



Review Article

## An Analytical Study of Bal-Sanskara W.S.R to Physio-Anatomical Changes for Assessment of Developmental Milestones

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### ABSTRACT

India has a prosperous cultural heritage in which *Acharyas* have developed such a pattern of lifestyle that is perpetual imperative. Every aspect has been related to service of almighty God so; that it is followed with great passion and indemnity. Hindu tradition describes various *Sanskara* (sacraments) outlined from birth to death of an individual. Out of the sixteen *Sanskara* described eight are for children. In *Ayurveda*, the word *Sanskara* is introduced as “*SamskaraohiGunaantradhyanam*” which means qualitative enhancement carried out by incorporating the precise qualities (transforming of the qualities).

Though principally considered as religious rites, they were significant in perspective of child health and provided chance for routine examination of growth and developmental milestones of child at regular intervals. In *Sanskara* ceremonies invitees are *Vaidya*, aged ones and other respective members of society, who were mature enough that they can examine the growth and development of child. A thorough review of childhood *Sanskara* reveals that they were aimed at preparing the baby for proper feeding habits, ensuring adequate nutrition, preventing diseases, adapting baby to environment, gave individual identity and educated the child. It took care of not only physical but also mental, social and spiritual development of child thus making him an individual of good moral fibre, who proves to be an asset to the humanity.

**Keywords:** *Bal-Sanskara, JataKarma, Annaprashan, Developmental Milestones*

### INTRODUCTION

*Ayurveda* is *Upveda* of *Atharvaveda*, which is “science of life”, describes the holistic approach towards life. Many principles of *Ayurveda* are related with religious rituals of ancient India. Ancient Hindu mythology describes sixteen *Sanskara* (religious rites) for a person sequentially; thus summarizing lifestyle to fulfil one’s role from the commencement to the end of life. In *Ayurveda*, the word

*Sanskara* is introduced as “*SamskaraohiGunaantradhyanam* [1]” which means qualitative enhancement carried out by incorporating the precise qualities (transforming of the qualities). *Sanskara* go a long way in fulfilling the four pursuit of life i.e. *Dharma* (righteousness), *Artha* (wealth), *Kama* (work and pleasure) and *Moksha* (salvation). [2]

Though principally considered as religious rites, they were relevant in context

of child health and provided opportunity for routine assessment of child at regular intervals. *Sanskara* ceremonies invite many persons including spiritual gurus, learned persons, elderly ones and other people which provide a great opportunity for them to get a look of child. [3] The learned one instantaneously notices any irregularity or lack in developmental milestone.

In matter of fact these milestones are principally anatomical and physiological developmental change signs. There are many anatomical changes occurring in neonate while coming from intrauterine life to extra uterine life, which are necessary for survival. These changes are in synchronized manner and are achieved within certain range of time period. *Sanskara* prepare one for the next stage of growth. Thus, a detailed study of the classical portrayal of *Sanskara* is obligatory to appreciate its significance in child health and its aptness in present era.

## MATERIALS AND METHODS

The literary material is collected from the various classical *Ayurvedic* text, contemporary Anatomy and Paediatrics texts, magazines and research journals. After going through classical description a scientific analysis on their anatomical and physiological development is undertaken. After which classical description is correlated with changes in developmental milestone as per contemporary texts. A table is prepared for easier understanding.

## LITERATURE REVIEW

The number of *Sanskara* varies in different Hindu religious texts; it is about 16-40.

- In *Grihya Sutra* there is mentioning of 18-21 *Sanskara*.
- In *Manusmriti*, 13
- In *Gautama Grihya Sutra*, 40
- The 16 *Sanskara* explained by Maharshi Dayanand are widely

accepted and consensus among scholars of *Ayurveda*.

*Sanskara* performed in intrauterine life consists of *Garbhadhana* (conception acceptance ceremony), *Punsavana* (ceremony of graceful care of embryo for achieving desired progeny) and *Seemantonayana* (for improving intelligence of foetus). Those performed in children were *Jata Karma* (birth rites), *Namakaran* (naming), *Nishkraman* (taking baby out of home), *Annaprashan* (starting solid feeding), *Chudakarma* (head shaving), *Karnavedhana* (piercing of the ear), *Upanayan* (thread ceremony) and *Vedarambha* (start of formal education). [4]

Those performed in youth and later lives consist of *Samavartan* (ending of formal education/ ceremony to accept the grown-up as a qualified individual), *Vivaha* (marriage), *Vanaprastha* (introspection and reassessment of the goals of life), *Sanyas* (leaving family life/complete renunciation) and *Antyeshthi* (last rites after death). Of these entire *Sanskara* *Ayurvedic* treatise described only *Garbhadhana*, *Punsavan* and the *Bal- Sanskara*.

