Integration of AYUSH (Ayurveda and Yoga) with National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS): An Appraisal of Central Council for Research in Ayurvedic Sciences Research and Development Initiatives

ABSTRACT

Introduction: Noncommunicable diseases (NCDs) include cardiovascular diseases, diabetes, hypertension, stroke, cancer, etc. Such diseases mainly result from lifestyle-related factors, such as unhealthy diet, lack of physical activity, use of tobacco, etc. Changes in lifestyles, behavioral patterns, demographic profile, sociocultural and technological advancements lead to sharp increase in the prevalence of NCDs. These diseases, by and large, can be prevented by making simple changes in the way people live their lives or by simply changing our lifestyle.

Aims and objectives: Central Council of Research in Ayurvedic Sciences, Ministry of AYUSH in collaboration with Directorate General of Health Services, Ministry of Health and Family Welfare has implemented and executed a program, viz., Integration of AYUSH (Ayurveda) component with National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) program in the identified districts of three states, viz., Bhilwara (Rajasthan), Surendranagar (Gujarat), and Gaya (Bihar), with an aim to cater health care services and to reduce the burden of NCDs by combining the strength of Ayurveda and Yoga.

Materials and methods: This program has been implemented on a pilot basis in three districts of the three states at three district hospitals (DHs), 49 community health centers (CHCs), and 183 primary health centers (PHCs) (71 at Gaya, 37 at Surendranagar, and 75 at Bhilwara). In view of etiology of NCDs' pharmacological and nonpharmacological interventions, lifestyle and Yoga have been advocated. Sixteen common Ayurvedic medicines were identified for the prevention and management of the NCDs. Training to human resource was provided through various training programs before implementation.

Outcomes: The aforesaid program is successfully functional in 52 centers (49 CHCs and 3 DHs) of all the three identified districts. This program boosted the referrals and cross-referrals of patients among conventional and various AYUSH systems.

Keywords: Integration, Lifestyle, Noncommunicable disease.


Source of support: Nil
Conflict of interest: None

INTRODUCTION

Achievement of control over communicable diseases is a notable success during the last decade, but now, the NCDs have taken the front row leading to a considerable shift in the disease burden of the country from communicable to NCDs. Noncommunicable diseases kill 40 million people each year, equivalent to 70% of all deaths globally. Each year, 15 million people die from NCDs between the ages of 30 and 69 years; over 80% of these “premature” deaths occur in low- and middle-income countries. In India, as per the NCD country profile 2014 published by the World Health Organization, the overall mortality due to NCDs was 60%. The disease-specific share was for cardiovascular diseases—26%, cancers—7%, diabetes—2%, chronic obstructive pulmonary disease (COPD)—13%, and other NCDs—12%. Based on National Cancer Registry Programme of the Indian Council of Medical Research, it is estimated that there are about 28 lakh cases of different types of cancer in the country with new occurrence, about 11 lakh cases, and about 5 lakh deaths annually. The three most prevalent cancers in India are breast, cervical, and oral cancers.

Noncommunicable diseases are caused, to a larger extent, by four behavioral risk factors which are pervasive aspects of economic transition, rapid urbanization, and...
21st-century lifestyles: Tobacco use, unhealthy diet, insufficient physical activity, and the excessive use of alcohol. The greater effects of these risk factors fall increasingly on low and middle-income countries, and on poor people within all countries, mirroring the underlying socio-economic determinants. Detection, screening, and management of NCDs, as well as prevention of complications, are key components of therapeutic approach to NCDs. The NCDs require prolonged treatment and are expensive to treat. Thus, prevention and health promotion would be the key factors to reduce disease burden. In view of this, Government of India launched the NPCDCS in 2008 to prevent and control the projected increase in the burden of NCDs. This program has been implemented in 36 states (till March 2017) by Directorate of Health Services.

