularly travel to hospital or getting admitted to the IPD for this simple procedure. It can be noted that the number of patients denying this is very less. Most patients complained about the waiting hours. Also, 52% of the patients always instruct the patients to raise or decline the temperature during the procedure execution, it can be seen that majority do require asking the therapist for temperature adjustment. During this procedure the patients have to keep the warm hot oil pooled over the affected area this can be sometimes warm and may lead to minor or major burns if not done meticulously. It was found that 21 had major or minor burn and 29 said they never had this unfortunate event. Sometimes the black gram dough well leaks and oil gets spilled over patient's body, 68% of the patients faced it sometimes. After the completion of the procedure 74% of the patients said that the black gram flour got dried and fixed of their body after the procedure completion. Added to this 48% of the patients mentioned that they found it difficult to remove the dried black gram dough after the procedure due to functional limitations because of their particular disease. Unfortunately 64% of the patients told that their affected area does get completely covered in the mould and dough method of external Basti. 70% of the patients informed that his experience of the therapist sometimes does make the difference (Table 21). In when asked about using an automated machine for the different procedures, the patients responded positively. A number of 40 patients favoured the point while number 10 patients were apprehensive about the same. Black gram dough is one of the most important requirements for external basti and for this 45 respondents did found it costly to afford it on daily basis and difficult to get good quality flour. Due to cotton and sponge a fair amount of oil gets absorbed into it and gets wasted on a daily basis for which 46 respondents agreed. Black gram dough

needs to kneaded properly before using it on patients body out of 50 patients 36 of them informed it to be unhygienic in terms of COVID 19 and other communicable infections( Table 22)

### **Conclusion**

All the perspectives do suggest that the discrepancies are present in the execution to some extent sometimes because of various reasons. The Covid was stated as a major reason of sceptics among patients and therapists. We can see that there is a positive attitude towards a automated machine which can relive therapists from over burden and reduce the cost for patients. The doctors also that if they can maintain a perfect temperature and timings, the quality of life of the patient can get better. The survey with therapists suggests that maximum therapist do not follow a universal rule during the therapies, since from the time taken to prepare the pre-operative set up to the oil wastage or reuse of black dough was all different. The survey also suggests that a lot of oil also gets wasted every day and the incidents of slipping on the floor or major/minor burns are also very common. There was a very positive response from the side of therapist for developing the self-automated machine. The doctors too have specified about the cost of the traditional method and wastage of different materials. They have also specified that sometimes it does get inaccessible for the patients to get their treatments every day. Thus, we believe that the suggestions given by the doctors are coming from their daily experience; we value their expertise and time. The receiver/ end-user who are patients have also specified some troublesome issues with regards to conventional method. There is a crucial need to develop an instrument which can resolve all the above matters. To upsurge the treatment percentage and curtail the cost burden of the subjects this automated tool can turn out to be an enormous saviour.

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