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Dental Hygiene for Good Health

[1]Dr. Neelima Vanukuru, [2]Dr. Srinivasa Rao Vanukuru,
[1] Internee, Government Dental College, Osmania Hospital, Hyderabad
[2]Lecturer in Physics, Government Degree College, Rampachodavaram, E.G.Dt.,

Abstract
Everyone wants to have a great smile which is why good oral hygiene is important! Many people, however, don't understand how crucial oral health is to our total health picture. Having poor oral hygiene can lead to a variety of dental and medical problems in the future. Tooth problems can lead to diabetes, heart disease, systemic infections, an inability to eat or speak properly and other maladies – some life-threatening. Crooked or crowded teeth can contribute to gum disease that can eventually lead to tooth loss. Poor oral hygiene invites plaque to accumulate around the base of your teeth and gum line, causing your gums to become red and inflamed. Taking care of teeth at home can help to maintain everyone dental health and prevent periodontal, or gum, disease from developing. Achieving healthy teeth takes a lifetime of care. Even if someone says that you have nice teeth, it's crucial to take the right steps every day to take care of them and prevent problems. This involves getting the right oral care products, as well as being mindful of your daily habits. Regular checkups and cleanings can prevent these problems as well as provide you with good oral hygiene. Best Practices for Healthy Teeth are discussed in this paper. Straight teeth are no longer just for looks.
Key words: Dental, Hygiene, Good Health, environment

Introduction:

"It is time for us not to think of our mouths as somehow disconnected from the rest of our bodies. The same blood flows through them, the same nerves go to them. To have a healthy body, you need a healthy mouth."

For many years people in public health have attempted to develop educational programs which stress the importance of adequate professional and personal health care services. The public has been told repeatedly through public health programs and commercial advertising media that tooth brushing to achieve a clean oral environment is a particularly important aspect of personal health care.
Plaque control is the regular removal of microbial plaque and the prevention of its accumulation on the teeth and adjacent gingival surfaces. Microbial plaque is the major etiology of periodontal diseases and is related to dental caries. Microbial plague control is an effective way if treating and preventing gingivitis (gum disease) and is critical part of all the procedures involved in the treatment and prevention of periodontal diseases. Carefully performed daily home plague control, combined with frequent professionally delivered plaque and calculus removal, reduces the amount of plague; decreases the total number of microorganisms and greatly reduces the quantity of periodontal pathogens. Microbial plaque growth occurs within hours, and it must be completely removed at least once a day. The American Dental Association (ADA) recommends that individuals brush twice a day and use floss or other interdental cleaners once per day to effectively remove microbial

plague and prevent gum diseases. They recommendation twice daily brushing because most individuals do not adequately remove microbial plaque at one brushing and doing it a second time improves the results.
Chemical inhibitors of plaque and calculus that are incorporated in mouth washes or tooth pastes also play important roles in controlling microbial plaque. Also fluorides delivered through tooth pastes and mouth rinses are essential for caries control. Many products are available as adjunctive agents to mechanical techniques.

These medicaments, as with drug, are recommended according to the needs of each individual.

Maintaining Good Dental Care Habits:

Taking care of your teeth at home can help you maintain your dental health and prevent periodontal, or gum, disease from developing.

Richard H. Price, DMD, spokesperson for the American Dental Association and a former clinical instructor at the Boston University Henry M. Goldman School of Dental Medicine, says regular home care should include daily brushing and flossing. “My advice is to brush thoroughly, at least twice a day, once in the morning and once in the evening before going to bed,” says Dr. Price. “Be sure to floss at least once a day. I do it after every meal when I can.” Proper dental care at home, combined with seeing your dentist regularly, is your ticket to good dental health, says Price, who is retired from a 35-year private group dental practice in Newton, Mass.

Dental Health at Home: “Use products that have the ADA (American Dental Association) seal," says Price. "This means that the products — toothbrush, toothpaste, floss, etc. — are safe to use as directed and will keep your mouth healthy — no gum disease, no cavities."

Here are some basic principles to follow:
Spend at least three minutes brushing your teeth two times a day. Use a timer if you have to to ensure that you're spending enough time on your oral care routine.

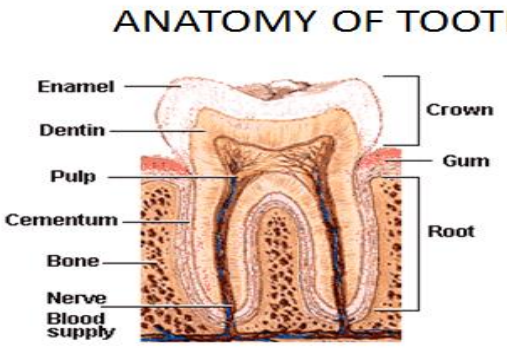
- Use floss at least once a day every day to clean between your teeth.
- Buy ADA-approved dental cleaning tools and toothpaste.