Potential of Ayurveda in Prevention and Management of NCDs

Ayurveda, an age-old science, gives foremost importance to maintenance of health in healthy individuals, i.e., prevention and thereafter management of diseases. According to Ayurveda, food (Pathya and Apathya) and lifestyle (Vihara) play a key role in the maintenance of health and in prevention of many diseases. This includes advocacy on food items (qualitative and quantitative), according to the disease. Further, the daily routine activities (Dinacharya), such as dental care, oil massage, Yoga exercise, physical activities, good conduct, mental health, and seasonal routine for maintenance of health are also described. Ayurveda emphasizes the practice of healthy lifestyle for healthy persons to prevent diseases and specific lifestyle modifications for different diseases to arrest the progress of the disease and complications. It was viewed that the potential of this unique contribution of Ayurveda may be adopted for the prevention of NCDs through food and lifestyle counseling.

The National Policy on Indian Systems of Medicine and Homeopathy (ISM and H policy), adopted in 2002, suggested phase-wise integration of ISM and H with health delivery systems. National Health Policy emphasizes on mainstreaming of AYUSH systems through integration and collocation for achievement on national goal and to reduce premature mortality from cardiovascular diseases, cancer, diabetes, or chronic respiratory diseases up to 25% by 2025.

During the past decade, the global emergence of integrative medicine has established that India has the potential to become a world leader in this sphere, if adequate support and opportunities for research and development is given. The integration will enable patients to choose the appropriate interventions. The Ministry also desires to generate the health data of population in relation to various disease preventive factors described in AYUSH systems. The AYUSH doctors can play a vital role in prevention and control of NCDs through primary health care network.

Keeping the strength of AYUSH systems for prevention and management of NCDs by promoting healthy lifestyle, “Integration of AYUSH (Ayurveda) with NPCDCS programme” was conceived in 2015 by the Ministry of AYUSH and Central Council of Research in Ayurvedic Sciences (CCRAS) in collaboration with the Directorate General of Health Services, for imparting health services on pilot basis. This would initially cover districts of three states, viz., Bhilwara (Rajasthan), Surendranagar (Gujarat), and Gaya (Bihar).

Objectives

- To integrate Ayurveda with the existing health care system for promotion, prevention, and control of NCDs through NPCDCS program.
- To ensure early diagnosis of NCDs for management through lifestyle and behavioral changes through the principles of Ayurveda.
- To reduce drug dependency in chronic cases through Ayurveda, Yoga practices, and lifestyle changes.
- To provide Ayurveda as an adjuvant therapy to reduce complications and associated symptoms.

MATERIALS AND METHODS

Study Site

This program has been implemented on pilot basis in three districts of the three states at CHC and PHC level, and the details of the program are depicted in Table 1.

Engagement of Human Resources

For this program, technical manpower from Ayurveda and Yoga discipline and supporting manpower for other secretarial work has been engaged on temporary basis. They have been placed at CHC/block PHC and DHs of the selected districts and at CCRAS headquarters. The details of the manpower engaged are depicted in Table 2.

The roles and responsibilities of each category of manpower have been well defined for smooth implementation of the program. The details are depicted in Table 3.

<table>
<thead>
<tr>
<th>State</th>
<th>Districts</th>
<th>No. of CHCs/Block PHCs + DHs</th>
<th>No. of PHCs in the district</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bihar</td>
<td>Gaya</td>
<td>17 CHCs/Block PHCs + 1 DH</td>
<td>71</td>
</tr>
<tr>
<td>Gujarat</td>
<td>Surendranagar</td>
<td>10 CHCs + 1 DH</td>
<td>37</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>Bhilwara</td>
<td>22 CHCs + 1 DH</td>
<td>75</td>
</tr>
<tr>
<td></td>
<td></td>
<td>49 CHCs and 3 DHs</td>
<td>183</td>
</tr>
</tbody>
</table>
INTERVENTIONS

In view of etiology of NCDs, pharmacological and non-pharmacological interventions have been advocated.

