



Review Article

A REVIEW ON ANCIENT CONCEPTS OF KUMARAGARA, KRIDABHOOMI AND KRIDANAKA W.S.R.TO PEDIATRIC CARE UNIT, PLAY GROUND AND TOYS

Sonam P Kanzode^{1*}, V K Kori², Rajagopala S², K S Patel³

¹MD (Ayu) Scholar, ²Assistant Professor, ³Professor, Dept. of Kaumarbhritya, IPGT&RA, Gujarat Ayurved University, Jamnagar, India.

ABSTRACT

Ayurveda is one of the earliest medical systems that have got a strong scientific foundation formulated by experiments and observations of ancient wisdom. *Kaumarbhritya* (pediatrics) is one among eight branches of Ayurveda. Acharya Kashyapa has given prime importance to Kaumarbhritya for the very first time. As far as the branch pediatrics is concerned, in Ayurveda it accompanies a broad area. Virtually every aspect of a growing child is connected with play. Now days, many textbooks of pediatrics are focusing more on pediatric diseases and its management, but the concept of toys, play and its importance remain untouched. Years ago, Acharyas has described characteristics of *Kumaragara* (Neonatal care unit/pediatric ward), *Kumaradhara* (guardian), *Kridanaka* (toys) and *Kridabhumi* (play ground) which all are the pillars of a healthy and prosperous human being. Here, an effort is made to collect those aspects and validating that data with available evidence based references.

KEYWORDS: *Kumaragara*, *Kridabhumi*, *Kridanaka*, Toys.

INTRODUCTION

Kumaragara mentioned in Ayurvedic classics is not restricted with Neonatal care unit or Pediatric ward. *Kumaragara* is a broad concept. It accompanies all policies, protocols, staff, equipments, lightening, ventilation etc required for an ideal child care unit. For the sake of ease, *Kumaragara* can be correlated with modern NICU/PICU. Young children are in the process of rapid brain development. Persons coming in contact with the child in everyday's life and the environment surrounding the child have an impact on child's development [1]. This aspect is covered under topic *Kumaradhara*. Toys play imperative role in the life of young children. They stimulate venture play, the development of cognitive skills, sharing in peer group and also social attachment. Every child needs a playful environment for a healthy overall growth and development. Due to this, neural pathways in the brain are developed and strengthened, body muscles are exercised and a great feat of imagination and thinking is stimulated[2]. Ayurveda has described each and every aspect of child rearing in detail.

Aims and Objectives

1. To review and evaluate the concept of *Kumaragara*, *Kridabhoomi*, *Kridanaka* described in ancient Ayurveda classics.
2. To revalidate the concepts of Ayurveda with evidence based references.

Materials and Method

Data and information collected from Different Ayurveda Samhita, text books, research papers, Published articles, journals, and websites. Reference and text book of modern pediatrics, news paper and other electronic media sources.

Kumaragara (Neonatal care unit /Pediatric ward)

Kumaragara is special ward or room for neonates or child. *Kumaragara* is broad spectrum entity which can include Neonatal care unit, Pediatric care unit, General pediatric ward, Pediatric OPD, Nursery or playhouse and also the room of child in the home. For convenience it is correlated with Neonatal care unit. *Kumaragara* should be spacious, well ventilated, well equipped with all essential instruments, decorative, pleasant, clean and peaceful. There should be one old lady who is experienced in the subject or *Vaidya* (doctor). *Kumaragara* should be devoid of insects, mice, flies, mosquito etc.[3] Bed of child, bed sheets, and blankets should be clean, soft, light weight, and having some agreeable smell. As per *Acharya* Sushruta clothes and blankets should be made of Silk material[4]. All the linens of child should be fumigated with *Vacha* (*Acorus calamus* L.), *Sarshapa* (*Brassia compestris*), *Hingu* (*Ferula northex Boise*), *Guggulu* (*Commiphora mukul*), *Jatamansi* (*Nordastachys jatamansi* DC), *Ghrita* (Ghee) etc drugs.

