Common Risk Factor Approach: Finding Common Ground for Better Health Outcomes

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ABSTRACT

The Common Risk Factor Approach (CRFA) is a method used to create cross-disciplinary health promotion programs sharing common risk factors for disease. Many of the behavioural risk factors negatively impacting oral health also have a detrimental effect on overall health. The present review provides an overview of the evolution and the Rationale of CRFA, the various CRFA integrated public health programs and Advocacy policy initiatives. The fact that the common risk factors approach has been highly influential in integrating oral health into general health improvement strategies; it can be greatly be adapted to major public health initiatives to tackle the Non-communicable disease [NCD] burden. Taking this combined approach, the dental health professionals can effectively reduce the morbidity and mortality from chronic diseases and decrease the incidence of oral diseases, by working within and between their professional organizations to find enduring solutions.

Keywords: Common Risk Factor, Better Health Outcomes

INTRODUCTION

The World Health Professional Alliance (WHPA) acclaimed that "the global epidemic of non-communicable diseases (NCDs) has become a significant threat to human health and development and unless urgently addressed, the burden of NCDs would continue its dramatic increase". It declared that non-communicable diseases should be viewed in a holistic way as a combined threat to global health.

NCDs including cardiovascular disease, some cancers, chronic respiratory diseases, diabetes, mental disorders and oral disease – accounted for more than 60% of global deaths, killing 36 million people in 2008, many prematurely. And 80 per cent of these deaths occurred in low and middle income countries. Oral diseases, including dental caries, periodontal disease and oral cancer, are neglected but important NCDs with a significant burden on overall health.[1] There is a need for a single strategy to prevent and manage non-communicable diseases. The Multiple Risk Factor Intervention Trial (MRFIT) emphasized the limitations of the lifestyle approach wherein Health professionals have traditionally focused upon changing the behaviours of their patients for promoting health and preventing disease, but failed to understand that there were problems related to social and cultural milieu rather than of the individual. This paved in the path for Common Risk Factor Approach (CRFA) revolutionising the concept that Oral health problems have risk factor in common with a number of important chronic diseases, and it's inefficient to target each disease separately when they have similar origins.[2] By integrating oral health into strategies for promoting general health and by assessing oral needs in socio-dental ways, health planners can greatly enhance both general and oral health thus leading to an improvement in quality of life.

Many oral health programs are developed and implemented in isolation from other health programs leads at best to a duplication of efforts, or worse conflicting messages being delivered to the public.[3] The WHPA statement on NCDs and Social determinants (2010) emphasised that the four main risk factors are tobacco use, unhealthy diet, physical inactivity and harmful use of alcohol. The role oral biofilm plays in the development of NCDs is a recently studied relationship[4], which suggests the host response to pathogenic organisms contained in oral biofilm may be a risk factor for the four major NCDs, cancer, CVDs, respiratory diseases and diabetes. Nevertheless, the common risk factors between general and oral health provide a rationale for dental health professionals to partner with community members to develop health promotion programs that will benefit a multitude of individuals.

Hence, in order to make a meaningful reduction in NCDs, it is crucial to tackle the social determinants of health that contribute to the increase in the NCD burden, since the behavioural preventive approach alone will have minimal impact in tackling oral health inequalities and indeed may widen inequalities across the population.[5] Based on this lines, a conceptual model was proposed which showed the importance of clustering of risk factors common to a number of diseases and the social structures that influence individual's health risks.[2] The key concept underlying the integrated CRFA is that promoting general health by controlling a small no. of risk factors may have a major impact on a large number of diseases at a lower cost, greater efficiency and effectiveness than disease specific approaches. The scientific literature states that there are few on-going studies across the world incorporating CRFA for achieving better health outcomes in their targeted population. A recent prospective cohort study in Australia has integrated CRFA to address socio-economic inequality in the oral health of pre-school children and they are in the lines to provide a high level evidence of pathways through which socio-environmental factors impact child oral health, combined with an opportunity to examine the relationship between oral health and childhood overweight.[6] A Randomized Controlled Trial in USA has been initiated with a multi-level strategy implementing CRFA to reduce paediatric obesity and dental caries risk in South

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Asian (SA) immigrant children who carries high risk for these diseases, as they have been disproportionately seen to impact low-income children and share common risk behaviours, i.e., feeding practices. This study project is titled as CHALO ("Child Health Action to Lower Oral Health and Obesity") and aimed to effectively reduce or prevent the occurrence of such diseases in infancy and early childhood.[7] World Health Organization has identified "Public health approach of primary prevention is considered to be the most cost-effective, affordable and sustainable course of action to cope with the chronic disease epidemic worldwide. The adoption of a common risk-factor approach to chronic disease prevention is a major development in the thinking behind an integrated health policy.[8]" Globally, the concept of CRFA is gaining the momentum over the last decade, for its widespread implementation in various health promotion initiatives.