Pharmacological Interventions

Sixteen common classical Ayurvedic medicines have been identified in consultation with the experts for the prevention and management of the NCDs. The medicines have been procured from Good Manufacturing Practices-certified Ayurvedic pharmaceutical companies as per pharmacopoeial standards. The medicines were usually prescribed for 3 months or as required as per the discretion of the Ayurvedic doctors based on assessment of the condition of the patients and condition of the disease (Rogi Roga Pariksha). However, follow-up was done for another...
3 months after treatment. List of medicines with their doses is depicted in Table 4.

The medicines selected for disease conditions as mentioned in Table 4 are as per their classical indications.

Nonpharmacological Interventions

Diet and Lifestyle

It includes regulation of diets, lifestyle, and Yogic Asanas. Some advocacies on diet and lifestyles for prevention of NCDs are presented in Table 5.

Yogic Asanas

Some useful Asanas/Kriyas/Pranayam have been advocated for the NCDs under the supervision of Yoga experts. These are presented in Table 6.

Establishment of AYUSH NPCDCS Clinics/Lifestyle Clinics

For the establishment of AYUSH NPCDCS clinic/lifestyle clinics in all the selected CHCs and DHs, initially the concerned state health authorities were approached and made aware about this program as health is the state subject. The state authorities extended their support by providing space/rooms in CHCs/DHs premises. The feasibility in existing conditions of CHCs was surveyed and the in-charges of the CHCs/DHs were also made aware about the program through team visits and various meetings. The necessary equipments, namely blood pressure apparatus, stethoscope, weighing machine, thermometer, torch, measuring tape, height scale, were provided at every center. Apart from this, computer with internet facility was provided to each center for recording the data and communicating reports to the monitoring centers, i.e., CCRAS Institute, of concerned state and CCRAS headquarters.

Development of IEC Materials, Program Guidelines, and Training Manual

The information in the form of pamphlets on prevention and management of the selected NCDs through Ayurveda has been prepared and made available for wide distribution to the patients and general public in all the CHCs to create awareness. As a part of the implementation strategy, the AYUSH doctors are also disseminating healthy lifestyle advices and benefits of Yoga practices to the attending patients regularly. A detailed “Guidelines and Training Manual” has been prepared to depict approach and methodology to be adopted for screening and examination along with the selected Ayurveda and Yoga interventions.

Workshop/Training Program for the Engaged Manpower

The workshop/training programs were conducted at all the three selected districts to impart training to stakeholders about the modus operandi of the program. State health authorities also participated in the training program and emphasized the significance of integration and the importance of working in coordination for the success of the program. Various lectures on the NCDs like diabetes, hypertension, dyslipidemia, cancer, etc., and the methodology to be adopted were imparted in this program for better understanding and to work in a coordinated manner with a team spirit.

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Table 4: List of the selected classical ayurvedic medicines for the NCDs with their doses and dosage form