“Basically, brush and floss, and do it correctly,” says Price.

The goal of regular home care is to combat the buildup of plaque in and around your teeth and gums, and fight bad breath, tooth decay, and gum disease. Adults who neglect their teeth and who let plaque build up often develop infections in the delicate tissue around their teeth, Price explains.

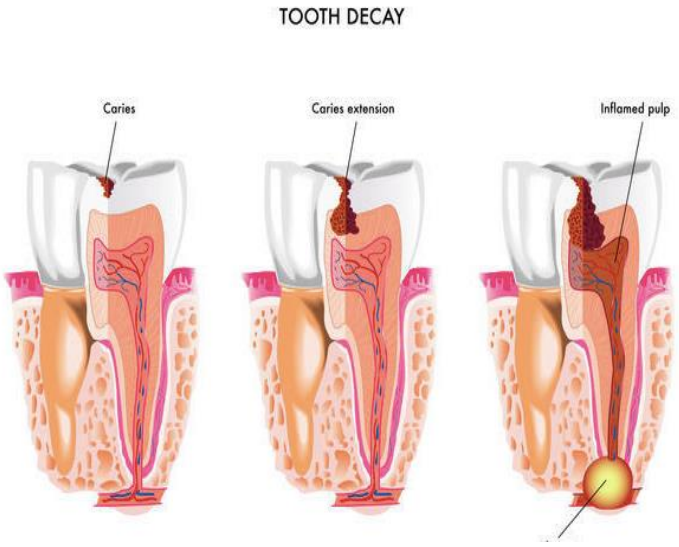
A whole arsenal of dental health tools is available in drugstores to help you clean your teeth at home. These range from regular toothbrushes to power toothbrushes, inter-dental cleaners (picks, etc.), waxed and unwaxed floss, oral irrigators, and mouth rinses. You should ask your dentist which of these

tools you might want to include in your daily cleaning routine.



Consequences of Poor Oral Hygiene

Poor oral hygiene invites plaque to accumulate around the base of your teeth and gum line, causing your gums to become red and inflamed. "Plaque is the bacteria-laden film that, if allowed to accumulate on teeth and gums, will cause tooth decay and gum disease," Price explains. If you neglect the care of your teeth at home and fail to go to the dentist regularly, accumulated plaque could potentially lead to the development of empty spaces around your teeth. These spaces could eventually lead to the destruction of bone and other fragile tissues supporting your teeth, and you could lose your teeth.



The good news is that being diligent about your dental health care and getting regular dental checkups can prevent plaque from forming and even reverse early gum disease. "A plaque-free mouth is a healthy mouth," says Price. Along with regular dental checkups, "proper bushing and flossing are the only effective ways I know of preventing plaque buildup."

Plaque Control Measures

Plaque control is the removal of microbial plaque and the prevention of its accumulation on the teeth and adjacent gingival (gum) surfaces. Plaque control can be done by following mechanical or chemical measures.

Mechanical plaque control can be done with manual or powered tooth brushes; inter dental tooth brushes like proxa brushes, uni tufted brushes, miniature bottle brush; inter dental cleaning aids like knitting yarns, pipe cleaners, gauze strips, dental floss; inter dental stimulators like perio aids, rubber stimulators, wooden stimulators and also oral irrigation devices.

When recommending a particular tooth brush, ease of use and the perception that the brush works well are important considerations. Tooth brushes must be replaced periodically, although the amount of visible bristle wear does not appear to affect plaque removal for up to 9 weeks. The ADA recommends that tooth brushes be replaced every 3 to 4 months. Soft, nylon bristle tooth brushes clean effectively when used properly, remain effective for a reasonable time, and tend not to traumatize the gum or root surfaces. Powered tooth brushes with oscillating and rotating motions remove plaque and reduce gum bleeding slightly better than manual toothbrushes. Powered tooth brushes are more helpful for poor brushers. Brushing with either a manual or a powered tooth brush requires a systemic routine to clean all the accessible areas. Tooth pastes (Dentifrices) increase the effectiveness of brushing. Products containing fluorides and antimicrobial agents provide additional benefits for controlling tooth decay and gum diseases.