Hence, the authors considered to present this review with the following objectives:

- To discuss the Common Risk Factor Approach (CRFA) based programs for target groups in place in various parts of the world.
- Various Advocacy Initiatives pertained to CRFA
- To Discuss about the Indian Scenario, the Need for CRFA and its Adoption.
- To Evaluate the Strengths, Weakness, Opportunity and Threat of CRFA

METHODS

A search strategy was done in 04 electronic databases and e-books, for English-language source, published over the period 2000-2017 for the topics of Common Risk Factor Approach in oral health promotion, integration of CRFA to tackle oral health inequity, CRFA integrated health promotion programs, Advocacy and policy implications pertained to CRFA. Hand searching was additionally conducted in relevant research methodology books. The intent of this literature search was to identify and review various CRFA integrated health promotion initiatives, possibility of the adoption to Indian scenario and to do SWOT Analysis of the same in this review.

RESULTS

A number of health promotion initiatives among various target groups seek to incorporate and strengthen CRFA. Multiple programs have been incorporating components of CRFA in tackling the risk factors of Non Communicable Diseases.

CRFA BASED PROGRAMS ACROSS DIFFERENT TARGET GROUPS

I. CRFA Program for Pregnant and Lactating Women

1. Maternal and Child Health Epidemiology Program

The program was developed by: CDC, Atlanta, USA, targeting the Pregnant and lactating women and children below the age of 5 years, wherein the program provided the benefit of Health education, capacity building, empowerment, prevention strategies towards MCH Diseases addressing the various risk factors like Diet, hygiene, alcohol, tobacco, stress. The program led to the reduction in respiratory illness, maternal mortality, accidents and injuries.[9]

2. Chinese Immigrant Mothers Health (ChiME) Programme

This program was developed by: Prof Free Ruthman, 2007 in Scotland, targeting the Chinese Immigrant mothers with newly born infants, which consisted of Home visiting health care addressing specifically the risk factors like diet and hygiene. The program empowered mothers with Health (nutrition and weaning) and oral health knowledge. Improved Physical and emotional caring for babies.[10]

II. *CRFA based Program for Children*

1. Women, Infants, and Children (WIC) Program

This program was developed by United states Department of Agriculture, mainly for Low-income women, infants and children up to age five who are at nutritional risk. The program extended federal funds for providing Supplemental foods along with health care referrals and nutrition counseling with oral health education. The outcome of this program was reduction in Nutritional deficiency diseases, maternal mortality rate, early childhood caries, incidence of diahorrea and respiratory symptoms.[11]

2. WHO – Health Promoting School

The concept was developed by WHO's Global School Health Initiative, in 1995 looking towards overall health promotion of the school children, school personnel, families and other members of the community, through schools. The program was successful in Improving the Nutrition and diet, Prevention of Oral disease and Trauma and Other NCDs.[12] It also led to capacity building measures and empowerment for the dental work force for community-Based Learning opportunities conducive to Careers in Rural Practice.[13]

III. *CRFA based Program for Adolescents*

Adolescent Health program

The program was developed by Department of State Health Services, Texas targeting the Adolescents in Schools, Colleges and Organization for extending health consultation, Technical Assistance and Health education. The program reached to address various risk factors deemed to be commonly affecting the teenagers / Adolescents like Improper Diet, Tobacco, Alcohol, Trauma, stress and Physical Inactivity. The outcome of the program observed reduction in the prevalence of oral disease, reduction in obesity, usage of tobacco and alcohol, Decrease in incidence of teen pregnancy.[14]

IV. *CRFA based Program for Elderly*

Program of All-Inclusive Care for the Elderly (PACE)

This was developed by the Senior Health Services in San Francisco, California for the elderly population, who is 55 years or older; staying at Nursing Facility level of care; and living in the PACE organization service area. The program extended Health care services, Health Education and Diet Counseling. Various risk factors were focused during the program like Diet, Hygiene, Tobacco and Alcohol, Stress and physical inactivity. Over the years, the program observed improved nutritional status, Reduction in Obesity, cardiovascular diseases and oral diseases among the people of PACE.[15]

V. CRFA based Program for People with Disability

Illinois Disability and Health Program

The program was developed by Illinois Department of Public Health and the University of Illinois at Chicago for the health

welfare of the disabled people, where the program catered various health measures for Capacity building and the empowerment of the disabled population, which could specifically help them to overcome the risk factors like Diet, Trauma, Stress and Physical inactivity. The program observed reduction in physical inactivity, obesity, hypertension, and Cardiovascular Disease among the disable people in Illinois.[16]

