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PRODUCT USABILITY OF UTENSILS USED IN NASYA KARMA OF SRI LANKAN INDIGENOUS MEDICINE; WITH SPECIAL REFERENCE TO THE GOKARNA YANTRA

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Abstract

The practice of Sri Lankan Indigenous Medicine is highly acknowledged for its many special benefits with respect to Allopathic (Western) medicine. It is a system of medicine that has one main target; to cure an illness not just temporarily, but from its root itself. Each treatment process has its own unique procedure to follow- from the material (herb) used to its method of preparation to its consumption. But since the knowledge of Sri Lankan indigenous medicine was mainly handed down from generation to generation while jealously guarded from other practitioners, with the decline of certain ancestries, their secret ingredients have sometimes failed to be passed on. One such component lacking information is the usage of containers and utensils. The design of medicinal containers and utensils is an area which needs a special focus, since it deals with many aspects with regard to the human. While the main focus of producers of medical equipment would be the material usage, chemical reactions and enhancement of the medical value, a very important area that is seldom discussed is the product experience and psychology of the user. While the indigenous medical practitioners of Sri Lanka do not appear to have paid conscious attention to the usability of a product, they have been able to last through centuries and also attract a large group of patients, irrespective of the utensils used. This is commonly seen in Panchakarma treatments, especially Nasya Karma (Nasal Instillation). This research aimed to understand the thinking and rationale behind the designing and choosing of the utensils in Sri Lankan Nasya Karma and analyze the product psychology and usability aspects in them. The Gokarna Yatra used in Nasya Karma is using both physical and psychological data collected through both quantitative and qualitative methods. The ancient Gokarna Yantra displayed at National Museums in Sri Lanka and those hereditarily used by current practitioners were analyzed during the study. These objects were analyzed in terms of their physical factors under the Form and Aesthetics. The human factors of the products were analyzed under the Attribution of Meaning and Emotional Responses.

Keywords: *Product Psychology, Product Usability, Design Considerations, Nasya Utensils, Sri Lankan Indigenous Medicine*

1. Introduction

Since ancient times, man has had the practice of finding objects and products to support their tasks. As a result, many inventions were made, bettering and quickening their day-to-day activities. These products have gone through many changes with the times, cultures, knowledge, availability of material and preferences. Therefore, it can be observed that human-product interaction has existed since ancient times.

Today, product design is a process that is taught at design schools. Products are designed based on research on user needs, and enriched by knowledge in design, technology, science, etc. Therefore, most modern product designs are successful in the case of customer satisfaction and in sustaining in the market. But observation and research show that products that have been created and used long before the birth of design schools have extremely successful and satisfactory characteristics too. These products have not only fulfilled man's purposes successfully, but also managed to remain for a long time throughout history. How ancient people or 'designers' obtained this level of customer satisfaction remains a mystery, and therefore several researches have been conducted to understand the design

thinking behind some of these products. One such field where ancient products have sustained for a long time is the field of medicine.

Medicine is the practice of diagnosing, treating and preventing of disease (Definition of Medicine and Clinical Practice, 2005). It involves a variety of health care related practices that involve ways of maintaining and restoring health, by preventing and treating disease. The field of medicine has gained utmost importance in every culture and society since the most ancient times. It has existed for over a thousand years; not necessarily as a form of science, but often at least as a form of art, religion or philosophical culture. The medicine that was born before scientific involvement is generally known as traditional medicine, indigenous medicine or folk medicine.

Each country and culture have their own approaches to medicine, whether mixed with other practices or independently formed. Research has shown that Sri Lanka too has a history of powerful and highly admired medicinal practices. Created and shaped with our indigenous knowledge and the availability of materials, and then adapted and reformed with the influence of other cultural integrities, Sri Lanka's indigenous medicine comes a long way in history (Uragoda C. G., 1986).

Although the currently dominant medical system in Sri Lanka is Allopathic (Western) medicine, Indigenous medicine like Ayurveda is also practiced widely around the country, gaining good recognition. While Allopathic medicine is known to give quick and satisfactory results, it is a common belief acknowledged among Sri Lankans that our Indigenous medicine can cure most diseases and ailments to its core (Times, 2016). It is often heard that where certain Western medications failed, our indigenous medicine has been known to cure certain illnesses. Thus, even with the embracement of Allopathic medicine, we can see an increasing tendency to go back to Indigenous medical solutions, especially among people of the older generations.

This paper aims to discuss the background of the field of Indigenous Medicine in Sri Lanka, the importance of conducting research and recording the information, before the complete dissolution of the system, and to discover the reasons behind the sustainability of the products related to Sri Lankan Indigenous Medicine.

There is hardly any information available on the state of medicine in the pre-historic times of Sri Lanka, but there are several implications available in Folk stories that have been recited over the generations. One such important story in Sri Lanka is that of the pre-historic Sri Lankan king, Ravana. It is traditionally believed that King Ravana, of the famous tale of Ramayana, was well versed in medical lore. Some versions of this folk story mention that he represented Sri Lanka at a medical conference in India, and it was during this that he met the beautiful princess Seetha, which led to the first Indo-Sri Lankan conflict. Ravana is also believed to have been the author of several books on medicine, namely Arkaprakasaya, Nadvignanaya, Kumarathantraya, and Udishasathraya. (DeSilva P. L., 2006; Uragoda C. G., 1987).

The most recorded stage of history in Sri Lanka that has information on medicinal practices is the period under royal patronage. Information on the monarchy period of Sri Lanka is available in Rock Inscriptions, books like the Mahawamsa and traditional stories. These information states that during this period, the King of the country was also compulsorily a physician. The main examples are stories on King Dutugemunu (161-137BC), King Lajjatissa (119109BC), King Walagamba (89-77AD), King Kashyapa IV (912-929 DC) and King Parakramabhahu II (Ramanayake, 2016; Samara, 2008; DeSilva P. L., 2006; Uragoda C. G., 1987). Up until the 13th Century BC, Indigenous medicine of Sri Lanka has flourished under the royal patronage. The knowledge and practice of Sri Lankan medicine was known to have declined only with the impact of colonial domination. (Importance of Research in Ayurvedic Medicine; DeSilva P. L., 2006; Uragoda C. G., 1986).

Indigenous medicinal practices of Sri Lanka consist of four main sub-categories: Deshiya Chikitsa, Ayurveda, Siddha and Unani medicine. While different families originally practiced different medicine, with time these practices have diffused to form a set of merged medicinal practices. Though they are of various origins, they all had one target; to cure an illness not just temporarily, but from its root itself.