Dental floss is the most widely recommended tool for removing plaque from the interdental tooth surfaces. Floss is made from nylon filaments or plastic monofilaments, and can be waxed, un

waxed, thick, thin, and even flavored. Clinical research has demonstrated no significant differences in the ability of the various types of floss to remove dental plaque; they all work equally well. Factors influencing the choice of dental floss include the tightness of tooth contacts, roughness of tooth surfaces, and the person's manual dexterity, mot the superiority of any one product. Therefore recommendations about type of floss should be based on ease of use and personal preference. The benefits of interdental cleaning using dental floss are undisputed. Flossing improves the oral hygiene, reduces gum bleeding, removes food debris and controls bad breath.

A wide variety of interdental cleaning devices are available for removing microbial plaque from between the teeth. The most common types are conical or cylindrical brushes, tapered wooden tooth picks that are round or triangular in cross section, and single tufted brushes. Many interdental brushes have handles for convenient manipulation around the Collective procedures in oral physiotherapy are properly performed for the maintenance of personal hygiene of the mouth, those procedures necessary for cleanliness, tissue stimulation, tone and preservation of the dentition.

Anti-plaque agents are the chemical substances used for plaque control and calculus formation. Ideal properties of anti-plaque agents are it eliminates

10 Best Practices for Healthy Teeth

Achieving healthy teeth takes a lifetime of care. Even if you've been told that you have nice teeth, it's crucial to take the right steps every day to take care of them and prevent problems. This involves getting the right oral care products, as well as being mindful of your daily habits.

teeth and in posterior areas. Gauze strips are indicated to clean interdental areas that are widely spaced.

Rubber interdental stimulators made of hard rubber are placed on the brush handles opposite to the bristle end. The rubber tip should be inserted gently into the open inter dental areas and rotated slowly. The side of the core rubs against the soft tissue producing a massage effect.Oral irrigators for daily home use work by directing a pulsating stream of water through a nozzle to the tooth surfaces. Oral irrigators clean non adherent bacteria and debris from the oral cavity more effectively from inaccessible areas reducing the accumulation of microbial plaque and calculus. Oral irrigators used with dilute solutions of effective antimicrobial agents reduce gum diseases. The use of cosmetic oral rinses and pre brushing rinses should not be used to replace proven mechanical and chemical means of plaque removal but can be useful if person perceive benefits from them.

pathologic bacteria only prevents development of resistant bacteria exhibits substantivity,safe to the oral tissues at recommended dosage and concentration, significantly reduces plaque and gum diseases, inhibits the calcification of plaque to calculus, does not stain the teeth or alter the taste, no adverse effects on the teeth or dental materials, easy to use and economical.

ORAL HYGIENE PRACTICES

1. Don't go to bed without brushing your teeth.

It's no secret that the general recommendation is to brush at least twice a day. Still, many of us continue to neglect brushing our teeth at night. But brushing before bed gets rid of the germs and plaque that accumulate throughout the day.

2. Brush properly.

The way you brush is equally important — in fact, doing a poor job of brushing your teeth is almost as bad as not brushing at all. Take your time, moving the toothbrush in gentle, circular motions to remove plaque. Unremoved plaque can harden, leading to calculus buildup and gingivitis (early gum disease).

3. Don't neglect your tongue.

Plaque can also build up on your tongue. Not only can this lead to bad mouth odor, but it can lead to other oral health problems. Gently brush your tongue every time you brush your teeth.

4. Use a fluoride toothpaste.

When it comes to toothpaste, there are more important elements to look for than whitening power and flavors. No matter which version you choose, make sure it contains fluoride.

While fluoride has come under scrutiny by those worried about how it impacts other areas of health, this substance remains a mainstay in oral health. This is because fluoride is a leading defense against tooth decay. It works by fighting germs that can lead to decay, as well as providing a protective barrier for your teeth.

5. Treat flossing as important as brushing.

Many who brush regularly neglect to floss. "Flossing is not just for getting those little pieces of Chinese food or broccoli that may be getting stuck in between your teeth,"
says Jonathan Schwartz, D.D.S., who practices at Manhattan Dental Health. "It's really a way to stimulate the gums, reduce plaque, and help lower inflammation in the area."
Flossing once a day is usually enough to reap these benefits.

6. Don't let flossing difficulties stop you.

Flossing can be difficult, especially for young children and older adults with arthritis. Rather than give up, look for tools that can help you get the floss your teeth need. Ready-to-use dental flossers from the drugstore can make a difference.