Acharya Charaka says that expert architect's opinion should be taken prior to the construction of *Kumaragara*. *Kumaragara* should be pleasing and attractive. There should be enough light in the room and sufficient sunlight also should be there. *Kumaragara* should be well aerated but bright sun rays should not directly come in contact with skin of baby. *Kumaragara* should be protected from dogs, violent animals, insects, mosquitoes, rats etc. There should be separate compartment like bathroom, urinals, toilets, drinking water, kitchen etc. There should be different couch/bed as per season. *Kumaragara* should be fumigated with *Rakshoghna* (antimicrobial) drugs. Entry in the *Kumaragara* should be restricted to the trained *Vaidya* (doctor), *Paricharaka* (attendants) and guardians.

Strangers should not be allowed to enter in the *Kumaragara* [5].

Kumaradhara (Guardian/baby sitter)

Guardian/baby sitter is a person who looks after baby can be called as guardian or governor of child. As per Ayurvedic text Ashtanga Samgraha, the person who is faithful, having virtuous conduct, not very stout, not greedy and one who can understand child's mind should be appointed as *Kumaradhara*. A person with vices makes the child unrighteous (in temperament), a stout person makes it learn irregular kind of work and one who is greedy for food makes the child a glutton which can cause many diseases in child.[6]

Kridabhoomi (Play ground)

Play ground should be plain /even; it should be clean and devoid of iron weapons, spikes, thorns, needle, stones, pebbles, dust, *Valuka* (sand) etc. Child should feel comfortable on play ground floor. The floor should be sprinkled with the *Nimba* (*Azadiracta indica* Linn.) *Patra siddha jala* (decoction) or *Vidanga* (*Embelia ribes*), *Maricha* (*Piper nigrum*) etc. *Siddha jala* (water).[7]

Kridanaka (Toys)

Toys and play are the most enjoying and unavoidable part of childhood. Every child has his/her own toys or games as per family background and socio economic status. Characteristics of toys are nicely explained in Ayurvedic classics. According to *Acharya Charaka*, toys can be of different types. Toys should be attractive, colorful, light in weight, non-pointed, enough bigger in size so that it will not be swallowed by child. Toys should never be harmful and making threat to the life of child or produce insecurity and fear in mind of child.[8]

That concept is acceptable is in this era also. *Ashtanga Samgraha* quotes that toys should be made up of *Laksha* (*Laccifera lacca*), making sound, colorful, attractive, bigger in size and pleasant. Toys should not be pointed or frightening to child. Toys should be in different models of animals like horse, cow, different colorful flowers, fruits and all other similar auspicious things.[9]

Acharya Kashyapa has given an outlook of *Samsara* to this concept. As per *Kashyapa*, in sixth month, on any auspicious day, after worshipping the gods, the physician having recitation of auspicious *Mantras*, making rounded or square shaped alter with the help of cow dung and water, in clean place at the center of house measuring four *Hasta* (about 72 inches) some toys of bright ornaments like gold, silver, copper, bronze, lead, iron, pearl and other toys made of *pishta* (thick paste of edible items such as wheat flour etc.) should be kept there. Colorful toys of various shapes of animals and birds like lion, tiger, monkey, elephant, horse, wolf, cat, dog, pigeon, tortoise, fish, parrot, sparrow, swan, duck, peacock, hen etc.

After this, the same child having taken bath, adorned and wearing intact clothes, should be made to sit for a *Muhurta* (short time) facing eastwards in the middle of that circle. After sitting for a *Muhurta*, then whatsoever object (described above) he holds, touches or pulls with his hands, he becomes claimant of the same. Thinking this in the heart, lift the child carefully. Later on daily for the

practice, the child should be made to sit for a short while with support on the floor covered with cushion/carpet playing with attentive wet-nurse or other child engaging him in above mentioned toys or other bright, light, not very new, not likely to hurt, capable of producing pleasant sound when moved from one place to another.[10] The child should be made to sit once on a clean besmeared floor free from weapons, water and fire. Child should not be forced to sit for a longer duration.[11] *Acharya Vagbhata* also has advised that child should be made to sit in fifth month and some support should be provided so that child will be protected from falling back. Later child's sacral region should be gently massaged with some oil. [12]