((Deraniyagala, 1953; E Heinz; Muller-Dietz, 1975; Johnston, 1827; Ismail, 1985; Uragoda C. G., 1986; Uragoda C. G., 1987; DeSilva P. L., 2006; Samara, 2008). Therefore for further purposes, the combined practice of traditional medicine in Sri Lanka will be referred by the name 'Ayurveda' in the research.

One main area of treating the body in Sri Lankan Ayurvedic practices, is the practice of 'Panchakarma Treatments'. Panchakarma is a purification therapy used in Ayurvedic medicine. "Pancha" means five and "karma" means treatment; the word panchakarma means five actions or procedures intended to intensively cleanse and restore balance to the body, mind, and emotions. It is a detoxification treatment involving massage, herbal therapy, and other procedures. It is done in the aim of detoxifying the body or "eliminating the vitiated Doshas" from the body. The five branches of Panchakarma are Vamana (Emesis), Virechana (Purgation), Niroohavasti (Decoction Enema), Nasya (Nasal Instillation) and Anuvasanavasti (Oil Enema). (Tiwari, 1998; Archana Singh Vishen; Meenakshi; Uttamkumar Sharma; Brijendra Singh Tomar, 2017). This paper will be discussing the utensils used in one of the above therapies; Nasya Karma (Nasal Instillation of Medicine) in Sri Lankan Traditional Medicine.

2. *Nasya Karma* and the Utensils Associated with Its Practices

Nasya is a treatment in which herbal extracts in the forms of juice, powder or pastes are administrated through the nose, typically to promote the relaxation and cleansing of the nasal cavities. Since the nose is considered the direct path to the head, it is considered to be one of the quickest and most effective methods of treatment, especially for many kinds of headaches, paralysis, mental disorders, some kinds of sinusitis, migraine catarrh and epilepsy. (Tiwari, 1998; Ayurvedic, 2014; Siddhalepa, 2018; Brihami, 2018). As a method of treatment which makes use of almost every form of medication in Ayurvedic practices- juice, powder, paste, etc- Nasya Karma requires the use of many utensils for different purposes.

As a treatment that involves direct interaction of medicine with the nose and head, Nasya treatments require great attention to precision and detail. While proper treatment can give miraculous results, a small mistake may be enough to trigger large complications such as Coma, Paralysis or even Death. (Martand, 2018; Siddhalepa, 2018) Therefore, while only highly experienced practitioners conducted these treatments since history, utensils were required based on precision and high usability. Though a wide range of utensils are believed to have been used for Nasya Karma by ancient practitioners, there are very few that can be found in current practices. The usage of these utensils in the beginning may have been influenced by the social status, cultural beliefs, availability of material, availability and knowledge on crafting skills, specialty of the practitioner, geographic locations and limitations, etc. While no scholarly accepted categorization is available for the utensils used for Nasya treatments, this research uses an author-defined classification based on the form of treatment, developed with the support of current practitioners of Indigenous Medicine in Sri Lanka.

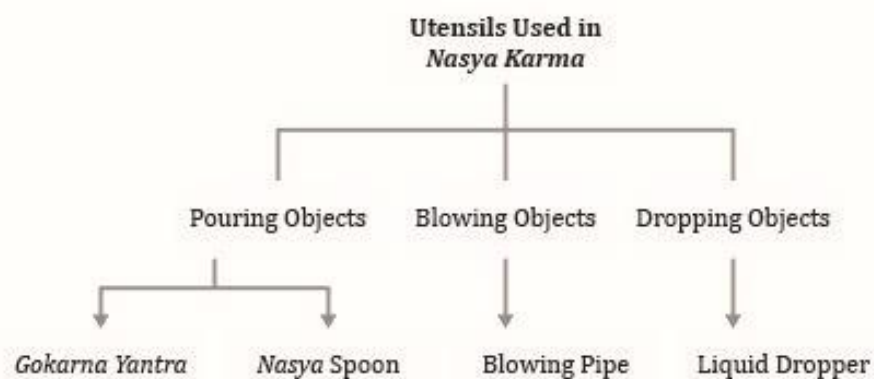


Figure 1: Classification of Nasya Utensils (Author's Creation)

Based on the above classification, objects were collected from Sri Lankan National Museums and current practitioners of Indigenous Medicine. Based on the availability of sources, the preferences of the interviewed practitioners & patients, the *Gokarna Yantra* will be discussed in this paper.

2.1. Users of *Nasya Upakarana*

Since this research is based on a Usability Analysis, the other main component to be considered is the User of the Product. While the general user of all Indigenous Medicinal Utensils is the Veda Mahattaya (Traditional Doctor), *Nasya* objects have another special feature; it has two main groups of users. As a group of utensils that directly interact with the patient, the patient too must be considered a User of the products. Sri Lankan Ayurveda practices have been successful in upholding a high reputation for hundreds of years. Even today, there are numerous cases where people are known to have obtained unbelievable results through Ayurvedic treatments, whenever Western medicine has failed. These cases of astonishing treatments have also been supported by the unbreakable reputation upheld by the Sinhala Veda Mahattaya (Sinhala Doctor) since ancient times.

2.1.1 Veda Mahattaya (Traditional Doctor)- User Group 01

An incomparably prestigious position in the ancient Sri Lankan society, the Veda Mahattaya (Traditional Doctor) has always been considered a miracle-worker. He was known to walk everywhere with his Beheth pettiya (Medicine casket), in case he met someone on the way who needed his help. Placed in a hierarchical position only second to the King and his immediate team, the Veda Mahattaya has been a status that was mainly powered by the blood line. The status of the Veda was handed down from one generation to the next, generating a competition between different teachings, based on the unique treatment techniques and specialties. Therefore, most knowledge were only passed down from father to son, and sometimes with the end of a bloodline, some knowledge have ceased to exist. Currently there are very few Veda Mahattayas who practice medicine as passed on by older generations, while there are new practitioners who have studied the teachings of modern Ayurveda, introduced essentially by India.

2.1.2 Patients- User Group 02

The patients of Indigenous Medicine in history would have been the general public, who sought advice and treatment from the Veda Mahattaya whenever needed. The doctor would have been chosen either as nearest to the occasion or in a habitual process (similar to the concept of the ‘family doctor’). Currently, patients of Indigenous Medicine are mainly under several categories; the elderly who are habitual patients and their younger

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generations, friends advised by satisfied patients, patients seeking options after the fail of Western medical treatments, etc.