Here in this article we are only concerned only with *Bal Sanskaras* which are-*Jata Karma* (birth rites), *Namakaran* (naming), *Nishkraman* (taking baby out of home), *Annaprashan* (starting solid feeding), *Chudakarma* (head shaving), *Karnavedhana* (piercing of the ear), *Upanayan* (thread ceremony) and *Vedarambha* (start of formal education).

## DISCUSSION & CRITICAL ANALYSIS OF EACH SANSKARA

The detailed analysis of each *Sanskara*, classical description & their significance in examination of different developmental and growth milestones is as follows-

### 1. *Jata Karma Sanskara*

The word 'Jata' means born or brought into existence. [5] This is the first *Sanskara* performed after birth of a baby. According to *Acharya Charaka*, after the initial stabilization of baby (*Prana Pratyagamana*) and cord cutting, *Jata Karma* should be performed. First of all, the child should be given *Madhu* and *Ghrita*. Thereafter, milk from the right breast should be given to the child. [6] *Acharya Sushruta* has opined *Jata karma* as cleaning the vernix on newborn's body, clearing newborn's mouth by *Saindhava* (rock salt) and *Sarpi* (ghee) and placing a ghee soaked cotton on baby's head. [7] This is followed by cutting of umbilical cord at distance of eight *Angula* from baby's skin and tying it by thread which is tied to baby's neck. [8] After this baby is made to lick gold *Bhasma* mixed with honey and ghee.

**Analytical view:** *Jata karma* is the birth rite which helps the baby transcend from intrauterine life to extra uterine life. Clearing the mouth of secretions clears airway and prevents aspiration. Cleaning the vernix provides tactile stimulation to the baby to make it breathe or cry. [9] Placing cotton soaked in ghee on head maintains temperature of the baby and provides insulation. It prevents heat loss from baby's head, which has the largest surface area, thus preventing hypothermia. [10]

Only after the baby is stabilized cord was cut, emphasizing on resuscitative measures. Tying the cord to baby's neck by thread prevents bleeding from cord and minimizes chances of infection of cord by soiling in stool and urine.

*Swarnaprashan* given to baby by gold *Bhasma*, honey and ghee serves the purpose of both nutrition and immunization. Honey also serves as a mild allergen, which gives the first opportunity to baby's body to start the synthesis of antibodies, thus shielding the baby from infections. Also this first feed initiates gastrointestinal

movements and activates the gut. *Swarna* (gold) *bhasma* gives physical protection to baby, enhances brain development and is in nano particles which is easily absorbable by baby's intestine.

This *Lehana* (licking of medicine preparations) also gives an opportunity to physician to assess the rooting and sucking reflex of neonate. Breast feeding is to be given on the first day so as to ensure proper nutrition and protective immunoglobulin present in colostrums. [11]

## 2. *Namakaran Sanskara*

*Acharya Charaka*, [12] *Sushruta* and *Vagbhatta* have described *Namakaran* on 10<sup>th</sup> [13] and 10th or 12th day respectively. [14]

**Analytical view:** Name of an individual signifies his identity and individuality which acts as stimulus for various examinations. This is the time when child has successfully passed the vulnerable early neonatal period (birth to seven days) which bears maximum risk of infections, sepsis, neonatal jaundice, etc. Neonatal physiological jaundice appears on second day of birth, reaches peak on 4<sup>th</sup> or 5<sup>th</sup> day and disappears by 10-14 days. [15]

Bathing of mother and baby with medicated water also ensures hygiene and disinfection. *Lodhra* used has *Shothnashaka* (reduces inflammation) and *Vranaropaka* (wound healing). [16] Keeping the baby's head towards north or east where maximum illumination of sunlight is present makes any inflammation on head like un-subsidized cephalo-hematoma visible.