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Disease condition</th>
<th>Dose per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mamajjak capsule</td>
<td>Diabetes</td>
<td>1 gm BID</td>
</tr>
<tr>
<td>Arogyavardhini Vati</td>
<td>Obesity and dyslipidemia</td>
<td>500 mg BID (not more than 45 days)</td>
</tr>
<tr>
<td>Triphala Churna</td>
<td>Obesity and dyslipidemia</td>
<td>3 gm BID</td>
</tr>
<tr>
<td>Sarpagandha Mishrana</td>
<td>Hypertension</td>
<td>250 mg BID</td>
</tr>
<tr>
<td>Pravala Pishli</td>
<td>Hypertension</td>
<td>250 mg BID</td>
</tr>
<tr>
<td>Ashvagandha Churna</td>
<td>Cancer</td>
<td>3 gm BID</td>
</tr>
<tr>
<td>Guduchi Churna</td>
<td>Diabetes, cancer</td>
<td>3 gm BID</td>
</tr>
<tr>
<td>Amalaki Churna</td>
<td>Diabetes (Amlapitta)</td>
<td>3 gm BID</td>
</tr>
<tr>
<td>Ekangaveera Rasa</td>
<td>Stroke/Pakshaghat</td>
<td>125 mg BID</td>
</tr>
<tr>
<td>Haridra Khanda</td>
<td>COPD, chronic bronchitis, allergic bronchitis</td>
<td>3 gm BID</td>
</tr>
<tr>
<td>Tribhuvan Mishran</td>
<td>COPD, chronic bronchitis</td>
<td>1 Tab BID</td>
</tr>
<tr>
<td>Soma Churna</td>
<td>COPD</td>
<td>500 mg BID</td>
</tr>
<tr>
<td>Chitrakadi Gutika</td>
<td>Obesity and dyslipidemia</td>
<td>250 mg BID</td>
</tr>
<tr>
<td>Kutajghan Vati</td>
<td>Diabetes (Atisara, Grahani)</td>
<td>250 mg BID</td>
</tr>
<tr>
<td>Yograj Guggulu</td>
<td>Obesity and dyslipidemia</td>
<td>500 mg TID</td>
</tr>
<tr>
<td>Sitopaladi Churna</td>
<td>COPD, chronic bronchitis</td>
<td>3 gm BID</td>
</tr>
</tbody>
</table>
Further, the health camps are also being organized at DH/CHC level are being thoroughly screened for NCDs. The patients attending the AYUSH NPCDCS clinic at Screening of the NCD Patients

<table>
<thead>
<tr>
<th>The PROGRAM</th>
<th>Do’s</th>
<th>Don’ts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Intake of old harvested cereals, barley (Yava), Sorghum (Jowar), whole wheat atta, bitter gourd (Karela), green leafy vegetables, garlic (Lasuna), turmeric (Haridra), aloe (Kumar) in vegetables and fruits like guava, oranges, Indian blackberry (Jamun), etc.</td>
<td>• Sugarcane juice, jaggery, sugar, milk products</td>
</tr>
<tr>
<td></td>
<td>• Timely intake of diet</td>
<td>• Reduce intake of rice, food rich in carbohydrate, and fried or processed food</td>
</tr>
<tr>
<td></td>
<td>• Regular exercise especially walking</td>
<td>• Sedentary lifestyle</td>
</tr>
<tr>
<td></td>
<td>• Regular practice of Yoga, meditation, etc., under the supervision of Yoga specialist is suggested</td>
<td>• Sleeping in the day time and excessive sleeping</td>
</tr>
<tr>
<td></td>
<td>• Regular blood pressure check-up</td>
<td>• Alcohol</td>
</tr>
<tr>
<td></td>
<td>• Regular physical exercise</td>
<td>• Staying too long on empty stomach</td>
</tr>
<tr>
<td></td>
<td>• Daily brisk walking for half an hour</td>
<td>• Cold drinks, ice cream, burger-pizza, other fast foods, etc.</td>
</tr>
<tr>
<td></td>
<td>• Reduce intake of oily, salty, sour, and spicy food items</td>
<td>• Excessive intake of salt (sprinkling over salad, curd etc.)</td>
</tr>
<tr>
<td></td>
<td>• Weight reduction</td>
<td>• Excessive use of butter, ghee, chillies (red-green), pickles, sesame oil (Til taila), Bengal gram (Chana dal), mustard oil (Sarson ka Taila), sour fruits, curd, tea, coffee, etc.</td>
</tr>
<tr>
<td></td>
<td>• Barley (Yava), sorghum (Jowar), wheat, green gram (Mudga/moong dal), horse gram (Kulatha), moringa (Shigru), Bitter gourd (karela), bottle gourd (Ghia/Lauki), turpin (Shalgam), carrot (Gajar), radish (Muli), Indian gooseberry (Amla), cucumber (Khira), black grapes (Draksha), pomegranate (Anar), apple, pineapple, cold milk, etc.</td>
<td>• Intake of animal fat, processed/oily food items</td>
</tr>
<tr>
<td></td>
<td>• Timely sleeping and awakening</td>
<td>• Alcohol consumption and smoking</td>
</tr>
<tr>
<td></td>
<td>• Regular practice of Yoga and meditation under the supervision of Yoga expert</td>
<td>• Practice of day sleeping and awakening at night</td>
</tr>
</tbody>
</table>

