

ORAL HEALTH SURVEY STUDY ON VILLAGE POPULATION W.S.R. TO ORAL HYGIENIC PRACTICES

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ABSTRACT

Ayurveda excellence marks that; *Dinacarya* has plethoric prosperity in availing the health in promotive, preventive, curative and restorative aspects of life. These varied practices of daily regimen are well known from time primeval for imparting the strength, dexterity and excellence for all the vital parts of the body. Ascribing the *Ayurveda* fundamentals – *Dinacarya* (*Kavala, Gandusha, Danta Dhavana, Jihwa nirlekhana, Mukha Prakshalana*) with relation to prevention of diseases and in detection of positive health on large society is matter of concern. The present study was carried out by a thorough screening tests and interviewing methods. The study was conducted on 300 village people. Samples were divided in two 2 groups (Study and control group) with the help of Random selection statistical software. Each group consists of 150 samples. Both the groups were subjected to oral hygiene pre assessment tests and gradation by using various assessment tools of *Mukha swasthya pariksha patrika* (oral health survey sheet) and oral health index respectively. Study group was subjected to set of different modules of oral hygienic measures and control group under null intervention. Both the groups were assessed and compared after subjecting the samples to post assessment tests oral health index and *Mukha swasthya pariksha patrika* (oral health survey sheet) and results and conclusions were drawn.

Keywords: *Ayurveda, Dinacarya, Health survey, Oral hygiene, Swasthavritta*

INTRODUCTION

Ayurveda being a principle science of positive health advocate and steer us by certain fundamentals through the *Swasthavritta paripalana* in accomplishing positive health and longevity. Codes of *Swasthavritta* incorporate the measures concern to physical, mental, social and philosophical aspect of life.

Person, who wills to acquire the ultimate health and the pleasure of life, should accept and indulge in the practices like *Dinacharya, Ritucharya* and

Ratricharya regularly.^{1, 2} Concept of prevention is an imbibed notion of *Ayurveda* excellence. The regimens which are acknowledged every day are noted as *dinacharya*. Such observances are favorable to all the peoples.³ Daily regimens encompasses the fourfold benefits viz., health pro-motive, preventive, curative and restorative. These are intended to strengthen the physical, physiological and psychological aspects of the body.

The principles of health have been elucidated under two headings viz

Dinacharya and *Ratricharya*. *Ayurveda* is a science of life. Its first and foremost aim is to preserve and promote the positive health and secondarily to combat the disease.⁴ Both the classes comprise personal hygiene, which consists of codes and conduct of life, and practice of hygiene that are conducive to health and longevity. These comprise the daily hygienic life style of an individual.

Every individual is responsible for the sanitation of his own house and surroundings when this state is recognized and carried out, then he is said to attain freedom from sickness certainly.

To achieve *Purushartha* one should require healthy & disease free life. But today due to the busy schedule, Stress, Lack of concentration towards self, Pollution and the adoption of modern techniques the people are not bound to practice all the daily regimens. Lack of awareness regarding these procedures is also a reason for increased morbid health status in the community. Today it is the need of the hour to educate and motivate the community regarding this and to reduce the morbid status of the community.

As these measures are easy and simple, economical, not consuming much time and more acceptable and having higher efficacy, so these can be adopted daily by a common person. Primary Prevention is aimed at increasing individual immunity by adopting specific protection measures such as *Dinacharya*, *Ratricharya*, *Ritucharya*, *Rutu anusara Shodhana*.

Now a day efforts are being made to work out comprehensive schedules to get employed towards specialization of the entire medical discipline, with the main objectives to keep the society largely

healthy. Newer ways and means are worked out and employed but with limited success. Whereas the objectives of *Ayurveda* science clearly mention that the first part of the medicine maintains the health and takes the healthy man to feel vigorous, that is positive health and the other part is to destroy sickness.⁵

At this stage, it will be a great help if the measures ascribed in *Ayurveda*, in relation to prevention of diseases and in detection of positive health are taken in to consideration and employed at large society.

The effort will not only throw light on its historical prospective but prove the scientific validity of the ancient principles of health care and contribute many new appliances which may result fruitful in further planning of health programme, at both the national and international levels.