Complications due to prolonged sitting of the child

Numbness, sacral weakness, backache, tiredness, pain and fever, retention of feces, urine and flatus as well as flatulence can developed due to prolonged sitting. Due to continuous sitting body ache can occur this can produce a feeling of sorrow in mind as well as Infirmity of body part is possible and this can hamper proper growth and development. Due to over sitting on the same place there are more chances of getting affected invariably by flies, worms, insects, snakes, rats etc. So child should never be allowed to sit alone for longer duration. [13]

DISCUSSION

Kumaragara has no hand to hand similarity with neonatal care unit or pediatric ward. Though, the technology was not so advanced in ancient time, *Acharyas* has given a guideline related to ideal *Kumaragara*. As per Ayurveda classics, it should be large or spacious, delightful, well ventilated and with enough lighting, unexposed to wind, free from insects, mites and other animals, with compartments conveniently built for water, urination, passing of stool and cooking. In very similar way modified techniques and well furnished set up of neonatal care unit with all essential equipments, proper light, ventilation, humidity and temperature maintenance, medicines etc. are being used which are basic needs of a neonatal or pediatric care unit.[14, 15.] Different clothes, bed sheet, blankets as per season, all these guidelines are proved to be useful in this era also as neonate is more prone to get hypothermic so, linen of a child should be provided as per environmental conditions. In the same way now a days we are using Radiant warmer, Air conditioners to provide a thermo neutral environment[16]. *Acharyas* quote that all the linens of child should be fumigated with *Vacha*, *Sarshapa*, *Hingu*, *Guggulu*, *Jatamamsi*, *Ghritha* etc. drugs. This concept was given to protect the child from *Grahbadha*, further all these drugs are having antimicrobial property[17-20] and fumes of these drug help to disinfect the clothes as well as surroundings also get purified[21], similarly in present days fumigation[22] is done to protect the child from microbes and other nosocomial infections[23] and enforces the hygiene aspect. *Acharyas* concern to no entry to strangers can be said to avoid contact with other patients that can cause infection to baby and also a safety purpose because child abduction is also a serious issue now a days. Colors and artwork in children's hospital provides a more cheerful environment so it contributes toward the pediatric patient's healing process. *Daykin* (2008) found that exposure to art in healthcare environments reduces

anxiety and depression. Windows with day lighting and outside view are also important contributors towards healing.^[24]

In this era of fast lifestyle and competition, Parents can't give sufficient time to child and a trend of keeping baby with baby sitter or in Crèche or day care centre (*Palanaghar / Anganvadi*) is developed. Though it is not possible fully to design a center like an ancient methodology but some changes can really be helpful. The person who is looking after baby in the absence of parents has to be bestowed with all good qualities. Ayurveda covers this aspect of *Kumaradhara* (baby sitter) in a systematic and scientific way.

Ancient texts of Ayurveda have described the characteristics of ideal toys extensively. Natural materials such as *Laksha*, *Pishta* (thick paste of edible items such as wheat flour etc.), wood, metals (gold, silver, copper, iron) etc. are said to be ideal material for preparation of toys. Children are fond of putting the toys in mouth and there can be possibility of swallowing the toys or part of it, so *Acharyas* told that toys should be bigger in size. *Laksha* is rich in iron content^[25], *Laksha* makes bones stronger and help to maintain normal bone density, it is beneficial in bleeding gums^[26], it can also be used as liver tonic.^[27] The edible items used are totally harmless and even if enter into mouth of children will not cause any harm, on the other hand provide additional nutrition to the child. It has been proved that many toys that are made up of plastic and other synthetic materials are not good for child^[28, 29]. So the concept of toys made with natural and harmless materials as mentioned by Ayurveda Acharyas needs to be promoted further.