Diabetes mellitus

- Do’s
- Don’ts

| Hypertension | • Regular blood pressure check-up | • Excessive intake of salt (sprinkling over salad, curd etc.) |
|--------------|• Regular physical exercise | • Excessive use of butter, ghee, chillies (red-green), pickles, sesame oil (Til taila), Bengal gram (Chana dal), mustard oil (Sarson ka Taila), sour fruits, curd, tea, coffee, etc. |
|--------------|• Daily brisk walking for half an hour | • Intake of animal fat, processed/oily food items |
|--------------|• Reduce intake of oily, salty, sour, and spicy food items | • Alcohol consumption and smoking |
|--------------|• Weight reduction | • Practice of day sleeping and awakening at night |
| Obesity      | • Barley (Yava), sorghum (jowar), wheat, green gram (Mudga/moong dal), horse gram (Kulatha), moringa (Shigru), Bitter gourd (karela), bottle gourd (Ghia/Lauki), turpin (Shalgam), carrot (Gajar), radish (Muli), Indian gooseberry (Amla), cucumber (Khira), black grapes (Draksha), pomegranate (Anar), apple, pineapple, cold milk, etc. | • Excessive intake of salt (sprinkling over salad, curd etc.) |
|--------------|• Timely sleeping and awakening | • Excessive use of butter, ghee, chillies (red-green), pickles, sesame oil (Til taila), Bengal gram (Chana dal), mustard oil (Sarson ka Taila), sour fruits, curd, tea, coffee, etc. |
|--------------|• Regular practice of Yoga and meditation under the supervision of Yoga expert | • Intake of animal fat, processed/oily food items |
| Dyslipidemia | • Take low-fat and low-calorie food items | • Alcohol consumption and smoking |
|--------------|• Take frequent small meals to avoid food cravings | • Practice of day sleeping and awakening at night |
|--------------|• Take more proteins to stay longer without food | • Excessive intake of salt (sprinkling over salad, curd etc.) |
|--------------|• Use warm water for drinking | • Excessive use of butter, ghee, chillies (red-green), pickles, sesame oil (Til taila), Bengal gram (Chana dal), mustard oil (Sarson ka Taila), sour fruits, curd, tea, coffee, etc. |
|--------------|• Include cabbage in daily meal. It will stop the conversion of sugars to fat | • Intake of animal fat, processed/oily food items |
|--------------|• Steamed, boiled and baked vegetables rather than fried | • Alcohol consumption and smoking |
|--------------|• Drink skimmed milk instead of whole milk | • Practice of day sleeping and awakening at night |
|--------------|• Include lemon in diet and drinks | • Excessive intake of salt (sprinkling over salad, curd etc.) |
|--------------|• Take healthy foods, such as oatmeal, walnuts, salads, bitter gourd (Karela), drumstick (Shigru), barley (Yava), wheat, honey (Madhu), Indian Gooseberry (Amla), pomegranate (Anar), snake gourd, etc. | • Excessive intake of salt (sprinkling over salad, curd etc.) |
|--------------|• Brisk morning walk of 30 minutes | • Excessive intake of salt (sprinkling over salad, curd etc.) |
|--------------|• Yoga and meditation to manage stress and fatigue | • Excessive intake of salt (sprinkling over salad, curd etc.) |

MODUS OPERANDI FOR THE EXECUTION OF THE PROGRAM

Screening of the NCD Patients

The patients attending the AYUSH NPCDCS clinic at DH/CHC level are being thoroughly screened for NCDs. Further, the health camps are also being organized at PHC level of selected districts on regular interval to screen the general population for NCDs and to sensitize them about the role of the faulty dietetic habits and lifestyles responsible for increasing incidence of NCDs along with creating awareness about the preventive measures to prevent the NCDs. A format has also been developed for the screening.
Facility for Regular Yoga Practice

The *Yoga Asanas* are being demonstrated and regularly put into practice by the Yoga Instructors at CHCs and DH level for the susceptible/diagnosed patients of NCDs. At each PHC level two volunteers (one male and one female) have been identified and trained by the Yoga Instructor who in turn provides regular yoga practices to general public at village level.