VARIOUS ADVOCACY INITIATIVES FOCUSING ON COMMON RISK FACTOR APPROACH

- **The Liverpool Declaration:** Promoting Oral Health in the 21st Century which evolved in 8th World Congress on Preventive Dentistry (WCPD) September 2005 in Liverpool, United Kingdom has stated that countries should provide evidence-based programmes for the promotion of healthy lifestyles and the reduction of modifiable risk factors common to oral and general chronic diseases.[17]
- **Council of European Dentists (CED) passed a Resolution in CED General Meeting in 2011** has stated that **t**he common-risk factor approach implies a greater integration of oral health into general health promotion, which is all the more necessary given that oral health itself is a determinant of general health and also needs to take account of the differing needs of different population groups according to their lifestyles, life stages and life conditions.[18]
- **WHPA NCD advocacy and awareness raising campaign** [Geneva, Switzerland, May 2011] - World Health Professions Alliance WHPA, representing more than 26 million health professionals in 130 countries, declared that non-communicable diseases should be viewed in a holistic way as a combined threat to global health.[19]
- **FDI's Call for oral disease to be in UN NCD list** - FDI has called for oral disease to be integrated into the current list of non-communicable diseases (NCDs) – which comprises only cancer, diabetes and respiratory and cardiovascular diseases – for priority action within the United Nations and WHO.[20]

INDIAN SCENARIO- THE NEED FOR CRFA

India faces a combined burden of communicable diseases and chronic diseases, with the burden of chronic diseases just exceeding that of communicable diseases. The proportion of the burden of Non-Communicable Diseases (NCDs) is expected to increase to 57% by 2020 across the world. Estimated mortality due to NCDs in India is 8 million deaths per year**.** >75% of the deaths are projected to be due to NCDs by 2020.[21]

Reasons for rise in NCD burden

1. **Transition in economics and nutrition** due to Urban lifestyle and food patterns**,** decreased Intake of fruits and vegetables and Increased intake of tobacco and alcohol
2. **Urbanization and sedentary lifestyle** leading to Decreased Physical activity**,** BMI rise above 25 **and** enhanced stress levels

ADVOCACY ON CRFA IN INDIA

National Program on Prevention of Non-Communicable Chronic Diseases (NPPNCCD)

Goal:

To reduce morbidity due to NCCDs, raise awareness to reduce the main shared modifiable risk factors for NCCD, and accord priority at National level to NCCDs

Objectives

- To effectively raise the priority accorded to NCCD in developmental work at National levels and lobby to integrate prevention and control of such diseases into policies across all government departments.
- To promote interventions to reduce the main shared modifiable risk factors for NCCD: tobacco use, unhealthy diets, physical inactivity and harmful use of alcohol
- To effectively use research for prevention and control of NCCD
- To build and promote partnerships for prevention and control of NCCD.[22]

Evaluation of CRFA in India

A multi-centric study evaluating the community-based interventions for non-communicable diseases recommended that the CRFA approach addressing diet, tobacco, exercise through advocacy and mediation with stakeholders, training of volunteers and school teachers, communication campaigns, risk assessment camps and reorientation of health services was found to be effective in mitigating the NCD burden to an extent. Further follow up is required to measure the long term effectiveness of the program.[23]

Recommendations for adopting CRFA in India to reduce the NCD burden

- Emphasis on shared modifiable risk factors and unification of disease specific health programs by NGOs.
- Health Promotion settings based approach (school, work place, village)
- Capacity building of stakeholders- health care providers, policy makers, health economists and the general public to adopt CRFA

Strengths	Focus on underlying common determinants of health Has a major impact on a large amount of diseases at a lower cost. Greater efficiency and effectiveness than disease specific approach. Community participation rather than professionally dominated activities. Working in partnership across sectors and disciplines. Adopt a range of complementary public health policies rather than individually focused health education. Reduces Social inequalities in relation to oral health care
Weakness	The approach is limited to few Non-Communicable diseases but not all Non Communicable Diseases
Opportunity	Incorporate oral health promotion into general health promotion eg. Adoption in Food Policy, Health Promoting Schools etc.
Threat	Difficulty in Implementing, Lack of capacity building measures to implement such programmes.

Table-1 - SWOT Analysis for CRFA

- Public Health education, communication and risk assessment campaigns should focus on all the shared modifiable risk factors

CONCLUSION

The potential benefits of Common Risk Factor Approach are far greater than isolated interventions. It would be beneficial if the target audience includes the policy makers and key stakeholders as well who would bring about a change for a sustainable and improved oral health. The need of the hour is that the common risk factors between general and oral health provide a rationale for dental health professionals to partner with community members to develop health promotion programs that will benefit a multitude of individuals.

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