

CRITICAL REVIEW ON IMPORTANCE OF BHAVANA IN RASOUSHADHIMadhulika Priya¹ Govinda Sharma K²

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ABSTRACT

Samskara is a process in which the *Svabhava* (nature) of raw drug is converted according to the requirement of the formulation. *Bhavana* is one among such *Samskara* which is defined in different literatures of *Rasashastra*. In general, the raw material will be augmented with specific liquids for specific duration with specific method. Different modes of processes where *Bhavana* is used are *Shodhana* (purificatory measures), *Marana* (incineration), *Amritikarana* (inducing nector like properties), *Satwapatana* (metal extraction) and *Kalpana* like *Kharaleeya rasayana*, *Parpati kalpana*, *Kupipakwa rasayana* and *Pottali rasayana*. The benefits of *Bhavana* are many. It potentiates the final product by using the similar dravya for *Bhavana*. It leads to particle size reduction of molecules subjected for the *Bhavana* by repeated movement and pressure of pestle. *Bhavana* with organic juices improves the bioavailability of the drugs thereby enhances their rate of absorption. It includes the herbal juices which may have neutralizing effect on the substance used thus helps in decreasing their toxicity or impurities and so on. The substance and purpose of *Bhavana* decides the efficacy of final product. Multi-dimensional utility of *Bhavana* is supported by many research studies.

Keywords: *Bhavana*, *Samskara*, *Shodhana*, *Marana*, *Amritikarana*, *Rasaushadhi*

INTRODUCTION

Conversion of undesired properties of a raw material into desirable properties is an important skill of a physician. The safety and efficacy of a formulation totally depends up on this skill. The scholars of *Ayurveda* have stated that “a person having a proper knowledge of this skill becomes a successful physician¹. Further it is stated that with *Yukti* (skill) a physician becomes competent enough to convert the properties of potent poison also into properties of ideal medicine and vice versa².

For the successful implementation of *Yukti* in converting a raw drug into Medicine, *Samskara* (various procedures)

are important tools. The *Samskara* is defined as a method with which one property of a substance is converted in to other property³. *Bhavana* is a sub type of *Samskara*.

MATERIAL AND METHODS**Description of Bhavana**

Bhavana is defined as a procedure in which the powder drugs are mixed with some specific liquids and are triturated to dry them⁴. In this the raw material will be taken in powder form which is called as *Bhavaya Dravya* and the liquid which is used along with is called as *Bhavana-Dravya*. *Khalvayantra* (pestle & mortar)

made up of stone or porcelain is ideally used for trituration.

Bhavana is also explained as a procedure of soaking the *Churna* (powders) with liquid overnight and triturate in day time in the presence of sunlight⁵. The *Bhavana* of a substance with its *Swarasa* (expressed juice) or *Kashaya* (decoction) helps in potentiating the substance which shows desired result in reduced dosage⁶.

The ideal quantity of *Bhavana-dravya* is mentioned as that which is sufficient to make the powder drug moist⁷ /homogenous⁸/ submerged⁹ with *Bhavana-dravya*.

The ideal parameters of *Bhavana* are termed as *Subhavita Lakshana*¹⁰. The substance after *Bhavana* will be able to be rolled in between fingers without being sticky. There will not be any cracks produced on outer surface when the rolled paste is pressed in between the fingers. These features are suggestive of *Subhavita lakshana*. If the paste is sticky, watery or produces cracks on pressing between the fingers it indicates that the *Bhavana* is to be continued.

Authoritative books of *Ayurveda* do not advocate *Bhavana* in rainy season, whereas winter and summer season are suitable. This may be probably because of the presence of the moisture in atmosphere during rainy season. If the duration of *Bhavana* is not specified, it can be continued up to seven days¹¹.

Mechanism of Bhavana

By the process *Bhavana* the *Bhavya dravya* loses the molecular cohesiveness and breaks into fine particles. This is because of rubbing action and the pressure applied during the process. The materials will be rubbed between the rough surface of mortar and pestle which leads to

attrition of substance which helps them to break down into smaller particles¹².