7. Consider mouthwash.

Advertisements make mouthwash seem necessary for good oral health, but many people skip them because they don't know how they work. Schwartz says mouthwash helps in three ways: It reduces the amount of acid in the mouth, cleans hard-to-brush areas in and around the gums, and re-mineralizes the teeth. "Mouthwashes are useful as an adjunct tool to help bring things into balance," he explains. "I think in children and older people, where the ability to brush and floss may not be ideal, a mouthwash is particularly helpful."

Ask your dentist for specific mouthwash recommendations. Certain brands are best for children, and those with sensitive

teeth. Prescription mouthwash is also available.

8. Drink more water.

Water continues to be the best beverage for your overall health — this includes oral health, too. Also, as a rule of thumb, Schwartz recommends drinking water after every meal. This can help wash out some of the negative effects of sticky and acidic foods and beverages in between brushes.

9. Eat crunchy fruits and vegetables.

Ready-to-eat foods are convenient, but perhaps not so much when it comes to your teeth. Eating fresh, crunchy produce not only contains more healthy fiber, but it is also the best choice as far as your teeth are concerned. "I tell parents to get their kids on harder-to-eat and chew foods at a younger age," says Schwartz. "So try to avoid the overly mushy processed stuff, stop cutting things into tiny pieces, and get those jaws working!"

10. Limit sugary and acidic foods.

Conclusion

Tooth problems can lead to diabetes, heart disease, systemic infections, an inability to eat or speak properly and other maladies – some life-threatening. Crooked or crowded teeth can contribute to gum disease that can eventually lead to tooth loss. Poor oral hygiene invites plaque to accumulate around the base of your teeth and gum line, causing your gums to become red and inflamed. Taking care of teeth at home can help to maintain everyone dental health and prevent periodontal, or gum, disease from developing. Achieving healthy teeth takes a lifetime of care. Even if someone says that you have nice teeth, it's crucial to take the right steps every day to take care of them and prevent problems. This involves getting the right oral care products, as well as being mindful of your daily habits. Regular checkups and cleanings can prevent these problems as well as provide you with good oral hygiene. Best Practices for Healthy Teeth

Ultimately, sugar converts into acid in the mouth, which can then erode the enamel of your teeth. These acids are what lead to cavities. Acidic fruits, teas, and coffee can also wear down tooth enamel. While you don't necessarily have to avoid such foods altogether, it doesn't hurt to be mindful.

11. See your dentist at least twice a year.

Your own everyday habits are crucial to your overall oral health. Still, even the most dutiful brushers and flossers need to see a dentist regularly. At minimum, you should see your dentist for cleanings and checkups twice a year. Not only can a dentist remove calculus and look for cavities, but they will also be able to spot potential issues and offer treatment solutions. Some dental insurance companies even cover more frequent dental checkups. If this is the case for you, take advantage of it. Doing so is especially helpful if you have a history of dental issues, such as gingivitis or frequent cavities.

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Sampoorna Woman through Holistic Health Programmes

Dr. (Smt.) B.V.L.A. Manga,
Reader, Department of Political Science,
Maharajah's (Autonomous) College,
Vizianagaram-535 002.

Abstract: Numerous studies have found that the rates of admission to hospital vary dramatically with gender, with men visiting hospitals more frequently women. Differential access to health care occurs because women typically are entitled to a lower share of household resources and thus utilize health care resources with a lesser degree than men. Amartyasen has attributed that women has access to fewer household resources to their weaker bargaining power within the house hold. To make Sampoorna Woman, *Poorna Shakti Kendras* will be established at the grass root level through which the series to women would be facilitated by the village co-ordinators with the motto *Hum Sunega Narri Ki Baat* !

Key words: Health is Wealth, Sampoorna Woman,

Introduction

'Health is Wealth' may be an oft quoted dictum. But it is a reality that a healthy person is more able to take care of him / her and his/her family, as also the nation. With each woman shining, shines a family, a community and a generation. The United Nations ranks India as a middle income country. Findings from the World Economic Forum indicate that India is one of the worst countries in the world in terms of gender inequality. Unfortunately inequalities between man and woman manifest themselves in all areas of development and health is not an exception. Health care challenges for men are somewhat different from those of general population. Gender health is critical to nation's well-being. The 2011 United Nations Development Programmes Human Development Report ranked India 132 out of 187 in terms of gender inequality. The value of this multi-dimensional indicator, Gender Inequality Index (GII) is determined by numerous factors including material mortality, adolescent fertility rate, educational achievement and labour force participation rate. Gender is one of many social determinants of health, which includes social, economic and political factors – that play a major role in the health outcomes of women in India. Gender Inequalities in turn are directly related to poor health outcomes for women.