Hence this survey study was planned to assess the awareness of the community regarding hygienic practices and to educate and motivate them in concern to this.

Dinacharya comprises the instructions about diet and activity, work, rest and sleep, sense of purity, sex hygiene and behavior in general. Its prime aim is not only to strengthen the physical power of body but also to strengthen and increase the vitality of all the senses and psyche.

AIMS AND OBJECTIVES

1. To evaluate the effect of different modules of oral hygienic measures in the maintenance of health
 2. To observe the oral health status of the village population
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MATERIAL AND METHODS

The present study was carried-out by a methodical screening tests and interviewing methods. The study was conducted on 300 people from a village. The study was undertaken at 3 levels:

1. By using random statistical software, random selection of 150 male and 150 female people were made and divided them into two groups (study and control groups)
2. Subjecting both groups to Pre assessment tests for oral hygienic status by using various assessments in *Mukha swasthya pariksha patrika* (oral health survey sheet) and also grading the oral health index⁶
3. Study group was subjected to set of different modules of oral hygienic measures and control group was kept without any interventions.

Set of oral hygiene measures

- a) *Prakshalana*: Mouth washing with medicated water
- b) *Danta davana*: brushing tooth with medicated powder
- c) *Jihwa nirlekhana*: tongue scraping with scraper
- d) *Kavala and Gandusha*: medicated oil pulling and gargling

Proposed material for the set of modules of daily hygienic measures

1. *Bramhimuhurtha Jagarana*: 96 minutes before the sunrise of the day
2. *Usha pana*: water kept in previous night at least 10-12 hours before waking up. Quantity: 250ml to 700ml⁷
3. *Mukha prakshalana*: by Luke warm water / Normal temperature water
4. *Danta davana*: fresh twigs of little finger thickness and 12 finger in length made up of *karanja* (*Nerium odorum*), *Arka* (*Calotropis*), *Malati* (*Jasminum*

grandiflorum), *Arjuna* (*Terminalia arjuna*), *Asana or Vijayasara* (*Terminalia tomentosa*) or compound powder consisting of Honey, Powder of *Trikatu*, *Triphala*, *Irimeda*, *Saindhava*, *Tejovati Taila*⁸

5. *Jihwa Nirlekhana*: 10 finger in length, flexible foil of (Twig itself) *Mrudu Kasta*⁹

6. *Gandusha and kavala*: cold water for kapha elimination or usage of oil¹⁰

7. *Musta* (*Cyperus scarius*) and *Triphala*, Honey, Oil and water each. one after other for the purpose of Gargling respectively¹¹. Simple *tila taila* for Gargling

Source of Formulation/Materials: The fresh twigs of *Nimba kasta* were collected at nearby places surrounding the village. The *Triphala kwatha churna* was prepared in the Post graduate research unit of *Rasashastra* department at DGM Ayurvedic Medical College, Gadag, Karnataka. Subjecting Post assessment tests to both the groups for oral health index and other related assessments of oral health survey Proforma and comparing the results for drawing conclusions. Complete history of all the subjects was collected and recorded in a special research Proforma designed in research unit of of *Swasthavrita* of SDM College of *Ayurveda* and Hospital, Hassan. The 300 people were interviewed, data was collected and assessment tests were undertaken.

Source of data: Subjects fulfilling inclusion criteria were randomly selected from village Byahatti dist. Dharwad with age and other particulars.

Method of collection of data

Diagnostic Criteria: Subjects who are apparently healthy were selected after subjecting to the standard prepared questionnaire regarding oral health status¹¹

Inclusion Criteria: Person who is apparently healthy aged between 18-40 years and person who fall under the average and low average oral health grade were included.

Exclusion criteria: Persons suffering with any sort of disorder and person who fall under borderline and disease oral health grade were excluded.

Grouping

Group A: 150 subjects were subjected to set of modules of oral hygiene practices for the period of 03 months

Group B: 150 subjects were kept as control without any interventions

Assessment criteria

Both study and control groups were subjected to Pre assessment tests for oral hygienic status by using various assessments in *Mukha swasthya pariksha patrika* (oral health assessment survey sheet) along with grading the oral health index.

