Review Article

www.ijrap.net

EFFECT OF CHURNAKRIYA IN THE MANAGEMENT OF SEVERAL LIFE STYLE DISORDERS: A REVIEW THROUGH RESEARCH WORKS CARRIED OUT AT RSBK DEPARTMENT, JAMNAGAR, INDIA

Shingadiya RK [1]*, Bedarkar PB [2], Patgiri BJ [3], Prajapati PK [4]

[1]Assistant Professor, Department of Rasashastra and Bhaishajya Kalpana including drug research, I.P.G.T. & R.A., G.A.U., Jamnagar, India

[2]Assistant Professor, Department of Rasashastra and Bhaishajya Kalpana including drug research, I.P.G.T. & R.A., G.A.U., Jamnagar, India

[3]Professor, Department of Rasashastra and Bhaishajya Kalpana including drug research, I.P.G.T. & R.A., G.A.U., Jamnagar, India

[4]Professor, Department of Rasashastra and Bhaishajya Kalpana including drug research, All India Institute of Ayurveda, New Delhi, India

Received on: 28/03/17 Accepted on: 03/05/17

***Corresponding author**
E-mail: shingadiyarahul@yahoo.in

DOI: 10.7897/2277-4343.08285

ABSTRACT

Churnakriya is a unique pharmaceutical process described in Ayurvedic science for potentiation of the herbal formulations. Present review depicts the comprehensive information of basic concepts of Churnakriya, with a focus on evidence based safety and efficacy of the formulation prepared with Churnakriya on various lifestyle disorders. Research works carried out at RSBK department, IPGT and RA showing impact of Churnakriya process on various lifestyle disorders were included in this review. Formulations prepared with Churnakriya Process such as Amalaki Rasayana, Guduchi Churnakriya and Rasayana Churnakriya showed statistically significant results in Ayurvedic and modern parameters of various life style disorders. Churnakriya processed formulations showed better results in compare to formulations prepared without Bhavana or with less number of Bhavana. Churnakriya process helps to potentiate the formulations. These potentiate formulations have found effective in treating various lifestyle disorders.

Key Words: Amalaki Rasayana, Bhavana, Guduchi, Rasayana Churna

INTRODUCTION

Churnakriya and Bhavana are pharmaceutical processes described in Ayurvedic classics for potentiating the formulations. In Bhavana process, powder of one drug is levigated with the extracts (Swarasa, Kwatha, etc) of other drug having similar quality. In Churnakriya process, Bhavana is given to the powdered drug with its own juice (Swarasa) of same drug is given.[1] Thus, Bhavana is a part of Churnakriya. Generally, Churnakriya process is done with the aim of escalation of properties of the drug being levigated and ultimately to potentiate the therapeutic action of the drug. In Bhavana process, the final product may show combined effect of all ingredient drugs or change the effect of the drug by synergism, antagonism, changing or addition of new actions. The concept of Churnakriya is first described in Charaka Samhita. But the term 'Churnakriya' is first found in Sushruta Samhita.[2] Scattered references are evident in Ayurvedic classics pertaining to Churnakriya viz. Amalaki Rasayana[3], Alambusha Kalpa[4], Gokshuraka Rasayana[5], Krimi Rog Chikitsa[6], Salasaradi Churna[7] and Vidari Churna Kalpa.[8]

In spite of wide utility of Churnakriya and Bhavana in Ayurvedic pharmaceutics and therapeutics, very less information on its basic concepts is available till date. Hence, with aim to evaluate the efficacy of the formulations prepared with Churnakriya process, several research works have been carried out in the department of Rasa Shastra and Bhaishjya Kalpana including drug research under IPGT and RA, Gujarat Ayurved University, Jamnagar at PhD and PG levels during 2000– 2016. Churnakriya of different drug such as Amalaki, Guduchi and Rasayana Churna have been evaluated on different lifestyle disorders. Some modifications have been also carried out in Bhavana drava (Swarasa, Kwatha, Water, etc.) and number of Bhavana (3, 7, 21, etc.) to find out their role in potentiating the formulations. Current review is the initiation towards the evidence assortment and highlighting the safety and efficacy of these formulations.

RESULTS OF THE RESEARCH WORKS

By reviewing the research works of the department of Rasa Shastra and Bhaishjya Kalpana including drug research under IPGT and RA, total five works were found conducted on the efficacy of Churnakriya process on various lifestyle disorders. (Table 1) These works are described precisely below.