Numerous studies have found that the rates of admission to hospital vary dramatically with gender, with men visiting hospitals more frequently women. Differential access to health care occurs because women typically are entitled to a lower share of household resources and thus utilize health care resources with a lesser degree than men. Amartyasen has attributed that women has access to fewer household resources to their weaker bargaining power within the house hold. Furthermore, it has also been found that Indian women frequently under report illness. The under reporting of illness may be contributed to the cultural norms and gender expectations with in the house hold. Gender also

dramatically influences the use of antenatal care and utilization of immunizations.

- According to census 2011 there is a deteriorated trend in the child sex ratio (0-6 years), high maternal and child mortality and morbidity continues to pose a challenge.
- NFHS-3 survey also revealed that every third woman in India is under nourished (33.0 percent have Low Body Mass Index) and every second woman is anemic (56.2 percent women are anemic in the age group of 15-49).
- The sex ratio slated as per the census 2011 shows a marginal improvement from 933 to 940 per 1000 males.
- An estimated 4.5 percent of women marry before are 18.
- The extremely high proportion of low birth weight babies born in India points to an intergenerational transfer of under nutrition from the mother to the child. Malnourished mothers mean malnourished children.

Gender bias and discrimination, limited freedom of choice over sexual and reproductive aspects and lack of decision making have an adverse impact on health of women. Besides this, there are some determinants of health that impact the health of women such as :

- Safe drinking water and adequate sanitation.
- Safe and adequate nutrition
- Adequate housing
- Healthy and safe working environment
- Health literacy, education and information.

The importance of bringing improvement in women's Health and Nutritional Status has been realized and recognized by the Government of India. Accordingly they formulated many programmes. To mention few programmes implemented by Government towards nurturing the women resource are

- Integrated Child Development Scheme.
- Total Sanitation Campaign
- Targeted Public Distribution System
- Rajiv Gandhi Scheme for Empowerment of Adolescent Girls
- Rashtriya Swasthya Bhima Yojana
- Kishori Shakthi Yojana
- Janani Suraksha Yojana
- National Rural Health Mission
- Reproductive and child health programme

Women is the key provider of health services for the family and society, the mother being central figure who provides the child care, hygiene, nutrition and even primary health care without good mental and physical health care for the mother herself, health programmes are doomed to failure.

The National Mission for Empowerment of Women was launched by the Government of India on International Women's Day in 2010 with the aim to strengthen overall process that promote all round development of women.

Mission Poorna Shakti …… Hum Sunega Nari Ki Baat

Mission Statement:

The Mission aims at strengthening the process that promote holistic development of women, gender equality and gender justice through inter – sectoral convergence of programmes impacting women, forging synergy amongst various stake holders and creating an enabling environment conducive to social change.

A women in her life cycle goes through a number of challenges in terms of her health and nutritional needs as these are not just dependent on availability and access to health and nutrition services but is closely linked to her

status in the society which constantly deprives her from getting these needs appropriately addressed poverty and economic dependence. To make Sampoorna Woman, *Poorna Shakti Kendras* will be established at the grass root level through which the series to women would be facilitated by the village co-ordinators with the motto *Hum Sunega Narri Ki Baat* !

Poorna Shakti Kendras aims

- To reach out the information to women about all the government programmes / Scheme / Series and help them to utilize those benefits especially related to health, education and livelihoods.
- To conduct capacity building training programmes on stress management and life skills development
- To maintain a data base of target population (women) on various issues related to women.
- To co-ordinate with the outreach services of various departments.

The awareness building process with appropriate support services should be framed to create healthy environment which is essential for survival of our nation. At this juncture India needs a public system that is gender proactive, one that recognizes that health care for women extends beyond mere reproductive health. Women's health is inextricably linked to that the society places on them. It is also inextricably linked to the progress of the nation. It is a matter of survival. To function well in the 21st century a Sampoorna woman must possess a wide range of abilities and competencies from being able to read a newspaper to understanding information provided by health care provider. Health literacy is the surest way to empower woman to take control over the factors that affect their health and lives. By acquiring relevant knowledge, skills and competencies, they are not only better able to engage in self development activities but are also better equipped to influence the contexts in which they live.

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Holistic Nutrition for Holistic Health

Dr. M. Padmaja,
Faculty of Home Science,
St. Theresa's College, Eluru.