2.2 Method of Analysis

The sample group for observation and interviews were selected based on the above two user groups (as discussed in 3.2). The data gathered from these interviews and observation were organized based on an author-developed framework, for the benefit of analysis. The framework was developed based on the studies and classifications discussed in Desmet, Hekkert (2007) and Desmet (2010). As discussed in 2.4.1 and 2.4.2, the various classifications of Usability, Product Emotion, and User-Product Interaction were considered, and the path to a “good product experience” was categorized under three main stages as:

1. Form and the Aesthetics
2. Attribution of Meaning
3. Emotional Response and Pleasantness

The Usability and Experience of a product will be analyzed individually in this research by considering each of the three stages mentioned above. The balanced experience of all three stages would be the perfect experience as shown in Figure 2 below:

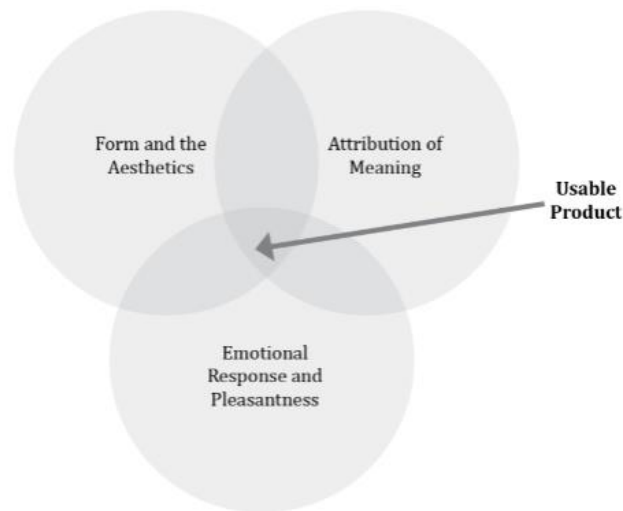


Figure 64: Framework of Product Usability Analysis (Author's Creation)

3. Gokarna Yantra

The Gokarna Yantra is a small oil lamp like structure, with a relatively long handle and an elongated pour spout. The bulbous body of the object holds the medicine inside, while the spout which extends from the body controls the flow of liquid. It is a hand-held device with a handle with several variations. The name Gokarna Yantra has been derived from the words 'Gona' (Bull) + 'Ana' (Horn), meaning bulls horn (Samarakoon, 2018). This name is believed to have been originated from the shape of the product, which is basically similar to the shape of the horn of a bull. In certain contexts, the Gokarna Yantra is also referred by the name 'Nasya Patra' (Indiamart, 2018).

The Gokarna Yantra is mainly used to pour oils, herbal extracts and other liquid medicines into the nose: "Then the physician lifted the tip of the nose of the patient with fore-finger of his left hand and 4 Bindu (240µl, i.e. 0.24 ml) of Lakshyadi Taila was slowly poured stream like a manner into the patients each nostril by Gokarna Yantra with his right hand, patient asked to snuff the medicine, care was taken that the medicine would not get into the eyes during the Nasyavidhi." (Martand, 2018).

The Gokarna Yantra is intended to be used for one nostril at a time (Nair, 2010; Martand, 2018). It has been initially made of Brass or other rich metals, with decorations and details finely crafted. Currently, the type of Gokarna Yantra found among practitioners is a simpler form made of brass, mostly imported from India.

There are several variations of the Gokarna Yantra used by different practitioners. Some have very unique features and are highly crafted, which may be to depict the social status maintained by the practitioner and also because they are made for personal use only. The more modern versions of the Gokarna Yantra are simpler in form and appear to have been made considering mass production, in all aspects including material, weight, size, etc.



Figure 65: The decorative Gokarna Yantra displayed at the Koggala Martin Wickramasinghe Museum (© Martin Wickramasinghe Trust Fund, 2018)



Figure 66: The Nasya Patra imported to Sri Lankan Ayurvedic practitioners
(Source: <https://www.indiamart.com/superfinebrasshouse/brass-nasya-patra.html>)

3.1. Form & Aesthetics

The Gokarna Yantra is typically used for pouring oil and medical extracts into the nose, by holding onto the stem/handle and letting the liquid drip along the long spout into the nose. Therefore, the basic requirements of a product for this purpose are the spout, handle and body of the product. In some cases, a foot/base also is available.

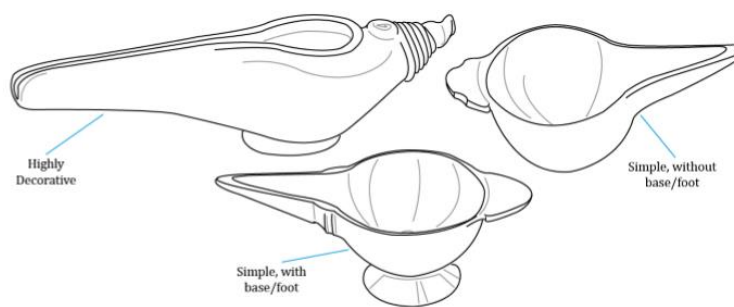


Figure 67: Basic Variations of Form (Source: Author)

There are many variations of the Gokarna Yantra, but for the purpose of easy analysis, the many variations were grouped under the two types; the highly decorative object displayed at the Koggala Martin Wickramasinghe National Museum and the simple and flat-topped objects used by current practitioners and Ayurvedic spas- with a base or without a base (as shown in Figure 5 above). The following speculations and analysis will be based on these two types.

3.1.1 Handle

The handle of the Gokarna Yantra is generally held between two or three fingers. Sometimes the other fingers are used for support, but the basic grip is powered by the thumb, index finger and sometimes the middle finger too. The shape of the handle is usually a form developed from a basic cone or disk.

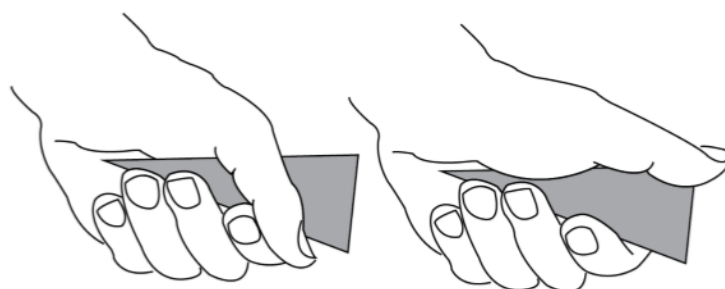


Figure 68: Basic Power Grip Applied on a Conical Handle (Source: Author)

The conical handle was found only in the most ancient Gokarna Yantra which is believed to have belonged to the 6th Century, displayed at the Koggala Martin Wickramasinghe Museum. The conical handle helps to keep a firm power grip on the object, preventing slipping and enhancing precision during usage. This may have been due to the hurry of the doctor, who rarely used support from another person during treatments, and needed a firm grip on one hand while he conducted other treatments with the other hand.