Treatment Protocol for NCDs through Ayurveda

Based on the screening, the subjects who were identified to be in the risk zone of NCDs or established NCD patients have been registered into two cohorts, i.e., predisease group (I) and disease group (II) and further subdivided into treatment groups A1, A2 and B1, B2. The patients in the early stages of NCDs mainly of diabetes, hypertension, and dyslipidemia have been focused. The case record forms have been designed for recording the data of registered patients. The schematic diagrams of the projects undertaken with integration of Ayurveda to NPCDCS program are depicted in Flow Charts 1 to 4.

CRF: Case Record Form; HbA1c: Glycated hemoglobin; LFT: Liver function test; KFT: Kidney function test; FBS: Fasting blood sugar; PPBS: Postprandial blood sugar; WHO QOL: World Health Organization quality of life

Program Monitoring

As the program is ongoing, a quarterly monitoring is being conducted regularly to assess the progress.

Treatment Period and Assessment

The registered patients are being provided Ayurvedic interventions for a period of 6 months. Till January 31, 2018, 301,102 patients have been screened and 59,107 patients have been enrolled under this program. The laboratory investigations, such as fasting blood sugar, postprandial blood sugar, glycated hemoglobin, liver function test, kidney function test, and lipid profile as required are being conducted (as per the availability of investigation facilities with state health authorities). The program is ongoing. At the end of the study, the comparison between groups A1 and A2 will give the efficacy of Ayurvedic medicine in the predisease condition. The comparison between groups B1 and B2 will give the efficacy of Ayurvedic medicine in the disease condition.

An interim analysis has revealed that the dosage or components of conventional medicines/prescription were either reduced or discontinued, in consultation and supervision of modern doctors, after integrating the intervention of Ayurveda, lifestyle modification, and Yoga in patients of diabetes, hypertension, and

<table>
<thead>
<tr>
<th>Name of the disease</th>
<th>Yoga Asanas</th>
<th>Pranayama</th>
<th>Kriya</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes mellitus</td>
<td>Suryanamaskara, Tadasana, Katichakrasana, Sarvangasana, Halasana, Matisyasana, Ushtrasana, Gomukhasana, Ardhamsyendrasana, Mandukasana, Paschimottanasana, Pavamuktasana, Bhujangasana, Shalabhasana, Dhanurasana, Vajrasana, Shavasana</td>
<td>Nadishodhana, Suryabhedi, Kapalbhati, Bhastrika</td>
<td>Kunjal, Kapalbhati, Agnisara</td>
</tr>
<tr>
<td>Hypertension</td>
<td>Tadasana, Katichakrasana, Konasana, Uttanapadasana, Pavamuktasana, Ushtrasana, Shashankasana, Bhujangasana, Gomukhasana, Makarasana, Vakrasana, Shavasana</td>
<td>Nadishodhana, Ujjayi, Shitali, Sitkari, and Bhramari</td>
<td>Jalneti</td>
</tr>
<tr>
<td>Obesity and dyslipidemia</td>
<td>Surya Namaskar, Tadasana, Katichakrasana, Konasana, Pavamuktasana, Ardha Padmasana, Padmasana, Paschimottanasana, Halasana, Bhujangasana, Shalabhasana, Dhanurasana, Naukasana, Navasana, Parvatasana, Vakrasana, Padahastasana, Vajrasana, Shashankasana, Sarvangasana, Ardhamsyendrasana, Shavasana</td>
<td>Nadishodhana, Suryabhedi, Kapalbhati, Bhastrika</td>
<td>Kunjal, Kapalbhati</td>
</tr>
<tr>
<td>Stroke</td>
<td>Surya Namaskar, Tadasana, Katichakrasana, Konasana, Pavamuktasana, Bhujangasana, Uttanapadasana (Ekpad), Vakrasana, Makarasana, Ardshalabhasana, Shavasan</td>
<td>Nadishodhana, Suryabhedi, Kapalbhati</td>
<td>Bhastrika</td>
</tr>
<tr>
<td>Cancer</td>
<td>Surya Namaskar, Tadasana, Ushtrasana, Vakrasana, Gomukhasana, Bhujangasana, Shalabhasana, Dhanurasana, Simhasana, Shavasana</td>
<td>Nadishodhana, Ujjai, Shitali, Sitkari, Bhastrika</td>
<td>Kapalbhati</td>
</tr>
<tr>
<td>Rheumatic heart disease</td>
<td>Tadasana, Katichakrasana, Konasana, Pavamuktasana, Makarasana, Bhujangasana, Shalabhasana, Vakrasana, Paschimottanasana, Ushtrasana</td>
<td>Nadishodhana, Bhastrika, Kapalbhati, Suryabhedi</td>
<td>Suryabhedi</td>
</tr>
<tr>
<td>COPD</td>
<td>Surya Namaskar, Tadasana, Katichakrasana, Konasana, Pavamuktasana, Setubandhasan, Ushtrasan, Bhujangasan, Dhanurasan, Gomukhasan, Vajrasan, Vakrasan</td>
<td>Bhastrika, Kapalbhati, Suryabhedi, Ujjai</td>
<td>Agnisara, Jalaneli, Vamandhouti (Kunjai), Kapalbhati</td>
</tr>
</tbody>
</table>