Abstract: Proper Nutrition is the basis for optimum health and well being. Holistic nutrition is the modern natural approach to developing a healthy balanced diet while taking into account the person as whole. Holistic nutrition is considered to be part of holistic health. Holistic health is an approach to treating a person's well being by taking into consideration all aspects of life. A long term course of action includes emotional and spiritual health along with the physical body. Modern medicine focuses on treating a symptom rather than the root cause. If a person is experiencing a symptom or chronic condition, the problem has most likely been developing for some time. The goal of holistic nutrition is to facilitate a health recovery plan as well as build a strong foundation for long term optimum health. Food not only provides the energy needed to function in our daily lives but constantly supplies the nutrients which are required to build and regenerate body tissue, bone, muscle, fat and blood. The nutrients in food are also necessary to produce substances for the chemical processes that take place in our bodies millions of times a day.

Key words: Nutrition, optimum health, sedentary lifestyle

Introduction

To live one must eat. But, we not only eat to live, what we eat also affects our ability to keep healthy, do work, to be happy and to live well. Knowledge of what to eat and in what quantities is a prerequisite to the healthy and happy life. Good nutrition requires a satisfactory diet, which is capable of supporting the individual consuming it, in a state of good health by providing the desired nutrients in required amounts. It must provide the right amount of fuel to execute normal physical activity. If the total amount of nutrients provided in the diet is insufficient, a state of under nutrition will develop. Nutrition is one key to developing and maintaining a state of health that is optimal for you. In addition, a poor diet coupled with a sedentary lifestyle is known to be risk factors for life- threatening chronic diseases and death: Heart disease, Stroke, Hypertension, Diabetes and some forms of Cancer. Together these diseases account for two- thirds of all deaths in the United States. The major health problems in the United States are largely caused by excessive energy intake and not enough physical activity.

Proper Nutrition is the basis for optimum health

Proper Nutrition is the basis for optimum health and well being. Holistic nutrition is the modern natural approach to developing a healthy balanced diet while taking into account the person as whole. Holistic nutrition is considered to be part of holistic health. Holistic health is an approach to treating a person's well being by taking into consideration all aspects of life. A long term course of action includes emotional and spiritual health along with the physical body. Modern medicine focuses on treating a symptom rather than the root cause. If a person is experiencing a symptom or chronic condition, the problem has most likely

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Food not only provides the energy needed to function in our daily lives but constantly supplies the nutrients which are required to build and regenerate body tissue, bone, muscle, fat and blood. The nutrients in food are also necessary to produce substances for the chemical processes that take place in our bodies millions of times a day.

There has been a huge increase in the amount of organic and natural food products available today. While going strictly organic sounds great, most shoppers must be practical and take into consideration their personal budget. Understanding which food products are affected the most by conventional food growing or processing methods will help create a balanced food budget. One of the major obstacles in achieving good health today is having to cook for yourself. Healthy cooking for one and healthy cooking for a family can be challenging. A fundamental problem with society is the dependence on fast or convenient food products. Finding simple ways to prepare meals for yourself or your family will not only lead to improved health but can save you money as well!

There are great advancements being made toward understanding the human bodies delicate balance and the way our health, diet, and nutrition are all connected by the most elemental form of energy. Some of today's most respected doctor's and scientists are finally collaborating in what often is referred to as integrative medicine. Holistic nutrition focuses on a natural approach to a healthy diet and considers the individual as a whole, including all aspects of his lifestyle, according to holisticnutrition.com. This natural approach incorporates emotional, spiritual and physical health to create a state of well-being for optimum health. A holistic approach to proper nutrition encourages education on basic nutrition to develop a holistic diet that incorporates natural and organic foods, natural holistic supplements and food treatments for chronic health conditions.

Holistic practitioners--including acupuncturists, chiropractors, herbalists and nutritionists--agree that following a diet under the guidelines of holistic nutrition allows people to heal naturally without the use of prescription drugs, according to e-ssortment.com. Holistic nutrition requires a proper balance of protein, vitamins and other nutrients for optimum health to reach optimum energy levels, emotional well-being and the ability to fight infections. Following the guidelines of proper holistic nutrition can help prevent various health problems such as heart disease, diabetes, obesity and cancer. People who are seeing a health care provider for any of these conditions should ask their provider what is right for them before beginning a holistic diet.

The most important component of holistic nutrition is incorporating natural foods into your diet whenever possible, according to holisticmed.com. Foods such as vegetables, whole grains, fish, beans, fruits, nuts and seeds are the basics of a natural food diet. When cooking these foods, you can use herbs, spices, sea salt, tamari, unrefined sesame oil, virgin olive oil and natural sweeteners for flavor. It is

best to use fresh fruits, vegetables and other ingredients from local farmers' markets or produce stands that sell certified organic produce. It is also important to eat a variety of foods within each food group, especially leafy green vegetables.