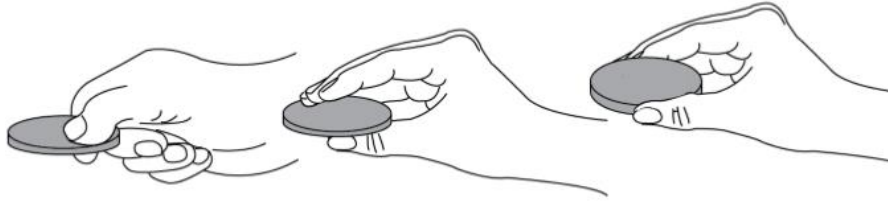


Figure 69: Basic Pinch Grip Applied on a Disk-like Handle (Source: Author)

3.1.2 Spout

The spout of almost every Gokarna Yantra is similar to each other, varying slightly for example by the open angle at the tip. Basically, having a conical or semi-conical form, the spout is designed to gradually decrease the flow of liquid to drip in the form of droplets. Since the amount of medicine is measured by droplets, it is important that the liquid flow is controlled. This is obtained by the gradual decrease of circumference of the cone, starting from the body of the object to the tip.

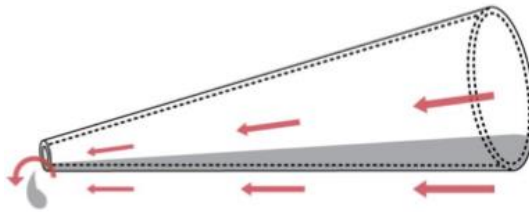


Figure 70: Liquid Flow from Conical Spout (Source: Author)

Since the liquid in the Gokarna Yantra is used by slightly tipping the object when needed, the angle of tipping too may affect the control of liquid flow. While there are no defined standards for the angles for tipping the Gokarna Yantra during use, the main variations of the spout that can be observed are the angle of the opening at the tip. The tip of the conical shaped spout in complete form would be a hollow cylindrical form. But every Gokarna Yantra uses the spout without the part of this form. The main variation that can be observed in the Gokarna Yantra that were analysed were in the angle of opening. The oldest Gokarna Yantra had smaller openings (higher degree of the tip is available). With the limited amount of liquid stored in this object, a reasoning is unclear for using a small opening, except for the possibility of considering the aesthetic factor (Figure 9).

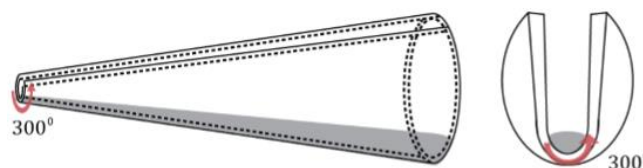


Figure 71: Spout of the Gokarna Yantra at the Koggala Martin Wickramasinghe Museum (Source: Author)

The newer versions had higher openings, making it an exact semi-conical form. This too may have been due to the aesthetic factor, since the body of the object too is a definite hemisphere, but it also may have been to reduce the material usage. This conclusion can be drawn with the tendency of the modern

versions to consider mass production. Since very little liquid will be available in the space, it could be believed that the modern versions have used a form which uses the minimal amount of material to serve the purpose (Figure 10).

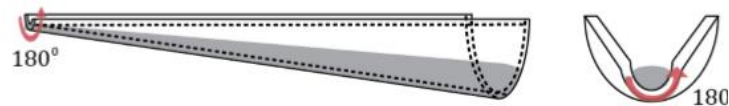


Figure 72: Spout of a Modern Gokarna Yantra (Source: Author)

3.1.3 Detailing

Other than the above discussed parts of the *Gokarna Yantra*, there are small details of the product that have been used to enhance the functionality of it. Some of these details are not common to one another, and therefore cannot be compared. Some examples of such details are the foot/base of the object, mouth of the object, decorative elements, etc.

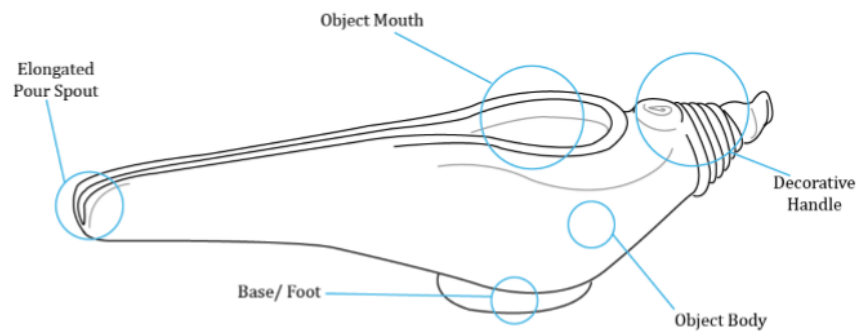


Figure 11: Parts of the Gokarna Yantra displayed at the Koggala Martin Wickramasinghe Museum (Source: Author)

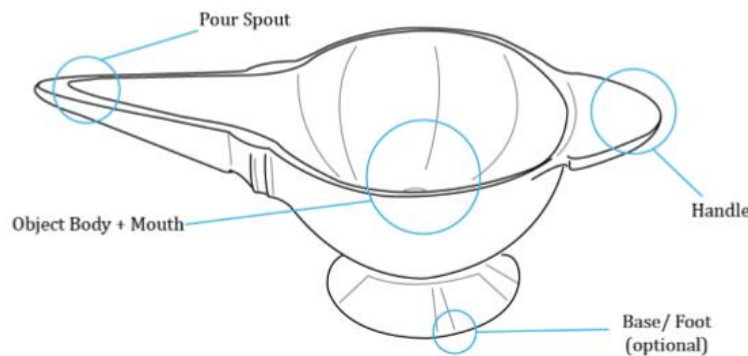


Figure 12: Parts of a Modern Gokarna Yantra (Source: Author)

3.1.4 Base/ Foot

The base of the *Gokarna Yantra* is an optional feature, since it is not compulsory to the main function of the product. But 80% of the *Gokarna Yantra* that were observed in this research had a foot. While the most general reasoning for having a foot is that it was intended to be placed erect on a flat surface, several interviewees had more diverse opinions. One such reasoning is that it would optimize the time spent, by being able to quickly place it on the table before and after use when switching between tasks. Another believed it was to balance the liquid inside naturally to avoid spillage.