After the study duration, both groups were again subjected to assessment tests for oral hygienic status by using various assessments in *Mukha swasthya pariksha patrika* (oral health assessment survey sheet) along with grading the oral health index and results were subjected for statistical interpretation.

Table 1: Assessment parameters in oral health status¹²

| Sl. No. | Assessment |
|-------------|-----------------------------------|
| I | Mukha Pariksha |
| 1 | Extra Oral Examination |
| 2 | Tempomandibular Joint assessment |
| II | Examination of Oral Cavity |
| 1 | <i>Osta Pariksha</i> |
| 2 | <i>Dantamoola Pariksha</i> |
| 3 | Community Periodontal Index |
| 4 | Loss of Attachment |
| 5 | Danta Pariksha |
| 6 | Dentition Status |
| 7 | Enamel Opacities/Hypoplasia |
| 8 | Dental Fluorosis |
| 9 | Prosthesis Status |
| 10 | Prosthetic need |
| III | Dentofacial Anomalies |
| 1 | Dentition Space |
| 2 | Occulsion |
| IV | Jihwa pariksha |
| V | Taalu Pariksha |
| VI | Gala Pariksha |
| VII | Sarva sara Pariksha |
| VIII | Oral Hygiene Index |

METHODOLOGY

Village voter list was procured and by using random statistical software, random selection of the subjects has been done and subjects were divided into study and control groups. Materials for study were standardized as per the seasons. Oral health assessment survey Proforma was prepared

as per WHO Oral health assessment standards and as per the *mukha swasthya* explained in classics. Study and control groups were put for pre test analysis as per oral health survey proforma. Materials for study were prepared and distributed to the study group in first stretch of the study after giving proper instructions. Health talk on

‘Oral Health measures in maintaining the oral health’ was given to the people. Along with Local volunteers (*Yuvaka Mandala, Byahatti*), interviewed the people who attended the health talk program by using the oral health status assessment questionnaire.

The subjects who have fallen under average and low average oral health status were included under study and divided the subjects in to study and control groups by simple Random selection method (selecting the alternate member). The subjects were recorded as per the survey proforma and the pre test assessments were taken. The subjects were then counseled to maintain their oral health. The subjects were instructed about the set of modules of oral health measures. The study group’s subjects were issued the materials (*Nimba kasta brush, Triphala Kashaya churna* packet) and Control group subjects were kept without any intervention. Both the group subjects were asked to report back after two weeks for the next follow-up.

OBSERVATION AND RESULT

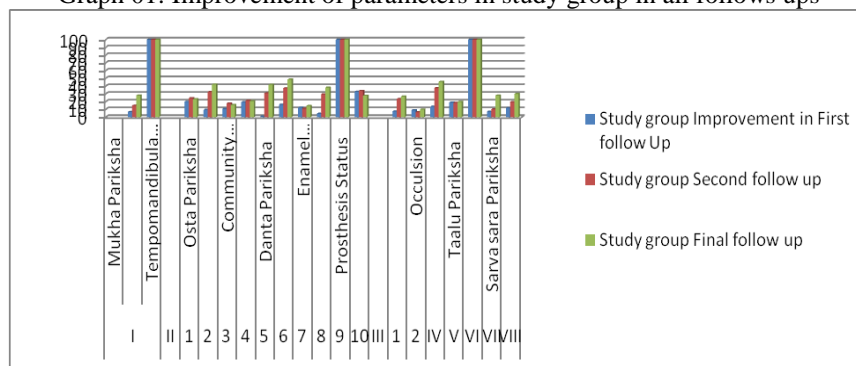
Among the various parameters, Oral hygiene Index is showing the improvement in reading. (Reduction in Value= Improvement in Status) (11.66% in first follow up, 19.45% in second follow up and

30.04% in final follow up). As per the counseling the subjects of study group, they are getting benefited with the practices and they are getting relief of minor complaints related to oral health.

In Oral Hygiene Index assessments, the calculus index is not showing the much improvement where as the debris index is showing the improvement results. Among other parameters, Community Periodontal index (first follow up shows 10.69% improvement, 17.55% in second follow up and 15.69% improvement in final follow up) and loss of attachment index are showing the improvement results. (Loss of attachment improvement results: 19.35 in first follow up, 21.36 in second and 20.73% improvement in third follow up).