Kalsariya B et al. (MD (Ayu) dissertation, 2005)[9] evaluated the comparative efficacy of Amalaki Rasayana prepared by two different Amalaki Churna i.e. Ordinary Amalaki Churna (O.A.C.) (Group A) and Freeze Dried Amalaki Churna (F.D.A.C.) (Group B) in management of the disease Amlapitta (Hyperacidity). 21 Bhavana of Amalaki Swarasa was given to each group. Both the drugs were prescribed in dose of 1 g/day into three divided doses before meal with water. 22 patients having classical signs and symptoms of Amlapitta were randomly divided into group A and B and treated by O.A.R. (12 patients) and F.D.A.R. (10 patients) respectively. Selected

symptomatology and results of both groups are shown in table 2. In cardinal signs and symptoms like Agnimandya (Loss of appetite), Aruchi and Amlodgara more percent relief was found in group A, while in Daha (Burning) symptom, it was more in group B. All the results on cardinal signs and symptoms were statistically highly significant (P<0.001). In Associate symptoms like Vibandha, Shirahshula and Utklesha, more percent relief was found in group A, while in Atopa, Udarashula and Guruta it was more in group B. Complete remission of the disease was seen 33.33% in group O.A.R. and 20.00% in group F.D.A.R. In group O.A.R. 66.67% patients were markedly improved while in group F.D.A.R. results were 60.00%. In group F.D.A.R. 20% patients were improved. Results pertaining to this study shows, that ordinary Amalaki Rasayana is more efficacious than freeze dried Amalaki Rasayana in management of the disease Amlapitta.

The study by Rajani J et al. (MD (Ayu) dissertation, 2012)[10] was intended to assess Rasayana effect of Amalaki Rasayana in stress prone population. The stress level of individuals was evaluated with various stress rating scales i.e. Holmes Rahe Stress Rating Scale, Professional Life Stress Scale, Hamilton Anxiety Rating Scale. (Table 3) In group A, eight patients were treated with Amalaki Rasayana Prepared by seven Bhavana of Amalaki Swarasa. In group B, seven patients were treated with Amalaki Rasayana Prepared by 21 Bhavana of Amalaki Swarasa. In Group C, seven patients were treated with Amalaki Rasayana (21 Bhavana) placed in Bhasma Rashi for four months.[11] All the formulations were prescribed in 5g single dose with honey and ghrita for four weeks. In group A and B, improvement in Holmes Rahe and Hamilton Anxiety rating scale were 19.69% and 23.74% respectively, which was statistically highly significant (p<0.001). This indicates that overall quality of life of volunteers is improved by these potent formulations.

The study by Verma P et al. (MD (Ayu) dissertation, 2013)[12] was double blinded randomised clinical trial. Group A (n=30) was treated with Bhavita Rasayana Churna mixed with Kupeelu and Group B (n=31) was treated with Rasayana Churna mixed with Kupeelu. Drug was given in 3g twice a day with honey and ghrita followed by lukewarm water orally for 28 days and with follow up of 14 days. Group A was found to possess more percent relief in almost classical and contemporary parameters of the disease. (Table 4) Complete remission was observed in 36.66% in Group A and in Group B it was 6.46%. In Group A, 56.67% patients got marked improvement and 6.67% patients got moderate improvement. In Group B, marked improvement was found in 67.74% patients and 38.24% patients got moderate improvement. Thus, Bhavita Rasayana Churna was found more beneficial in comparison to plain Rasayana Churna in providing relief in symptoms of Amavata.

In the study by Agrawal SA et al. (MD (Ayu) dissertation, 2015)[13], total 43 patients i.e. 21 in Group A and 22 in Group B were treated with Guduchi Churnakriya named as SBGC 1 and SBGC 2 respectively. SBGC-1 and SBGC-2 were prepared by seven Bhavana with Guduchi Swarasa 1 (less duration of immersion- 30 min.) and Guduchi Swarasa 2 (more duration of immersion- 12 h) to the dried Guduchi powder respectively. They were prescribed in dose schedule of two g three times a day before meal. Duration of treatment was eight weeks along with follow up of four weeks. In classical symptom Rukshta and Daha, more relief was found in Group A, while in rest classical symptoms like Kandu, Srava, aswedana, Matsyashakalopama, etc. more result was found in group B. (Table 5). In Group A and B respectively, 4.76% and 4.65% marked, 19.05% and 31.82% moderate and 66.67% and 54.55% mild improvement was noted. 4.76% in group A and 6.98% in group B were remained unchanged. Hence, both the formulations were found effective on Eka Kushtha (psoriasis). SBGC 2 (more duration of immersion for Swarasa preparation) was comparatively more efficacious on maximum signs and symptoms of Eka Kushtha (psoriasis) than SBGC 1 (less duration of immersion for Swarasa preparation).