3.1.5 Object Body & Mouth

All *Gokarna Yantras* have an open mouth with no lid. This may be because it is used once per treatment and has no requirement to store the liquid within before or after. The proportion of the object body that is open as its mouth may vary, according to the shape of the object. The ancient *Gokarna Yantra* of the Koggala Martin Wickramasinghe Museum has a comparatively smaller opening as the object mouth. With its unique body form and great attention paid to decorative elements, it may be due to aesthetical reasons, since there is a big unused space of the object body once liquid is poured to its maximum level.

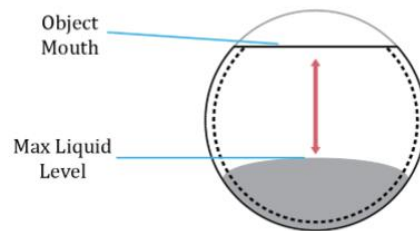


Figure 13: Object body & Mouth of Ancient Gokarna Yantra (Source: Author)

The mouth of the modern Gokarna Yantra is placed much lower than the older one. Once liquid is poured to its maximum level, the gap between the object mouth and the liquid is very low, thereby wasting very little space. With its simple and minimalistic design, it could be derived that the object mouth is placed in such a way that the maximum space is utilized by a minimal design.

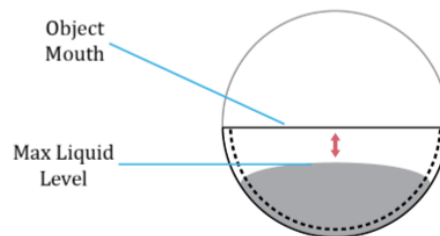


Figure 14: Object body & Mouth of Modern Gokarna Yantra (Source: Author)

3.1.6 Decorative Elements

In general, the *Gokarna Yantra* is a very aesthetically designed object. Old or modern, the level of decoration may vary, but as a medical instrument, the *Gokarna Yantra* is relatively more aesthetically pleasing.

The ancient *Gokarna Yantra* of the Koggala museum can be observed to have paid higher attention to aesthetic detailing than the more modern ones. The basic form itself is more organic and feminine in its appearance. The use of material is almost similar, but in the ancient objects, the material is used in a denser form, giving it a more 'rich look'. The modern objects too are curvy and aesthetically pleasing for a medical instrument but are less dense in the use of material and much simpler.

While most parts of the *Gokarna Yantra* appear to simply have been aesthetically designed, when analysed further they appear to have more functional insights too. These will be discussed elaboratively in section 3.2.

3.2. Attribution of Meaning

As discussed in section 3.4.1, the *Gokarna Yantra* is an object which appears to have paid high attention to detailing. While some elements initially appear to be aesthetic details, when analyzed, they appear to have more space for functional interpretations. Figure 15 & Figure 16 show a general overview of few such details of the *Gokarna Yantra*.

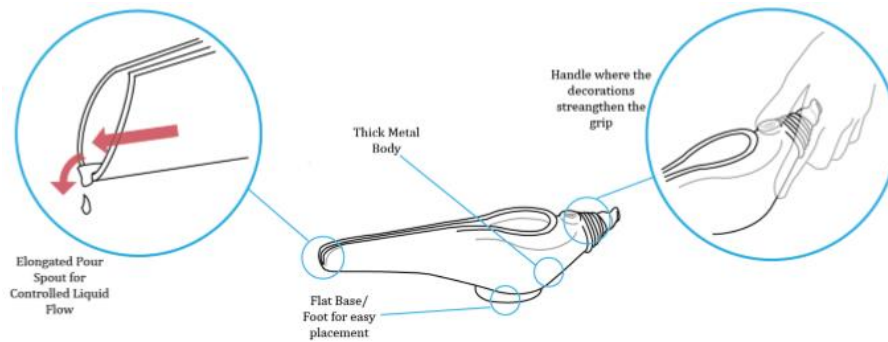


Figure 15: Aesthetic Detailing of the Ancient Gokarna Yantra (Source: Author)

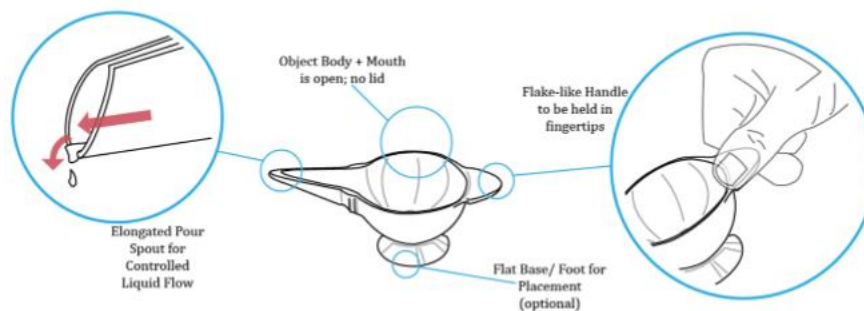


Figure 16: Aesthetic Detailing of the Modern Gokarna Yantra (Source: Author)

As a study on usability of these objects, it is of utmost importance to study the general semiotics of the objects. Even though the general usage of the *Gokarna Yantra* can be considered simple, it must be used with great precision. Therefore, each detail, aesthetic or not, must serve some functional purpose instead of distracting the user from its main objective. It can be said that in order to obtain the maximum efficiency of the product, the form and function both are equally important.

While most of the parts of the *Gokarna Yantra* were discussed earlier under section 3.1, this section would pay more attention to the different interpretations that can be made of the different parts of the object.

3.2.1 Method of Holding

During the series of interviews and observations conducted in this research, the first group of interviewees (doctors/practitioners) were requested to hold the two types of *Gokarna Yantra* (Figure 5). 35% of the interviewees had never used a *Gokarna Yantra* before; they sought to modern alternatives like the rubber suction dropper used in Western medicine. No indication as to how it is held was mentioned, and the interviewees were expected to hold the object based on their observations, previous practices or guesses. There were several variations of the way these objects were held by different interviewees, and a basic summary is shown in Figure No. 17 below:

Whether they had used a *Gokarna Yantra* before or not, every interviewee experimented the way of holding the two objects by considering the method of usage; how the liquid is poured into the nostril. While the interpretations varied and overlapped in many cases, the most common variations are mentioned in Figure 17 above. The detailed variations of interpretations in different parts of the *Gokarna Yantra* are discussed in the following sections.