No subjects have the complaints of prosthesis status and Prosthesis need and no subjects were reported as having the complaints related to *Gala*. Few cases were recorded with complaints of Tempo mandibular joint. No much improvement was observed in Tempo mandibular Joint Assessment. Significant improvements observed in *gala, talu* and *jihwa pariksha* and *sarvasara pariksha* parameters.

Graph 01: Improvement of parameters in study group in all follows ups



Graph 02: Improvement of parameters in study group in all follow ups

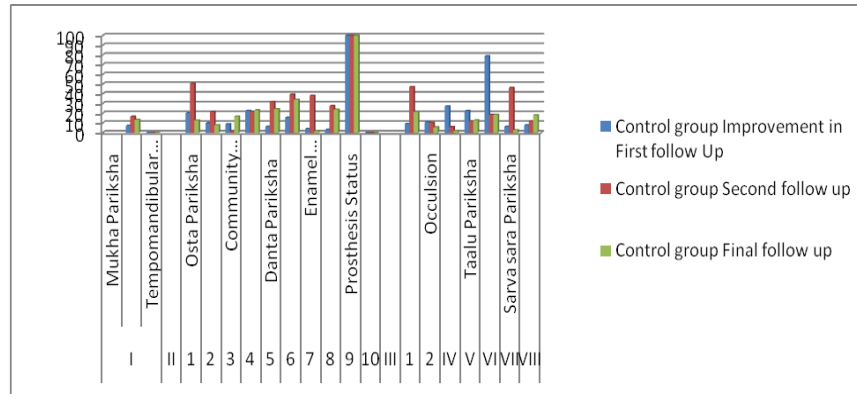


Table 2: Assessment of oral health index

| VIII Oral Hygiene Index | | | | | |
|-------------------------|----------|------------------|----------|------------------|----------|
| Study Group BT | 4.46 | ST BT | 4.46 | ST BT | 4.46 |
| First Follow Up | 3.93976 | Second follow up | 3.5921 | third Follow up | 3.12 |
| Diffrence | 0.52024 | Diff | 0.8679 | Diff | 1.34 |
| % of reduction | 88.33543 | % of reduction | 80.54036 | % of Reduction | 69.95516 |
| % of Improvement | 11.66457 | % of Improvement | 19.45964 | % of improvement | 30.04484 |
| SD | 0.05 | SD | 0.11 | SD | 0.22 |
| SE | 0.01 | SE | 0.1 | SE | 0.12 |
| T | 4 | T | 4.5 | t | 5.6 |
| P Value | <0.001 | P Value | <0.001 | P Value | <0.001 |
| Control Group BT | 4.29 | CT | 4.29 | CT | 4.29 |
| First Follow up | 3.9469 | Second Follow Up | 3.7786 | Third Follow Up | 3.51 |
| | 0.3431 | | 0.5114 | | 0.78 |
| % Of Reduction | 92.00233 | % Of Reduction | 88.07925 | % Of Reduction | 81.81818 |
| % of Improvement | 7.997669 | % of Improvement | 11.92075 | % of Improvement | 18.18182 |
| SD | 0.05 | | 0.12 | | 0.14 |
| SE | 0.02 | | 0.03 | | 0.2 |
| T | 4 | | 4.3 | | 5 |
| P | <0.001 | | <0.10 | | <0.01 |

Table no: 3: Overall improvement in parameters in both the groups (in percentages)