The study by Sharma R et al, (PhD (Ayu) thesis, 2016)[14] was double blinded clinical trial, planned to find out comparative therapeutic efficacy of Jala bhavita (JBGC), Kwatha bhavita (KBGC) and Swarasa bhavita Guduchi Churna (SBGC) on Madhumeha (DM Type-2). Among 110 treated patients, 38 patients were in Group A (JBGC), 38 patients were in Group B (KBGC) and 34 were in Group C (SBGC). The dose of the formulations was two g twice a day, half hour before meal, with Luke warm water for duration of two months. Complete examination of the patients was done with directions of diet, and exercise and after the treatment period the entire study was statistically analyzed and the effect of therapy evaluated. In group A, highly significant relief was found in symptoms of Prabhuta Mutrata, Kshudha, Trishna, Dourbalya and Pindikodveshtana. In FBS and PPBS, the group A showed significant and highly significant result respectively. In group B, highly significant result was found in symptoms of Prabhuta Mutrata, Kshudha, Daha, Dourbalya and Pindikodveshtana. In FBS and PPBS, the group B showed highly significant result. In group C, highly significant result was found in symptoms of Prabhuta Mutrata, Kshudha, Trishna, Daha, Dourbalya and Pindikodveshtana. In FBS and PPBS, the group C showed non-significant results. (Table 6) While comparing the total effect of therapy in between three groups in subjective as well as objective parameters, moderate improvement was found 7.89 % in group A, and 34.71 % in group B. Mild improvement was found 84.21 % in group A, 65.79 % in group B and 64.71 % in group C. Overall, Group B was comparatively found more efficacious than group A followed by group C.

DISCUSSION

Churnakriya is a unique process involved Bhavana of own juices or extracts to the herb. Bhavana is the widely used Samskara in Ayurvedic pharmaceutical preparations, which carries the Guna-Karma (qualities and action) of liquid media into Bhavya Dravya. Thus it most probably regulate the qualities and action of the formulations, by Gunantara (change in Guna), Gunadhana (addition of new properties) or Gunotkarsha (augmentation) or Gunahani (reduction or removal of properties).[15] As in Churnakriya process, Bhavana is given by Swarasa of same drug or drugs with similar properties; there are more chances of addition and augmentation of the properties of the drug. Hence, quicker, augmented action with possible reduction in required therapeutic dose of the drug can be achieved by the process.[16]

In the studies included in present review, basic drugs were choosen according to the diseases like Amalaki for Amlapitta and stress, Guduchi for Ekakushtha and Madhumeha and Rasayana churna for Amavata; then Churnakriya process was applied on them in view to get synerestic effect. Some modifications were also carried out to understand the process and to compare their effects. Rasayana churna evaluated with and without Churnakriya process on Amavata showed better results in processed group. This indicates the potentiating of the basic drug by Churnakriya process.

Modification of Basic drug was carried out by Kalsaiya B et al. Churnakriya process was applied on ordinary dried Amalaki powder and freeze dried Amalaki powder. Comparatively,

modified formulation did not show better result. Impact of number of Bhavana in Churnakriya process was evaluated by Rajani J et al. and found comparatively better effect in formultion prepared with more bhavana. In experimental study, better immune-stimulant and cytoprotective activity were found in Amalaki Rasayana prepared by 21 Bhavana.[17] It indicates augmentation in drug potency with increasing the numbers of respective Bhavana.