It is important not only to nourish your body with plenty of fluids, but also to consume the "right" types of fluids, according to holisticmed.com. Herbal teas are a good substitute for other caffeinated drinks such as coffee and soda, and you have a number of choices when it comes to tea variety. It is best, however, to avoid herbal teas with high caffeine content, such as guarana, kola, nut and black tea. Drinks such as plain spring water, soy milk, rice milk and fresh juice are healthy alternatives. If you buy juice from the store, be sure to purchase juice that is organic and uses filtered water. Additional options include amasake, a beverage made from rice and is naturally sweetened with almonds, and vegetable broth, which nourishes the body with vitamins and minerals.

Conclusion

Following a holistic nutrition plan has powerful psychological, spiritual and overall health benefits, especially for people who suffer from chronic conditions such as diabetes, heart disease, cancer, asthma and tumor growths. A holistic diet strengthens the bones, blood, muscles and vital organs, including the heart, liver, stomach and intestines. Holistic nutrition also follows the belief that physical ailments are directly related to psychological well-being, so developing a healthy and balanced diet helps to relieve stress, memory loss and other mental conditions. Holistic nutrition is designed to heal the body, enrich the mind and cleanse the soul to reach the ultimate healthy lifestyle.

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The Impact of Industrialization Its Release of Toxic Compounds and Consequences on Health of Human Life

Dr. Jalla Suresh,
Department of Chemistry,SRVB SJB MR College, Peddapuram, EGDT., A.P.

Abstract: Wastewater used for domestic purpose will contain both solid and dissolved pollutants include food residues, sanitary items, urine, paper, faecal matter and other variety of contaminants. The sewer network will usually also receive wastewaters from office and commercial properties and from industrial premises. Rainwater from roofs and roads may also drain into the sewer network. Wastes that result from an industrial process as the liquid waste in which industrial effluents are present are classed as industrial waste water. Water carried waste derived from residential and business building and institutions are included in the domestic sewage for sanitary sewage

Key words: Wastewater, irrigation, industries

Introduction

Water is main source for irrigation and industrial purposes. A variety of land and water based activities are causing pollution of water and over-exploitation is causing aquifer contamination in certain instances. The three percent of global fresh water is large enough to meet the requirements of man for millions of years. Majority of rural population living in India largely depends on ground water for domestic use. Immense increase in world's population resulting in spurt in urbanization, industrialization, agriculture etc. has put simmering pressure on the limited fresh water resources there by threatening the fresh water bodies with pollution.

Effects of sewage on health of human life

Sewage is a liquid waste from the community which is extremely foul in nature, which includes sullage, discharging from latrines, urinals and storm water and is characterized by its constituent's physical and chemical conditions and the bacteriological organisms that it contains.

The waste water generated from kitchens, bathrooms, lavatories, carrying body waste food preparation waste and other waste products of normal living are classed as domestic sewage. Wastes that result from an industrial process as the liquid waste in which industrial effluents are present are classed as industrial waste water. Water carried waste derived from residential and business building and institutions are included in the domestic sewage for sanitary sewage.

Apart from these inert materials, sewage also contains living organisms in solution, notably the bacterial, viruses, protozonas. These organisms present in the organic constituents of sewage are abundant source of energy. Waste water from these sources may carry pathogenic organisms that can transmit disease to humans and other animals; contain organic matter that can cause odor and nuisance problems of receiving water bodies; and can lead to eco toxicity. Eutrophication is one of the numerous problems created by sewage water pollution. Degradation of the quality of water, reduction in the number of aquatic species and increase in

BOD, are the effects. Proper collection and safe, nuisance-free disposal of the liquid wastes of a community are legally recognized as a necessity in an urbanized, industrialized society[1]. Sewerage being the pipes, pumps and infrastructure through which sewage flows. Power can also be obtained from sewage water[2]. The technique uses Microbial fuel cells.

sewage characterization becomes very essential for an effective and economical waste management programme and to choose the treatment processed, deciding the extent of treatment methods and assessing the beneficial uses of the wastes. Reasons for the increment of heavy metals in sewage are not only because of domestic uses, but also from other sources. For example, lead (Pb) may be entering into the sewage system through dust fall, soil erosion, leaching, urban waste discharges and runoff from streets and other surfaces. This toxic metal may cause anemia, kidney disease and nervous disorders above the tolerance limits of 0.05 mg/L. Similarly, zinc (Zn) is an essential element in human metabolism. A child requires 0.3 mg of Zn/kg of body weight, the deficiency of which may cause growth retardation. But excessive concentration of Zn in the drinking water may cause undesirable aesthetic effects.