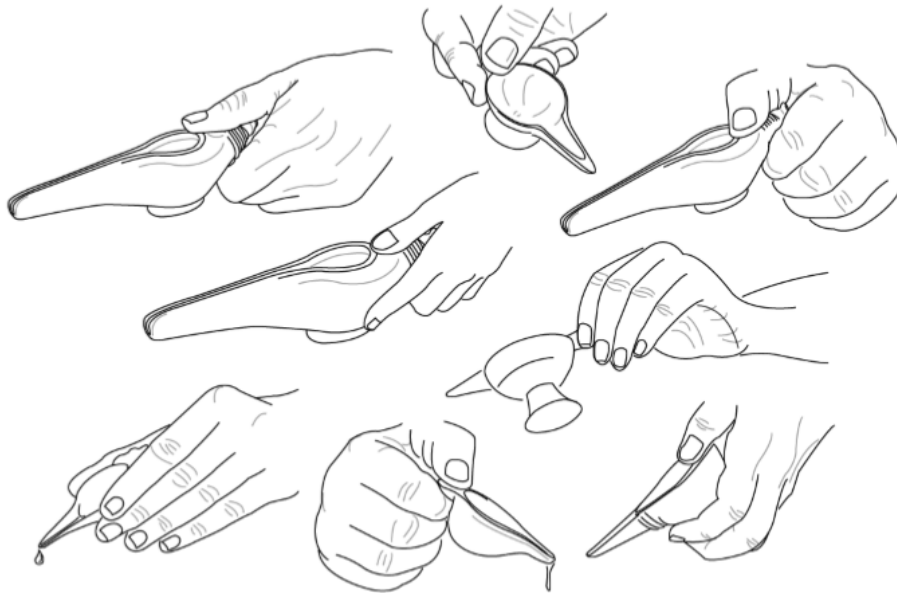


Figure 17: Different Ways of Holding the Gokarna Yantra (Source: Author)

3.2.2 Handle

The handle is the part where most of the variations in interpretations occurred. Since it is a hand-held device, the handle of the object plays a very important role in its optimum usage.

The general form and functionality of the handle of the *Gokarna Yantra* were discussed in section 3.4.1.1. This section pays attention to the variation of interpretations that can be made of the previously discussed handles, and its usefulness and rightfulness.

The handle of the ancient *Gokarna Yantra* displayed at the Koggala National Museum, as shown in Figure 6 is based on a conical form. But when higher attention is paid to detailing of the handle, the mid part of the conical shape appears to be formed out of small rings, gradually decreasing in diameter to form a cone. While this may have been simply for aesthetic reasons, 82% of the interviewees believed that it was for a better grip too:

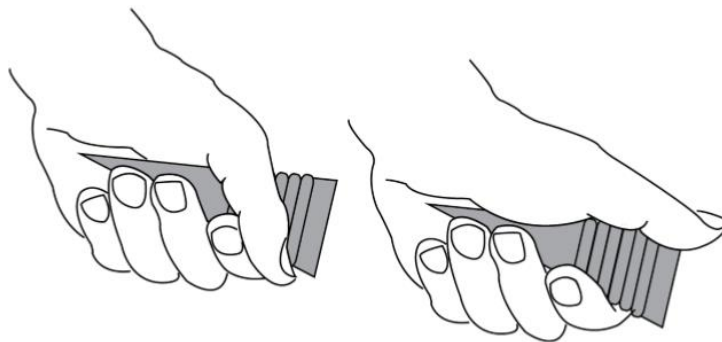


Figure 18: Actual Power Grip Applied on the Conical Handle (Source: Author)

As shown in the above Figure 18, when applying to the power grip discussed in Figure 6, the ring-like detailing appears to enhance the grip. Since the conical handle must be gripped tightly to avoid any slippage, the slight cuts formed by the ring-like features provide friction between the handle and the fingers. The points of contact made between the fingers and fractioned grip are almost full fingers, ensuring a very strong and powerful grip as shown in Figure 19:

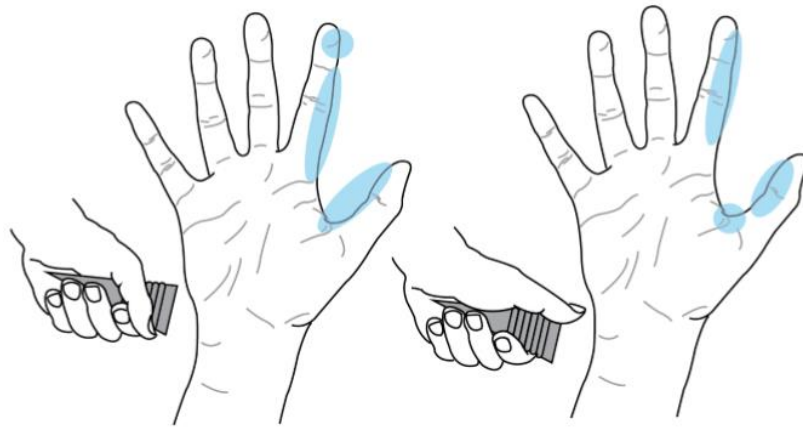


Figure 19: Points of Contact during Power Grip of Conical Handle (Source: Author)

The grip of the modern *Gokarna Yantra* too had a variation of interpretations related to the handle. Fabricated from a disk-like basic structure, there are several variations of the detailed handle. While some handles in plain view are an exact semi-circle, some have tiny organic shaped curves. During the interviews, the main observation was that the simple semi-circled handle was held vertically, and the handle with small cuts was held horizontally, by placing the thumb and index finger slightly pressing on the two cuts:



Figure 20: Actual Pinch Grip Applied on the Disk-like Handle (Source: Author)

Unlike in the old *Gokarna Yantra*, which requires a large area of contact in order to fasten the grip, the modern version has very few contact areas to be held steadily (Figure 21). The handle was often held using only the fingertips, even though there are no direct indications on the object to do so.

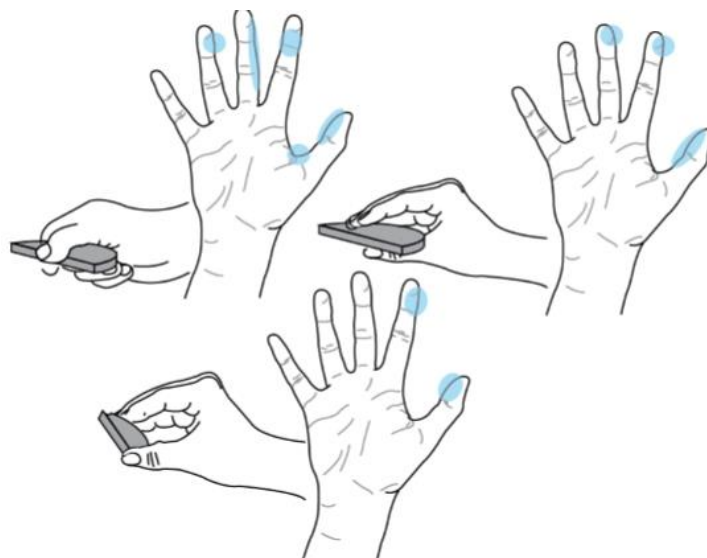


Figure 21: Points of Contact during Pinch Grip on Disk-like Handle (Source: Author)