Modification in Bhavana dravya was carried out by Sharma R et al. Water, decoction and juice of the drug were used for Bhavana and clinically, modified group (Decoction bhavita) showed better results on Madhumeha. Kwatha (Decoction) is described as Laghu than Swarasa (Juice) due to Agni Samyoga (Heat application). That may be a reason of more effect of Kwatha bhavita Guduchi Churnakriya on Madhumeha. Agrawal SA et al. had modified the method of juice extraction and found better result in formulation prepared with bhavana of juice derived with more immersion period. More immersion period leads to comparatively more extraction of water soluble extracts. Liquid media play an important role for extraction of components of various ingredients as well as for their chemical interaction. It may act as a buffering agent by maintaining of specific pH and may act as preservative for the material. It helps in easy and smooth grinding. Bhavana in context of wet triturating facilitates particle size reduction and homogenization. Particle size is one of the important factors which can affect dissolution and absorption of the drug. Larger the surface area increses the dissolution rate and effective absorption. Thus, Particle size reduction increases the rate of absorption of material and enhances the bioavailability of the drug. Sparingly soluble drugs are absorbed more rapidly when they are administered in fine powdered form. in addition, induction of trace elements (from Bhavana drava) fulfills the micronutrients requirement of body.[18]

No any adverse drug reactions were observed in all these studies. Effect on hematological and biochemical parameters did not showed any derangement in all the studies. These show the safety of the formulations.

Table 1: Grouping and Modification in the research works

N	Research works	Formulation	Modification	Group A	Group B	Group C	Comparatively better
1	Kalsariya B et al.	Amalaki Churnakriya	Basic drug	Ordinary Amalaki Churna	Freezed dried Amalaki Churna	-	Group A
2	Rajani J et al.		Number of Bhavana & Kalaprakarsh	Seven Bhavana	21 Bhavana	Placed in Bhasma Rashi	Group B
3	Verma P et al.	Rasayana Churnakriya	-	Bhavana	Without Bhavana	-	Group A
4	Agrawal SA et al.	Guduchi Churnakriya	Method of Juice extraction	Immersion for 1 hour	Immersion for 12 hour	-	Group B
5	Sharma R et al.		Bhavana Drava	Water	Decoction	Juice	Group B

Table 2: Assessment criteria and results of Amalaki Rasayana on Amlapitta (Acidity)

Cardinal symptoms	Group A	Group B	Associate symptoms	Group A	Group B
Daha (Burning)	72.61↓***	75.00↓***	**Shirahshula (Headache)**	23.31↓*	33.00↓**
Amlodgara (Belching)	82.78↓***	68.54↓***	**Vibandha (Constipation)**	75.00↓***	78.00↓***
Aruchi (Annorexia)	71.49↓***	66.67↓***	**Guruta (Heaviness)**	57.14↓***	57.27↓***
Agnimandya (Loss of appetite)	70.37↓***	64.50↓***	**Atopa (Borborygm)**	75.00↓***	67.00↓***
			Udarashula (Abdomen pain)	71.43↓*	29.06↓***
			Utklesha (Nausea)	71.55↓***	83.00↓***

*** Highly significant [<0.001], ** Significant [≤ 0.05, ≤ 0.01], * Insignificant [>0.05]

Table 3: Assessment criteria and results of Amalaki Rasayana in stress (Rasayana effect)

Ayurvedic Parameters	Group A	Group B	Group C	Modern parameters	Over all
Daurbalya (Weakness)	53.33↓**	35.71↓*	61.54↓*	**DHEA-S**	4.34↓*
Amlodgara	66.67↓	66.67↓	66.67↓	**Holmes Rahe scale**	19.69↓***
Khalitya (Hair loss)	16.67↓*	100↓*	10↓*		
Anidra (Sleep disturbance)	33.33↓*	25.00↓*	25.00↓*	**Hamilton Anxiety rating scale**	23.74↓***
Agnimandhya	50.00↓*	0.0	42.86↓**		

DHEA-S = Dehydroepiandrosterone Sulphate test

Table 4: Assessment criteria and results of Rasayana Churnakriya on Amavata (Rheumatoid arthritis)

Ayurvedic Parameters	Group A	Group B	Modern parameters	Group A	Group B
Angamarda (Body ache)	96.3↓***	80.0↓***	**Pain**	70.96↓***	63.78↓***
Aruchi	100↓***	100↓***	**Oedema**	87.5↓***	73.99↓***
Trishana (Thrist)	75↓**	52.81↓**	**morning stiffness**	89.73↓***	57.90↓***
Aalasya	100↓***	81.3↓***			
Gaurava (Heaviness)	90.5↓*	90.3↓**	**Tenderness**	79.31↓***	77.43↓***
Apaki	100↓***	96.2↓***	**Fever**	95.80↓***	94.10↓***
Anga shunnata (Numbness)	83.3↓***	66.7↓***	**Weakness**	84.20↓***	95.20↓***