## 3. *Nishkramana Sanskara*

It is the ceremony to expose the new comer to the exterior world. [17] In the fourth month after giving bath, the baby should wear new cloths and ornaments and should be taken to the family temple, i.e. out of the house for the first time. A paediatrician should be present when the baby comes back home. [18]

**Analytical view:** *Nishkramana Sanskara* is taking out the baby in fourth month which is appropriate as by this time baby develops enough immunity and tolerance to external environment. The presence of a *Vaidya* (paediatrician) on this occasion provides an opportunity for routine check up and examination of normal milestones development in baby like

- presence of neck holding,
- no head lag when pulled to sit,
- head above the plane of trunk on ventral suspension,
- hand eye coordination,
- bidextrous grasp approach to a dangling ring,
- laughing loud,
- social smile and
- Recognition of mother.

During this *Sanskara* the baby gets in an unfamiliar environment when his reaction in form of social smile, anxiety, fear, laugh or reaction to sound of bell can be observed. Persistence of primitive reflexes, if any can also be noticed.

#### 4. *Annaprashan Sanskara*

The physician should prescribe feeding of various fruits in sixth month. Later after eruption of teeth or in tenth month, [19] feeding of cereals should be started. Food should be mashed properly before giving and mouth should be cleaned by water after feed. Diet amount should be increased gradually. *Acharya Vagbhatta* as well as *Sushruta* opine sixth month as appropriate time for *Annaprashan*. [20]

**Analytical view:** Cleaning by *Jal Acamana* (water) indicates the highly developed sense of oral hygiene. Specific food which is beneficial in respective diseases is also prescribed. Starting the intake of fruits offers energy as well as vital vitamins and minerals to baby. This ceremony can also be useful for assessment of developmental milestones like

- rolling over,
- sitting with own support in tripod fashion,
- Bidextrous reach,
- stranger anxiety and
- Monosyllabic speech at sixth month.
- Smiles at mirror image

Teeth eruption in children also begins around this age. Hence proper dentition is also to be looked for.

Similarly, *Annaprashana* at tenth month offers assessment of-

- Bisyllabic speech,
- waving bye-bye,
- immature pincer grasp and
- Standing with support.
- Weight of child can also be assessed.

#### 5. *Karnavedhana Sanskara*

Pricking of the ears serves both ornamental purposes as well as protect baby from diseases. [21] Our *Acharya* have recommended sixth, seventh or eighth month for this rite in cold climate. [22] The child should be held in lap and ear pricked in centre of lobule, avoiding blood vessels and nerves by seeing it against sunlight. [23]

**Analytical view:** First of all above described 10 month's landmarks are to be examined. Also, ear piercing inflicts a small injury and triggers active immune mechanism of baby. It thus prepares the immunity of baby against any possible infection or injury. Modes to increase the pierced hole offer lubrication and prevention of wound infection. Selection of winter for the procedure also decreases chance of infection. Holding ear lobule against sun visualizes course of fine vessels, to avoid bleeding.

#### 6. *Chudakarma Sanskara*

This is head shaving ceremony. [24] This is performed in the first or third year according to *Grihya sutra* and *Paraskar sutra* respectively.

**Analytical view:** Acharya Sushruta opines that *Shikha* (special arrangement of hair on top on scalp which is left during *Chudakarma Sanskara*) is the site of *Sira* (vessels) and *Sandhi* (sutures) and this hair acts as a protective layer.

This *Sanskara* gives a chance for examination of skull and growth of hair. Detection of abnormalities like craniocynostosis, wide sutures, microcephaly, macrocephaly, elevated or depressed fontanelle etc. Palpation of scalp carefully may also reveal cranial defects or craniotabes. During scalp examination, inspect any cutaneous abnormalities such as cutis aplasia or abnormal hair whorls as they may suggest an underlying genetic disorder and it also offers protection of the child. [25]

### 7. Upanayana Sanskara

It is school entrance initiation ceremony. It helps control the fear of separation from parents, and to help overcome the anxiety of entering a strange place. It is also called *Yajnopaveet Sanskara*. This *Sanskara* helps the child to enter student life with perfect discipline. [26]

**Analytical view:** After the *Upanayana* is performed, the young lad becomes a *Dvija* i.e. twice born as this *Sanskara* signifies spiritual rebirth. The brain growth of the child gets completed up to the age of 5 years. So, Manu's opinion of starting the education by 5 years seems to be more logical.