Table 6: Some Yoga Asanas for NCDs
Flow Chart 1: Methodology adopted for diabetes

- Prediabetic (with or without associated illness) (FBS = 100-125 mg/dL, PPBS = 140-199 mg/dL)
  - If yes, then treat either as in group A-1 or A2

Group A-1
- Lifestyle modifications
- Yogic practices (in consultation with yoga instructor)

Group A-2
- Ayurvedic medicine
- Lifestyle modifications
- Yogic practices

- Diabetic (with or without complication) (FBS >125 mg/dL, PPBS >199 mg/dL)
  - If yes, then treat either as in group B1-1 or B2

Group B-1
- Lifestyle modifications
- Yogic practices
- Conventional treatment

Group B-2
- Ayurvedic medicine
- Lifestyle modifications
- Yogic practices
- Conventional treatment

Flow Chart 2: Methodology adopted for hypertension

- Prehypertensive
  - Isolated systolic hypertension
    - Systolic 120-139
    - Diastolic ≥140

- Hypertensive
  - Systolic ≥140
  - Diastolic ≥90

If yes, then treat in group A-1 or A-2

Group A-1
- Lifestyle modifications
- Yogic practices

Group A-2
- Ayurvedic medicine
- Lifestyle modifications
- Yogic practices

- Group B-1
  - Conventional treatment
  - Lifestyle modifications
  - Yogic practices

- Group B-2
  - Ayurvedic medicine
  - Conventional treatment
  - Lifestyle modifications
  - Yogic practices

Flow Chart 3: Methodology adopted for dyslipidemia

- Borderline high lipid levels
  - Blood lipids
    - Total cholesterol 200-239
    - LDL cholesterol 130-159
    - Serum triglycerides <150

- High lipid levels
  - Blood lipids
    - Total cholesterol >240
    - LDL cholesterol ≥160
    - Serum triglycerides ≥150

If yes, then treat in group A-1 or A-2

Group A-1
- Lifestyle modifications
- Yogic practices

Group A-2
- Ayurvedic medicine
- Lifestyle modifications
- Yogic practices

- Group B-1
  - Conventional treatment
  - Lifestyle modifications
  - Yogic practices

- Group B-2
  - Ayurvedic medicine
  - Conventional treatment
  - Lifestyle modifications
  - Yogic practices
dyslipidemia. Ayurveda—modern medicine integrative health care services—seems to be a successful attempt of functional integration through delivering in the context of NCDs with encouraging benefits of standalone Ayurveda therapies as well as benefits as add-on therapies.