*** Highly significant [<0.001], ** Significant [≤ 0.05, ≤ 0.01], * Insignificant [>0.05]

Table 5: Assessment criteria and results of Guduchi Churnakriya on Eka kushtha (Psoriasis)

Ayurvedic Parameters	Group A	Group B	Modern parameters	Group A	Group B
Rukshata (Dryness)	56.75↓***	48.77↓***	**Discoloration**	23.98↓***	20.76↓**
Matsyashakalopamam (Scaling)	46.36↓***	56.80↓***	**Candle grease sign**	54.55↓***	39.99↓**
Aswedanam (Anhydrosis)	28.00↓**	24.99↓**	**Auspitz sign**	36.65↓***	45.15↓***
Daha (Burning)	66.64↓***	70.40↓***	**Koebner phenomena**	40.65↓***	40.75↓**
Srava (Discharge)	37.50↓*	80.00↓**			
Unnati (Elevation)	34.78↓***	42.56↓***	**PASI Score**	37.85↓***	47.88↓***
Kandu (Itching)	57.62↓***	65.76↓***	**DLQI Score**	50.24↓***	57.81↓***

*** Highly significant [<0.001], ** Significant [≤ 0.05, ≤ 0.01], * Insignificant [>0.05], PASI= Psoriasis Area Scoring Index, DLQI= Dermatology Life Quality Index

Table 6: Assessment criteria and results of Guduchi Churnakriya on Madhumeha (Diabetes type 2)

Ayurvedic Parameters	Group A	Group B	Group C	Modern parameters	Group A	Group B	Group C
Prabhuta Mutrata	77.19↓***	73.68↓***	73.91↓***	**FBS**	10.12↓**	31.87↓***	4.74↓*
Avila Mutrata	50↓**	100↓**	58.33↓**	**PPBS**	22.7↓***	38.40↓***	5.85↓*
Kshudha	1.32↓***	83.33↓***	78.57↓***	**SGPT**	0.75↓**	3.19↓**	28.99↓**
Trishna	84.21↓***	60↓**	77.78↓***	**SGOT**	9.58↓***	6.32↓***	1.43↓*
Daha	88.33↓**	89.13↓***	82.22↓***	**S.Albumin**	0.42↓*	0.33↓*	0.44↓*
Suptata	90↓**	66.67↓**	75↓**	**S.Globulin**	1.88↓*	2.87↓**	3.84↓*
Daurbalya	66.67↓***	81.48↓***	90↓***	**Alkaline Phosphate**	2.70↓*	2.88↓**	12.89↓*
Pindikodweshtana	85.56↓***	82.22↓***	75↓***	**Blirubine (T)**	11.18↓*	2.73↓*	4.51↓*
Klaibya	58.33↓**	0	41.67↓**	**Uric Acid**	7.95↓***	12.75↓***	7.90↓***

*** Highly significant [<0.001], ** Significant [≤ 0.05, ≤ 0.01], * Insignificant [>0.05], FBS= Fasting Blood Sugar. PPBS= Post Parendial Blood Sugar, SGPT= Serum Glutamic Pyruvic Transaminase, SGOT= Serum Glutamic Oxaloacetic Transaminase.

CONCLUSION

Churnakriya is a unique process during drug processing, having multi-dimensional pharmaceutical and therapeutic implications. It affects the physical, chemical and biological properties of a dosage form. It potentiates the drug with repeated Bhavana of its own juices or extracts. Potency of the final product prepared by Churnakriya process is depended upon number of Bhavana, nature of Bhavana dravya and basic drug, and method of extraction. These potentiate formulations have been found statistically significant in both Ayurvedic and modern clinical parameters of various lifestyle disorders in this review. This method of drug potentiating should be adopted and tested on large scale population for getting better result in various life style disorders.

ACKNOWLEDGMENT

Authors duly acknowledge all the Researchers and involved technical authorities, whose works have been screened in the current attempt. Authors are also thankful to the researchers, head of department of Rasashastra and Bhaishajya Kalpana including drug research and Director IPGT and RA for their kind permission.