| SN | Assessment | Study group | | | Control group | | |
|------|----------------------------------|--------------------------------|------------------|-----------------|--------------------------------|------------------|-----------------|
| | | Improvement in First follow Up | Second follow up | Final follow up | Improvement in First follow Up | Second follow up | Final follow up |
| I | Mukha Pariksha | | | | | | |
| | Extra Oral Examination | 6.62 | 14.78 | 27.89 | 7.34 | 16.69 | 13.47 |
| | Tempomandibular Joint assessment | 100 | 100 | 100 | 0 | 0 | 0 |
| II | Examination of Oral Cavity | | | | | | |
| 1 | Osta Pariksha | 19.91 | 24.29 | 23.21 | 20.32 | 50.74 | 12.79 |
| 2 | Dantamoola Pariksha | 9.36 | 32.62 | 42.2 | 10.06 | 21.55 | 7.87 |
| 3 | Community Periodontal Index | 10.69 | 17.55 | 15.69 | 8.91 | 1.58 | 16.83 |
| 4 | Loss of Attachment | 19.35 | 21.36 | 20.73 | 22.58 | 21.75 | 23.33 |
| 5 | Danta Pariksha | 0.77 | 30.99 | 41.74 | 6.31 | 31.85 | 24.55 |
| 6 | Dentition Status | 16.12 | 37.3 | 48.5 | 15.72 | 39.36 | 34.13 |
| 7 | Enamel Opacities/Hypoplasia | 12.24 | 11.11 | 14.4 | 4.1 | 38.12 | 1.78 |
| 8 | Dental Flurosis | 4.43 | 29.35 | 38 | 3.24 | 27.8 | 24 |
| 9 | Prosthesis Status | 100 | 100 | 100 | 100 | 100 | 100 |
| 10 | Prosthetic need | 32.8 | 33.87 | 27.67 | 0 | 0 | 0 |
| III | Dentofacial Anamalties | | | | | | |
| 1 | Dentition Space | 7.4 | 23.61 | 26.48 | 9.18 | 47.21 | 21.44 |
| 2 | Occulsion | 8.87 | 6.35 | 9.7 | 11.15 | 10.45 | 5.74 |
| IV | Jihwa pariksha | 13.44 | 37.53 | 45.67 | 27.21 | 5.98 | 1.96 |
| V | Taaalu Pariksha | 18.94 | 18.61 | 19.79 | 22.56 | 11.87 | 13 |
| VI | Gala Pariksha | 100 | 100 | 100 | 78.95 | 18.49 | 18.49 |
| VII | Sarva sara Pariksha | 7.13 | 10.15 | 27.7 | 6.24 | 46.44 | 2.85 |
| VIII | Oral Hygiene Index | 11.66 | 19.46 | 30.04 | 7.99 | 11.92 | 18.18 |

DISCUSSION

Among the various parameters, Oral hygiene Index is showing the improvement in reading. As the oral health measures having direct effect in improving overall health status, it can be better understood that measures are concentrating on oral hygiene.

Subjects are getting relief of minor complaints related to oral health. So other aspect of oral health is also maintained by the practice of these measures regularly.

In Oral Hygiene Index assessments, the calculus index is not showing the much improvement where as the debris index is showing the improvement results. As among other parameters, Community Periodontal index and loss of attachment index are showing the improvement results. As procedures going to strengthen the gums, the loss of attachment is much reduced and hence improvement in parameters is appreciated.

In inclusion criteria, the other related disorders are excluded, hence no subjects have the complaints of prosthesis status and Prosthesis need and no subjects were reported as having the complaints of *Gala pariksha*.

Few cases were recorded with complaints of Tempo mandibular joint. No much improvement is observed in Tempo mandible Joint Assessment as the procedures are not going to correct the structural deformities in any way and hence no much improvement is observed in dento-facial anomalies, enamel opacities and dentition status.

In sarva sara pariksha, better results are appreciated as the combined efficacy of these measures shown improving effect.

CONCLUSION

Among the various parameters, Oral hygiene Index is showing the improvement in reading. (Reduction in Value=Improvement in Status). As per the counseling the subjects of study group, they are getting benefited with the practices and they are getting relief of minor complaints related to oral health. In Oral Hygiene Index assessments, the calculus index is not showing the much improvement where as the debris index is showing the improvement results. Among other parameters, Community Periodontal index and loss of attachment index are showing the improvement results. No subjects have the complaints of prosthesis status and Prosthesis need and no subjects were reported as having the complaints of *Gala pariksha*. Few cases were recorded with complaints of Tempo mandibular joint. No much improvement is observed in Tempo mandible Joint Assessment. No much improvement is observed in dento-facial anomalies, enamel opacities and dentition status.

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