The continuous movement of pestle on hard surface also helps in adding the pressure on the substance. The weight of the pestle with the vibratory movement will further enhance breakdown of molecules.

Significance of Bhavana

The toxic effects if any, in a *Bhavyadravya* will be neutralized because of influence of *Bhavana dravya*. Therefore, selection of *Bhavana dravya* has an important role, in reducing the impurities/ toxic effects of the substance¹³. *Bhavana* makes the drug easily digestible and assimilable¹⁴. Completion of *Bhavana* results in smoothness of the drug leading to non irritability¹⁵.

Usually metals and minerals are processed with help of *Bhavana*. The addition of *Swarasa*, *Kashaya* or water helps in easy grinding of hard drug materials specially metals and minerals. The vegetable-drugs in the form of decoction or juice impart their own therapeutic effects to these metals during processing¹⁶.

The mineral raw materials need to be processed before internal use to make them absorbable and digestible¹⁷. Total outcome of *Bhavana* depends on number of factors like *Bhavanadravya*, *Bhavya dravya*, *Bhavana vidhi*, Number and duration of *Bhavana* and *Subhavita Lakshana*.

OBSERVATION

The process of *Bhavana* is seen in many contexts in the books of *Ayurveda*. Its role and significance varies according to the context of its use. The different perspectives of *Bhavana* are shown in Table no 1

Table 1: Role of Bhavana in Rasoushadhi as per different context

S.N	Context	Example
01	Shodhana	Hingulashodhana – Ardrakaswarasa Bhavana- 7 times ¹⁸
02	Marana	Abhrakamarana – Bhavanawith 64 dravadravya 17 times each ¹⁹
03	Amritikarana	Tamra Amritikarana- Bhavana with Nimbu Swarasa ²⁰
04	Lohitikarana	Abhraka Lohitikarana- Bhavanawith Nagabalaswarasa, Musta, Vatadugdha, Vatamula, Haridra, Manjistha ²¹
05	Satwapatana	AbhrakaSatwapatana– by Bhavana withMusali swarasa ²²
06	PishtiNirmana	Manikyapishti- Bhavanawith GulabJala ²³
07	Parpatikalpana	Rasa parpati- Gandhakashodhana by giving Bhavana with Bhringrajaswarasa as purvakarma ²⁴
08	Kupipakva-Rasayana	Rasasindura - Bhavana of Kajjaliwith Vatankura swarasa ²⁵
09	PottaliRasayana	Hemagarbhapottali -Bhavana of Kajjali with Nirgundi or Dhatturaswarasa ²⁶
10	Khara-leeyaRasayana	Sootashekhara Rasa -Bhavana with Bhringrajaswarasa ²⁷

DISCUSSION

Bhavana of a raw material with specific liquid needs a special emphasis as it has an ability to alter the original properties of a substance. At specific instances it adds some special properties without altering the original properties. Hence, the final result of *Bhavana* depends on the specific purpose.

Role of *Bhavana* in *Shodhana*

Shodhana is a process of removal or destruction of impurities of a raw material. The process of *Shodhana* requires a special and specific attention as far as the Mineral medicines are concerned. Many minerals are processed with *Bhavana* for their purification. It is hypothetically believed that the *Bhavana dravya* acts as an antagonistic to the *Bhavya dravya* thereby destroying or neutralizing the toxic properties of a raw material. Further there will be addition of organic compounds to the mineral in process leading to potentiation²⁸. This phenomenon helps in removing the soluble impurities and addition of use-

ful material to the drug. This could be detected with chromatographic studies.²⁹

Role of *Bhavana* in *Marana*

Marana is a process of incineration of a mineral there by making the final product (Bhasma) bio-available. The process of *Bhavana* is essentially required as a *poorvakarma* (pre requisite) for *Marana*. The process of continuous grinding makes a mineral substance to become soft, fine and exposing the mineral for greater surface area. The organic residue of *Bhavanadravya* acts as a catalyst for the process of *Marana* and there will be addition of few trace elements from herbal juice³⁰. In a research study done on *Yashadabhasma* prepared by *Bhavana* with *Kumari Swarasa*, it is found that the *Yashadabhasma* has the presence of Mg(1.000020ppm), Cu, Co and Mn<0.5ppm which was added from the herbal source³¹. The site of action of *Bhasma* also will be dependent on the *Bhavanadravya* used³².