REFERENCES

1. Acharya Yadavaji Trikamji, Charaka Samhita Kalpa Sthana 12/47-48, Chaukhambha Orientalia Varanasi Reprint edition 2004.p.672.
2. Acharya Yadavaji Trikamji, Sushruta Samhita Chikitsa Sthana 10/10-12, Chaukhambha Krishanadas Academy Varanasi Reprint edition 2004.p.415.
3. Anonymous. Rasatantrasaar and Siddhaprayoga Sangraha, Rasayana Vajikaran Prakarana, Dwitiya Khanda, Krishna Gopal Ayurved Bhawan Ajmer 4th edition 2012.p.286.
4. Gupta A. Astanga Sangraha Uttara Sthana 49/75, Chaukhamba Krishandas Academy Varanasi Reprint edition 2005.p.400.
5. Paradakara HS, Astanga Hridaya Uttara Sthana 39/56, Chaukhambha Sanskrita Sansthana Varanasi 4th edition 2010.p.927.
6. Acharya Yadavaji Trikamji, Charaka Samhita Vimana Sthana 7/22, Chaukhambha Orientalia Varanasi Reprint edition 2004.p.260.
7. Acharya Yadavaji Trikamji, Sushruta Samhita Chikitsa Sthana 10/10-12, Chaukhambha Krishanadas Academy Varanasi edition 2004.p.415.
8. Tripathi I, Chakradatta Vrishyadhikaar 67/3, Chaukhamba Sanskrit Sansthan Varanasi 3rd edition 1997.p.431.
9. Kalsariya B, Prajapati PK. Patgiri BJ, Ravishankar B, Subrata de. A comparative pharmaceutico pharmaco clinical study of Amalaki Rasayana prepared with freeze dried and ordinary Amalaki w.s.r. to Amlapittahara effect. MD dissertation. Jamnagar: RSBK department, I.P.G.T. and R.A, Gujarat Ayurved University; 2005.
10. Rajani J, Galib, Shukla VJ, Ravishankar B, Prajapati PK. Pharmaceutical standardisation of Amalaki Rasayana wsr to its Rasayana effect. MD dissertation. Jamnagar: I.P.G.T. and R.A, Gujarat Ayurved University; 2012.
11. Acharya Yadavaji Trikamji, Charaka Samhita Chikitsa Sthana 1/2/8, Chaukhambha Orientalia Varanasi Reprint edition 2004.p.382.
12. Verma P, Patgiri BJ, Galib, Shukla VJ. A study on the concept of Churna Kriya on Rasayana Churna and its efficacy on Amavata with Kupeelu (*Strychnous nux-vomica* Linn.). MD (Ayu) dissertation. Jamnagar: RSBK department, I.P.G.T. and R.A, Gujarat Ayurved University; 2013.
13. Agrawal SA, Bedarkar PB, Prajapati PK, Shukla VJ, Nariya M. Effect of Guduchi Churna Kriya prepared with Guduchi Swarasa derived by two different methods on Eka Kustha (Psoriasis). MD (Ayu) dissertation. Jamnagar: RSBK department, I.P.G.T. and R.A, Gujarat Ayurved University; 2015.
14. Sharma R, Prajapati PK, Galib, Shukla VJ. Role of Bhavana Samskara on Guduchi Churna and its Effect on Type 2 Diabetes Mellitus. PhD (Ayu) dissertation. Jamnagar: RSBK

department, I.P.G.T. and R.A, Gujarat Ayurved University; 2016.
15. Gupta S, Mitra S, Prajapati PK. Utility of Samskara in pharmaceutics w.s.r to Sandhana Kalpana. Ind J Ancient Med and Yoga 2009;2:229-34.
16. Acharya Yadavaji Trikamji, Charaka Samhita Kalpa Sthana 12/47-48, Chaukhambha Orientalia Varanasi Reprint edition 2004.p.672.
17. Rajani J, Galib, Shukla VJ, Ravishankar B, Prajapati PK. Pharmaceutical standardisation of Amalaki Rasayana wsr to its Rasayana effect. MD dissertation. Jamnagar: I.P.G.T. and R.A, Gujarat Ayurved University; 2012.
18. Sarkar PK, Chaudhary A, Prajapati PK. Evaluation of Lauha Bhasma on classical analytical parameters, A pilot study. Ancient Science of Life 2008; XVII(3):24-30.

Cite this article as:

Shingadiya RK *et al*. Effect of Churnakriya in the management of several life style disorders: A review through research works carried out at RSBK department, Jamnagar, India. Int. J. Res. Ayurveda Pharm. 2017;8(Suppl 2):68-72 http://dx.doi.org/10.7897/2277-4343.08285

Source of support: Nil, Conflict of interest: None Declared