CONCLUSION

The Integration of AYUSH (Ayurveda) with NPCDCS program has been successfully launched at three identified districts, viz., Bhilwada, Surendra Nagar, and Gaya of Rajasthan, Gujarat, and Bihar states, respectively, by CCRAS through Ministry of AYUSH and Directorate General of Health Services, and the study is continuing.

Present integration of AYUSH with NPCDCS program at grassroots level will be a useful tool for future action plan and to take appropriate policy decisions for integration, which will further help to control and manage the disease burden. Strengthening of health care network by utilizing the services of AYUSH doctors can be adopted for the prevention and control of NCDs through primary health care network.

REFERENCES

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हिंदी सारांश

कैंसर, मधुमेह, हड्डीरोग एवं आयुष (आयुर्वेद) के रूकथाम एवं नियंत्रण हेतु राष्ट्रीय कार्यक्रम (एनपीसीडीसीएस) के साथ आयुष (आयुर्वेद एवं योग) का एकीकरण—सीसीआरएस की पहल

1. रेनु सिंह, 2. शायद अंकुश, 3. आश कुलवार, 4. संयोग राती, 5. अरुण भुजुल, 6. सुभाष दिवाल, 7. रियाजुद्दीन शोहाब, 8. कर्णनाथ एस. धीमान

पृष्ठभुक्ति: गैर संचारी रोगों जैसे इद्दर रोग, मधुमेह, उच्च रक्तचाप, आपात और कैंसर के लिए कुरुक्षेत्र, अस्पताल भोजन, शारीरिक क्रियाकलापों में कर्मी व समाज का प्रयोग जैसी जीवनशैली गृह रूप से जिम्मेदार है। अपनी जीवनशैली में परिवर्तन करके इन रोगों का निवारण किया जा सकता है।

लक्ष्य और उद्देश्य: सीसीआरएस एवं आयुष मंत्रालय ने डीजीएचएस, स्वास्थ्य एवं परिवार कल्याण मंत्रालय के सहयोग से गैर संचारी रोगों के रोकथाम एवं नियंत्रण के उद्देश्य से योग एवं आयुर्वेद को सम्भोल करते हुए एक राष्ट्रीय कार्यक्रम एन.पी.सी.डी.सी.एस के साथ शुरू किया जो देश में जीवन शैली के विभिन्न जिलों क्षेत्र में भीलवाड़ा (राजस्थान), सुडेरनगर (पुजारा) एवं गया (बिहार) में संचालित है।

सामग्री और प्रक्रिया: इस कार्यक्रम का कार्यगत वर्तमान पावनस्थल राशि पर 3 जिलों के 3 जिला अस्पतालों, 49 सामान्यक्ष रक्तदाता केंद्र (पीएचसी) और 183 प्राथमिक रक्तदाता केंद्र (पीएचली) (गया में 71, सुडेरनगर में 37 एवं भीलवाड़ में 75) में किया गया। एनपीसीडीसीएस के इन्दुओं को इसके लिए इन जिलों एवं अभ्यास विकल्पों के साथ-साथ जीवनशैली परिवर्तन एवं योग विकास का समावेश किया गया। एनपीसीडीसीएस के निवारण और प्रबंधन में 16 सामान्य आयुर्वेदिक आयुर्विज्ञान का उपयोग किया गया।

परिणाम: उपरुपुर कार्यक्रम सामान्यपायक्त 3 विभिन्न जिलों के 52 केंद्रों (49 पीएचसी और 3 जिला अस्पताल) में चल रहा है। इस कार्यक्रम में परामर्शीकरण एवं विभिन्न आयुष प्राणियों में स्रोतों के नया रेडियल और कोई रेडियल को मृत्यु किया गया।