Acharya Kashyapa has given new and unique approach here with a frame of *Samskara* (Ritual procedure) i.e. introducing the child to toys, and it is advised to be done at 6 months of age, when the child is able to sit and is able to play with toys. When any *Sanskara* (function) is arranged, traditionally relatives and neighbors are invited and the child gets exposed to variety of people, which helps the child to get socialized. This is the time another milestone named stranger anxiety develops^[30], and exposure of the child to social gatherings will help in overcoming this stranger anxiety in the child. Further in this *Sanskara*, the child is allowed to choose the toy at his own from plenty of various toys with different colours and shapes. Child picks up the toy as per interest from which one can assume the *Prakriti* (constitution) of child. It has been proved that baby primates show sex differences in play styles and toy preferences that mirror those of child^[31], children may be biologically predisposed to respond to particular toys^[32]. As per Ayurveda classics, play and toys can help for physical as well as psychological development of child. These are well supported by latest research works with conclusions like play prepares preschool children for school^[33], creativity increases following free play^[34]; lack of play threatens children's personality development^[35]; impairment of play skills may result in later adjustment problems^[36]; children will play longer when allowed to choose their own playthings^[37]; All these references certify that, the concept of *Kridanaka* and

its implication in child's life described by *Acharyas* is unquestionably true.

The playhouse should be clean and devoid of all the harmful objects like knife, sharp or pointed toys, small toys that can be swallowed by child and can threaten the life. When to take the child out of house in the surrounding, how long child should be made to sit all these concepts are described in Ayurvedic classics. It is noticed in practical life also that bright light, dust, sun rays are not good for eyes of baby and kids should be protected from these^[38]. Sprinkling the decoction of *Nimba*, *Maricha* etc. on the floor where child is used to play, has also a broad concept of aseptic conditions - microbe free environment and hygiene. It is well established that children below 5 years of age are generally not aware of importance of hygiene, and skin infections and worm infestations are most commonly found in this age group^[39]. *Nimba*^[40], *Maricha*, *Pippali* etc. are the *Krimighna* drugs, *Nimba* is antifungal in nature^[41] and so these can help to protect child from microbial infections including fungal infections. Toys in different shapes and color attract the child and produce some curiosity in child's mind. So, these kinds of toys are helpful for the proper development and functioning of brain and decision making capacity in the child. This can be well supported by the today's Montessori teaching methodology and higher schools where variety of posters are used to teach the child (posters showing animals, flowers, birds, posters to teach English alphabets like A for apple, H for horse, Z for Zebra etc.).

As per Ayurveda, a child should not be kept alone for longer time, the child should not be forced to sit before 5 months of age and also for long duration. In normal physiological development, the musculature of child's body is not well developed till this age, so enforcement for sitting at inappropriate age can harm the body and may also result into deleterious long term effects. *Abhyanga* (oil massage) after prolonged sitting helps for *Vatashamana* (pacification of *Vata Dosha*) and works as analgesic^[42] for baby in addition to its natural benefits of muscle strengthening^[43], so this should be promoted as a routine practice.

CONCLUSION

Ayurveda, a holistic medical system of Indian sub-continent is complete by itself, however the timely updating of the concepts have not been done. It is the first well organized medical science which identified different specialties including *Kaumarabhritya* or Pediatrics. The concept of *Kumaragara*, *Kumaradhara*, *Kridabhumi*, *Kridanaka* etc. and the do's and don'ts are very useful in today's life too, actually same concepts are being used now also, but in modified form. Play is a treasured part of childhood that offers children important developmental benefits if the toys and play are appropriately selected. In order to stimulate the prolong play, parents should support and encourage it by providing sufficient space in which to play, and a broad assortment of toys and other play objects to enable the broadest range of play possibilities. As everybody strive to create the optimal developmental landmark for children, it remains imperative that play should be included along with

academic and social-enrichment opportunities and safe environment should be made available to all children.