Due to repeated *Bhavana* used before every *Puti* (unit of heat), there will be the exposure of the un-reacted particles to

more interaction with herbal compounds. This is to further help in complete conversion and enhancement of therapeutic potential.

It is hypothetically opined that, Sodium silicate present in *Abhraka* imparts some lustre to it. Most probably by repeated levigation before *Putra* process a part of it will be converted into sodium sulphate which helps in making silicate into soluble form. This is how the *Chandrataof Abharakabhasma* is reduced³³.

Role of Bhavana in Amritikarana

The *Bhasma* (Ash) obtained from the process of *Marana* is further detoxified by *Bhavana* process as it infuses active principles of *Bhavanadravya* to it. This increases the bioavailability of *Bhasma* and makes it more suitable for internal use.³⁴

Role of Bhavanain Lohitkarana

Lohitkarana is a process of giving colour to the *Bhasma*. The literatures of *Ayurveda* have guidelines given for identification of a *Bhasma* based on its color. Hence having proper color is an essential requirement of a *Bhasma*.

For *Lohitkarana*, the coloring agents are augmented to the *Bhasma* with the help of *Bhavana*³⁵. Ex. usage of *Raktavargadravya kashaya* like *Manjisthakashaya* imparts brick red color to *Abharakabhasma*.³⁶

Role of Bhavanain Satwapatana

Every mineral will have one or more metals as elements in the chemical composition. Extraction of an element from the mineral is termed as *Satwapatana*. In this process *Bhavana* acts as destructor of bondage between a cation and anion³⁷.

Role of Bhavanain other Formulations (Rasayoga)

Bhavanais also an important step in the preparation of the formulations like *Parpati*, *Pottali*, *Koopipakva* and *Khara-leeyarasayana*. Even though *Bhavana* has

no direct role to play in former three varieties of preparations, it has a direct role in last one. Efficacy of the final product however directly depends on nature, number and duration of *Bhavana*. Probably the process of *Bhavana* imparts the properties of each *Bhavanadravya* into the final product and enhances the potency. This further helps in reducing the dosage. It also increases the shelf life of final product. It is observed that increase in number of *Bhavana* increases the efficacy and reduces dosage³⁸.

As per a research study conducted on *Dhatrilauha* prepared with different duration of *Bhavana* revealed that the *Dhatrilauha* with maximum *Bhavana* contains maximum amount of berberine better in comparison with other samples. SEM-EDAX (scanning electron microscope-energy dispersive X ray spectroscopy) analysis indicates iron in all samples. Quantity of zinc was found to be maximum in *Dhatrilauha* with more number of *Bhavana* (5.39%) which seems to be added contribution of *Guduchikashaya* (*Bhavanadravya*)³⁹.

In another research work on *Shilagarbhapottali*, increased percentage of calcium, potassium and magnesium was seen, which may be due to the role of *Ardraka* and *Kumariswarasa Bhavana* done to *Kajjali* before *Pottali* preparation, in which both juices have these elements in large quantities⁴⁰.

CONCLUSION

The role of *Bhavana* on *Rasoushadhi* could be,

- Essentially, it is a *Samskara* which alters the original properties of raw material and induces the new properties into the main drugs through the various liquids (extracts and juices) which act as catalysts to direct the alchemical transformation of original ingredients.

- It leads to possible formation of organo-metallic compounds and converts heterogeneous form into homogeneous form, macro to micro form, rough to smooth form of drugs.
- It is an important procedure in *Shodhana*, *Marana*, *Amritikarana*, *Satvapata*, *Lohitikarana* and preparation of other *Rasayoga*.
- This process of impregnation helps in reducing the particle size of the drugs thus increasing their capacity for absorption into the system.
- The *Bhavana* with specific organic liquid helps to induce trace elements in the *Bhasma* and to target it on a particular site of action.

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