3.2.3 Thumb Piece

While the entire object itself appears aesthetically designed, there are small parts that seemed to be placed with more than just aesthetic intentions. One such part is the small round part available near the largest ring of the handle of the ancient *Gokarna Yantra*. Another set of small rings merged vertically to form a small bump on the handle, 75% of the interviewees attributed its purpose as a thumb piece to tighten the grip. The ways of holding before emphasizing attention to this part varied in two ways:

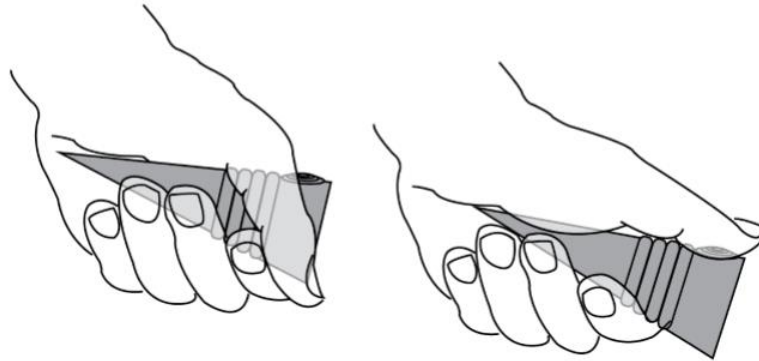


Figure 22: Different Interpretations of the Thumb Piece (Source: Author)

Both the above ways of holding the handle enhanced the grip, due to the position the 'thumb piece' was positioned. The thumb piece was generally positioned in a part of the hand that tightened the grip:

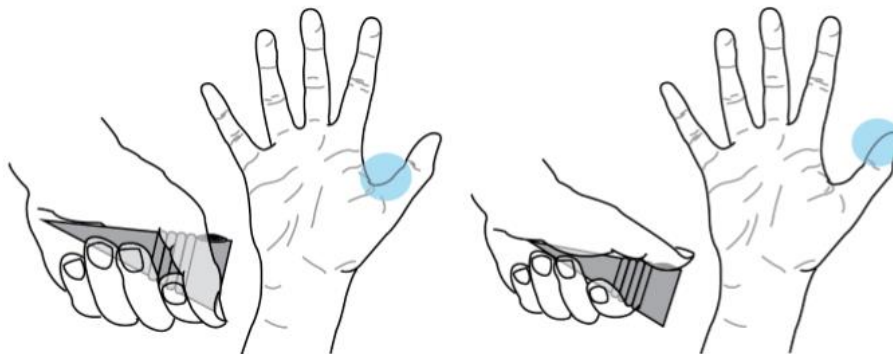


Figure 23: Pressure Points when Holding the 'Thumb Piece' (Source: Author)

3.3. Emotional Response & Pleasantness

As mentioned in Section 2.1, this research was based on two groups of users. In the three sections of analysis in this research, the 'Emotional Response and Pleasantness' is the only part where both user groups are taken into consideration.

The study of emotional levels of the users was based on the studies of Desmet (2010), Desmet P, Hekkert P (2007) and Jordan (1998). The study of the emotional response to a product is important since emotions are what bind or distance a user to/from the product's environment: "Emotions are functional, because they establish our position in our environment, pulling us toward certain people, objects, actions, and ideas, and pushing us away from others... This basic principle applies to all emotions; the intense emotion that we may experience in a situation that threatens basic survival needs and the subtle emotion that we may experience in response to human-product interaction. Pleasant emotions pull us to products that are (or promise to be) beneficial, whereas unpleasant emotions will push us from those that are (or promise to be) detrimental for our well-being... Appraisal is an evaluative process that serves to 'diagnose' whether a situation confronting an individual has adaptation relevance, and if it does, to identify the nature of that relevance and produce an appropriate emotional response to it" (Desmet P, Hekkert P. 2007. p61).

The above factors are equally applicable to medical instruments, since they interact directly with both groups of users and also are backed up with a psychological framework. The pleasantness or emotional stability of the user is highly important in medical equipment in both cases; to treat another using it or to be treated.

Emotional responses have no limit to their possibilities. But for the ease of analysis in this research, five emotional responses were selected for each user group, from the positive and negative manifestations of appraisal types introduced by Desmet (2010, p3):

User Group 01	User Group 02
1. Beneficial/ useless	1. Attractive/ unattractive
2. Effective/ineffective	2. Tolerable/ intolerable
3. Adequate/ inadequate	3. Trustworthy/ untrustworthy
4. Readable/ non-readable	4. Appealing/ appalling
5. Confident/ unconfident	5. Adaptable/ unadaptable

Figure 24: Selected Emotion Groups for Analysis of the Users

3.3.1 Emotional Response of the *Veda Mahattayas*

As the person who makes the first interaction with the product, the *Veda Mahattaya* plays a very important role in the functioning of the product. He is the one who must initially make an interaction with the product and understand how to use it and where. Therefore, the interview series was conducted in order to gather a rating of their emotional responses to the *Gokarna Yantra* based on the five emotions: *Beneficial/useless*, *Effective /ineffective*, *Adequate/inadequate*, *Readable/non-readable* and *Confident/non-confident*. The responses to the above emotional groups are not purely based on the product, but also has an effect from the experience and confidence of the user.

The user group ranged from using the product for the first time to experts in the area, and in this study group, 35% of the interviewees were first time users. The *Gokarna Yantra* was discussed here as a single object, without taking the variations into consideration. The data gathered from the users' responses are summarized under the following chart:

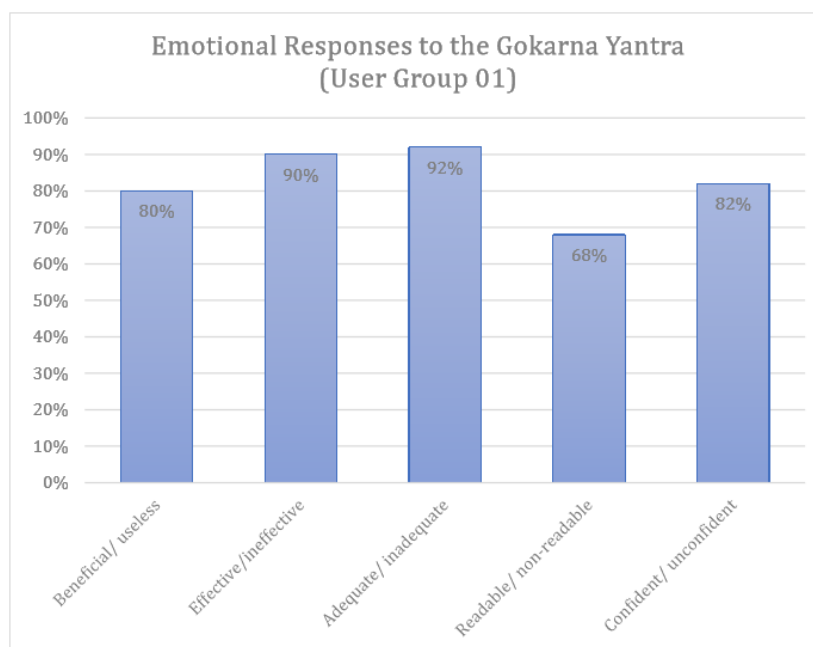


Figure 25: Emotional Responses to the Gokarna Yantra (User Group 01)

3.3.2 Emotional Response of the Patients

Having something dropped into your nose is an action that induces many reflex actions. Having oil dropped to your nose is even scarier. As the user group who must go through this stage during the treatment process, the emotional responses of the patients too are very important. The responses to the products are also influenced by the experience of the user, the trust he/she places on the doctor, and also his/her personal experiences.

The interviews conducted with the patients intended to gather their emotional responses to the *Gokarna Yantra* and analyzed in the form of ratings. The emotional responses were rated under five emotion groups: Attractive/unattractive, Tolerable/intolerable, Trustworthy/untrustworthy and Appealing/appalling, Adaptable/unadaptable. The analysis of the recordings is displayed in Figure 26 below:

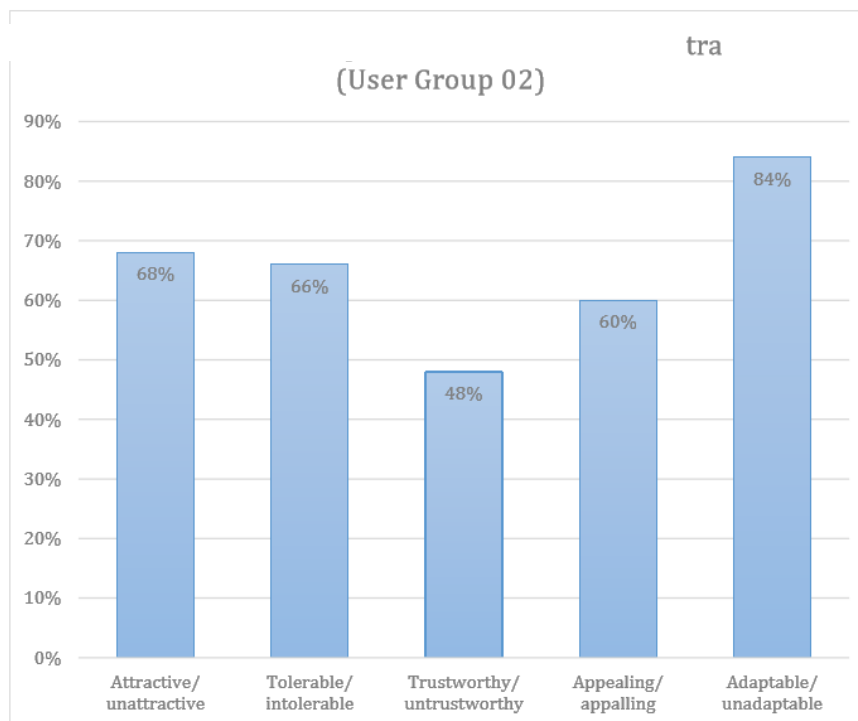


Figure 26: Emotional Responses to the Gokarna Yantra (User Group 02)

Conclusion

The Indigenous Medicine Practice of Sri Lanka has a powerful and rich history. As a knowledge system that is currently fading away with time, when looked into deeply, Sri Lanka's Traditional Medical system has great potential for future generations. This research addresses one such aspect of Sri Lankan Indigenous Medicine; the Usability of the utensils used, and the design considerations which have resulted in their continuation/discontinuation into the future.

Due to constraints in time and facilities, this research was limited to the instruments used for *Nasya Karma*, one of the most important treatment therapies in the modern-day context, due to the increased rate of patients suffering from stress, migraine, paralysis, etc. The *Nasya Karma* utensils were categorized by its function and the *Gokarna Yantra* was selected for analysis.

The *Gokarna Yantra* was analyzed under three main stages of the product experience; Form and Aesthetics, Attribution of Meaning and the Emotional Response and Pleasantness. Here, the Form and Aesthetics were studied to understand the basic physical aspects of the product, their parts and details. The Attribution of Meaning covered the semiotic aspects of the physical aspects discussed before; why they were placed in such a way and how they are intended to be used. The Emotional Response and

Pleasantness addressed the emotional and psychological responses of the users, and how the product's usability has helped in positioning it in the system.

The analysis of the products' physical aspects revealed that the products belonging to the most ancient times were highly crafted, with rich material usage, while the modern versions were more concerned with the ability to mass produce the objects. Therefore, the modern versions were simpler in design, cheaper and easy manufacturing material and techniques were used. The use of rich material and fine crafting in the products placed them in higher ratings of product experience, especially the practitioners, since they expressed a certain.

When Attributing Meanings to the products and their details, generally, the modern versions were simple in design, and therefore focused on only the main function. The older versions of the Nasya products had finely crafted detailing, which appeared to have deeper functional purposes in addition to their aesthetics.

The analysis of Emotional Responses and Usability of the *Nasya Upakarana* revealed that the doctors (practitioners) considered these products more usable than the patients. As a treatment method where the utensils used interact with both groups of users, the products revealed that the emotional responses of the patients were much more negative than those of the doctors.

As a social system where the knowledge was purely vernacular in origin, the average usability of *Nasya Upakarana* can be concluded as relatively high. This shows that our indigenous knowledge systems have great potential in providing knowledge that could be applied for better usable products in the future. The design aspects considered in building these products, even though originally intended for personal use, show that our ancestors were rich in knowledge and skill in creating highly usable product designs. While this research covers only the *Gokarna Yantra* used for *Nasya Karma*, this research itself is proof that there is fading knowledge in Sri Lanka that can be discovered and applied for products of the future.

As a designer, I believe it is essential that we unite to retrieve the traditional systems of knowledge that are gradually being forgotten due to Western influences, and uplift Sri Lanka's authentic values to build a better product design industry within the country.

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