REFERENCES

- J.Bullard, Pearson Allyn, Bocon Prentic Hall, Why is the Environment Important for Children's Learning?, www.education.com/Reference/article/environment-important-children-learning/july20, 2010.
- Jeffery Goldstein, Dec 2003, Contribution of play and toys to child development, i.goldstein@wxn.nl
- Indu, Shashilekha Sanskrit commentary on Ashtanga samgraha, Chaukhambha Sanskrit series, Varanasi, 2005, Uttartantra, 1/44.p 634.
- Vaidya Datto Ballal Shastri, Sartha Sushruta Samhita, Rajesh Prakashana, Sharirsthana 10/23, p.371.
- Brahmanand Tripathi, Charaka Samhita, Chaukhamba Sanskrit Publication, Varanasi, 2005, Sharirasthana 8/59.
- Indu, Shashilekha Sanskrit commentary on Ashtanga samgraha, Chaukhambha Sanskrit series, Varanasi, 2005, uttartantra, 1/44.p 634.
- Indu, Shashilekha Sanskrit commentary on Ashtanga samgraha, Chaukhambha Sanskrit series, Varanasi, 2005, Uttartantra, 1/47.p 634.
- Acharya Vidyadhara Shukla, Prof. Ravidatta Tripathi, Charaka Samhita, Chaukhambha Sanskrit Publication, Varanasi, 1998, Sharira sthana 8/63p.804.
- Indu, Shashilekha Sanskrit commentary on Ashtanga samgraha, Chaukhambha Sanskrit series, Varanasi, 2005, Uttartantra, 1/47.p 634.
- Premavati Tiwari, Kasyapa samhita, Chaukhambha Vishvabharati publication, Varanasi, 2013, khilasthana12/6. p 597.
- Kashyapa, Kashyapa samhita, published by Chowkhambha Sanskrit Series, Varanasi, 2013, Khilasthana Chapter 12/ Shlok 6-7, P. 31.
- Indu, Shashilekha Sanskrit commentary on Ashtanga samgraha, Chaukhambha Sanskrit series, Varanasi, 2005, Uttartantra, 1/36.p 632.
- Premavati Tiwari, Kasyapa samhita, Chaukhambha Vishvabharati publication, Varanasi, 2013, khilasthana12/10-14.p 598.
- Meherban singh Medical Emergencies in Children, Sagar Publication, Fifth Edition, 2012, Chapter 1- Organisation of a Pediatric Intensive Care Unit, p.3-13.
- Ian Laing, Tony Ducker, Alison Leaf, Penny Newmarch; Designing a Neonatal Unit, Report for the British Association of Perinatal Medicine, May 2004.
- Meherban singh Medical Emergencies in Children, Sagar Publication, Fifth Edition, 2012, Chapter 1- Organisation of a Pediatric Intensive Care Unit, Power supply and Temperature control, p.4.
- Kaur Gagan deep, Sharma AK, Dash Sanghamitra, Bal Nigaman and. Vacha (*Achorus calamus* linn.): a Valuable Medicinal Plant. int.J.Ayu.Pharma Research.2014;2(8):1-11.
- Claudia Olivier, Stevan F.Vaughn, Eduardo S.G.Mizubuti, Rosemary Loria, Variation in Allyl Isothiocyanate production Within *Brassica* Species and Correlation with Fungicidal Activity; Journal of Chemical Ecology, December 1999, Volume 25, Issue 12, p.2687-2701
- Vaidya A. Reverse pharmacological correlates of Ayurvedic drug actions. Indian J Pharmacol 2006, 38;p.311-5
- Mahendra P, Bisht S.Ferula asafoetida: Traditional Uses and Pharmacological Activity. phcog Rev2012;6;141-6
- Anuja B. Raut, Anisha N.Shah, S.A.Polshettiwar, B.S.Kuchekar; Preparation and Evaluation of Antimicrobial Herbal based Incense sticks for Fumigation against infectious Bacteria; J. Chem. Pharma. Res., 2011, 3(4);707-712
- Hospital Infection Control-Procedures & processes manual. <https://sites.google.com./hopehospitals.in/For-dot-in/hospital-infection-control>.
- www.medicinenet.com(Retrived on 17/02/2015)
- Daykin N., Byrne E., Soteriou T., O'Conner S; The Impact of Art, Design and Environment in mental healthcare: A systematic review of Literature; J R SOC Promote Health;2008 Mar/28(2):85-94
- www.bimbima.com.posted2015/08/15-dated (retrieved on 13/02/2016)
- www.ayurtimes.com dated 3/2/16
- www.amritayu.com. Dated 3/2/2016
- www.m.scmp.com Dated 02/02/2016
- Dr.Mercola, 10 Worst Toys for Kids; www.articles.mercola.com dated 06/12/2014 (Retrieved on 19/02/2016)
- Vinod K.Paul, Arvind Bagga; Ghai Essential Pediatrics, CBS Publication, Eight edition, 2013, Growth and Development.p.52
- Gerrienne M.Alexander & Meilissa Hines (2002). Sex differences in response to children's toys in non-human primates. (*Cercopithecus aethiops sabaeus*) Evolution & Human behavior, 23, 467-479.
- Gerianne M. Alexander (2003): An evolutionary perspective of sex typed toy preferences: Pink, blue and the brain Archives of sexual behavior, 32, 7-14.And Nordernstorm & others (2002) sex typed toy play behaviour correlates with the degree of prenatal androgen exposure assessed by CYP21 genotype in girls with congenital adrenal hyperplasia. Journal of Clinical Endocrinology, 87, 5119-5124.
- Jerome Singer & M.A.Lythcott (2002) Fostering school achievement and creativity through sociodramatic play in the classroom. Research in the schools, 9, 43-52.
- P.A.Howard-Jones & Others(2002):The effect of play on the creativity of young children during subsequent activity. Early Child Development And Care, 172, 322-328
- Paul Mc Arcdle (2001) Children's play. Child:Care, Health and Development, 27, 506-514.
- Karen Stagnittii & Carolyn Unsworth (2002); The importance of pretend play in child development; An