### 8. Vedarambha

It is also called *Vidyarambha*, *Aksharambha* or *Akshara lekhana Sanskara*. This is education enrichment ceremony which is undertaken when the child is of five years age. In this *Sanskara*, each student, according to his lineage, masters his own branch of the *Veda*. It

signifies the student's commitment to learning and the teacher's to teaching. [27]

**Analytical view:** Starting formal education at five years is apt in today's era also, as by this time a normal child learns to walk, run, climb stairs, tell his name and gender, play co-operatively in a group, copy simple diagrams, use pencil, say song, poem, story, feed by himself and can go to toilet alone. It is also time for assessment of mental growth of child.

**DEVELOPMENTAL PROFILE OF BRAIN:** [28] As normal development of newborn depends directly on development of brain as it the main centre of control of each function of body. All reflexes and actions are controlled by central nervous system so, its normal growth is now what we have to consider, as various milestone are basically the signs of development of particular portion which depicts that function. So, it is as follow-

- Early brain stem and cord- birth: light reflex, startle reflex, Babinski reflex, reflex movement, reflex birth cries and grasp reflex.
- Visual, auditory, tactile, mobility, language and manual competences
- Brain stem and early subcortical areas- 2.5 months
- Midbrain and subcortical areas- 7 months
- Initial cortex- 12 months
- Early cortex- 18 months
- Primitive cortex- 36 months
- Sophisticated cortex- 72 months

### Skill Achievements [29]

- Gross motor- neck holding, sitting, standing, walking, running etc
- Fine motor- grasping, intentional reaching, holding etc
- Language- turns to sound, cooing, monosyllables, word meaning etc
- Social- social smile, recognizing mother etc

**Table No. 1 Showing functional correlation between *Sanskara* and Key developmental Milestones**

S. No.	<i>Sanskara</i> <sup>[30]</sup>	<i>Sanskara Kaala</i>	KEY DEVELOPMENTAL MILESTONES <sup>[31]</sup>
1.	<i>Jata Karma</i>	1 <sup>st</sup> day	Clearing the mouth provides tactile stimulation preventing hypothermia rooting and sucking reflex
2.	<i>Namakarana</i>	10 <sup>th</sup> day	physiological jaundice regaining of weight caput succedaneum ends
3.	<i>Nishkramana</i>	4 <sup>th</sup> month	social smile(2 month) cooing(3month) recognizing mother(3month) Neck holding(3month) Grasps a rattle when placed in hand(4month)
4.	<i>Annaprashana</i>	6 <sup>th</sup> month	Sitting with support(5month) Bidextrous grasp(5month) Monosyllables-ma, ba (6 month) Smiles at mirror(6 month)
5.	<i>Karnavedhana</i>	6-7-8 <sup>th</sup> month	Palmar grasp(7month) Sitting without support(8month) Pincer grasp(9month) Bisyllables-mama(9month) Waves bye bye(9month) Standing with support(9month)
6.	<i>Chudakarma</i>	1-3 years	Walking with support(10month) crawling(11month) standing without support(12month) two word with meaning(12month) plays simple ball game(12month) Walking without support(13month) running(18month) ten words with meaning(18month) walking upstairs(24month) simple sentence(24month) riding tricycle(36month) telling story(36month) knows gender(36month)
7.	<i>Upanayana</i>	5years	social way of living develops make friends ready for schooling
8.	<i>Vedarambha</i>	5years	

## CONCLUSION

*Sanskara* are rites performed with an objective of imparting positive qualities in a person. The *Sanskara* are a series of sacraments, sacrifices and rituals that serve as rites of passage and mark the various stages of the human life and to signify entry to a particular *Ashrama*. Indian seers have developed such a pattern of lifestyle that is perpetual essential. Every aspect is correlated with almighty God so that it is followed with great enthusiasm, surety.

*Sanskara* improve a person while removing his undesirable attributes.

These milestones are basically anatomical and physiological developmental signs. There many anatomical changes occurring in neonate when he comes from intrauterine life to extra uterine life. These changes are in synchronized manner and are achieved within certain range of time period. Lagging behind in time of these milestones signifies some deformity either at cranial or at local level. <sup>[32]</sup> These should be checked at regular interval.

The childhood *Sanskara* aim at preparing the baby for extra-uterine life successfully, develop proper feeding habits, ensure adequate nutrition, prevent diseases, adapt to environment for further survival, give individual identity and educate the child. Thus, we can see that knowledge of milestone was clearly and elaborately described in *Ayurveda* classics under the heading of *Sanskara*. This concept is both scientifically proved and is everlasting important. So, identical significance should be given in process of *Sanskara* by parents and clinicians, along with immunization process for healthier upbringing of child.

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