- occupational therapy prospective. British journal of occupational therapy, 63, 121, 127.
37. Debra Reinhartsen, Ann N, Garfinkle & Mark Wolery (2002). Engagement with toys in two year old children with autism: Teacher selection verses child choice; Research & Practice for Persons with Severe Disabilities. September 2002, vol 27 no.3;175-187
38. www.omnieye.ca; Eye care tips for Babies and Children (Retrived on 17/02/2016)
39. www.ncbi.nlm.nih.gov; (Retrieved on 29/02/2016)
40. Sharma RK, Bhagwan Dash. Caraka Samhita (Eng. Translation) Vol. I (Sutrasthana). Varanasi; Chaukhamba Sanskrit Series Office; Sutrasthana 4/15
41. Jaiswal Awantika *et al*, Nimba neera-the gift of nature, SAJP, 2015:4(1);48-50.
42. www.livingbhaktistudies.com; Pilot study Investigating the effect of Ayurvedic Abhyanga dated 2015/11(Retrieved on 19/02/2016)
43. Swapnil Raskar, Rajagopala S. Abhyanga in New Born Baby and Neonatal Massage - A Review. International Journal of Ayurveda and Pharma Research. 2015; 3(6):5-10.

Cite this article as:

Sonam P Kanzode, V K Kori, Rajagopala S, K S Patel. Review on Ancient Concepts of Kumaragara, Kridabhoomi and Kridanaka w.s.r. to Pediatric Care Unit, Play Ground and Toys. International Journal of Ayurveda and Pharma Research. 2016;4(3):10-14.

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

***Address for correspondence**

Dr Sonam P Kanzode

MD (Ayu) Scholar,
Dept. of Kaumarbhritya,
IPGT&RA, Gujarat Ayurved
University, Jamnagar -361008
Ph: 08140978927

Email: sonamkanzode@gmail.com