Sewage water is a complex matrix, with many distinctive chemical characteristics. These include high concentrations of ammonium, nitrate, phosphorus, high conductivity (due to high dissolved solids), high alkalinity, with pH typically ranging between 7 and 8. Tri halomethanes are also likely to be present as a result of past disinfection. The toxins released into the rivers through sewage water are consumed by fishes and other organisms, thus increasing the possibility of these toxins entering the food chain. Coral reefs are affected by sewage pollution the world over. The sewage water that is dumped into the oceans, affects the coral reefs to a great extent. The toxins present in the polluted water inhabit the growth of corals. "Sewage" and "Sewerage" may be used interchangeably, but elsewhere they retain separate and different meanings - sewage being the liquid material and sewerage being the pipes, pumps and infrastructure through which sewage flows.

Many water bodies in their natural form contain chemical compounds such as chlorides, nitrates, sulphates and the bicarbonates etc. However, various problems arise with the increase in the amount of these compounds. The water becomes unsuitable for drinking and irrigation. Total Dissolved Solids (TDS) in water should be less than 500 gr/lt, for portable water contains salts is not useful for irrigation either. Utilization of such water leads to the salinization of the soil that in turn leads to soil erosion.

Supplied water to households is used for many purposes, other than drinking and food preparation, notably bathing, showering, toilet, utensils and flushing and the washing of dishes and clothes. Except where main drainage is not installed, the used water gravitates to the local sewer and becomes ‘sewage’.

Wastewater used for domestic purpose will contain both solid and dissolved pollutants include food residues, sanitary items, urine, paper, faecal matter and other variety of contaminants. The sewer network will usually also receive wastewaters from office and commercial

properties and from industrial premises. Rainwater from roofs and roads may also drain into the sewer network. The combined flow from these various sources travels through the sewer system and ultimately to a 'sewage works' where it receives treatment before discharge of the treated effluent to a stream, river, estuary or the sea. Collecting and treating wastewater has been even more beneficial to human health than the health service because it stopped water-borne diseases such as typhoid and cholera.

Sewage Treatment: Sewage treatment is the process of removing the contaminants from sewage to produce liquid and solid (sludge) suitable for discharge to the environment or for reuse. It is a form of waste management. A septic tank or other on-site wastewater treatment system such as biofilters can be used to treat sewage close to where it is created. Treatment of sewage is essential to ensure that the receiving water into which the effluent is ultimately discharged is not significantly polluted. However, the degree of treatment required will vary according to the type of receiving water. Thus, a very high degree of treatment will be required if the effluent discharges to a fishery or upstream of an abstraction point for water supply.

Consequences: The "heavy metals" include chromium (Cr), iron (Fe), cadmium (Cd), manganese (Mn), lead (Pb) and zinc (Zn) are the most toxic to aquatic organisms. Heavy metal pollution can arise from many sources but most commonly arises from the purification of metals, e.g. the smelting of copper and the preparation of nuclear fuels. Electroplating is the primary source of chromium and cadmium. Today mankind is exposed to the highest levels in recorded history of lead, mercury, arsenic, aluminum, copper, nickel, tin, antimony, bromine, bismuth and vanadium.

Levels of exposure to toxic metals are up to several thousand times higher than in primitive man. It is also known fact that no metal is degradable. An affected enzyme by these toxic metals are solely responsible to many health conditions Diseases such as renal failure, liver cirrhosis, hair loss, and chronic anemia are apparently related to contaminated drinking water with heavy metals such as Cd, Cr, Cu, Fe, Mn, and Pb . Through precipitation of their compounds or by ion exchange into soils and mud, heavy metal pollutants can localize and lay dormant. Unlike organic pollutants, heavy metals do not decay and thus pose a different kind of challenge for remediation.

Conclusion: Local health departments, regional pollution control centres, rural water technological testing laboratories and clinics which specialize in occupational and environmental health conditions can also provide valuable resources and guidance to the people.

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Holistic Nutrition – A New Approach for Better Health

*** Rajya Lakshmi Devi Yenumula& Dr. S. Thilakavathi**

*Research Scholar, Avinashilingam University for Home Science,Cimbatore,Tamilnadu
**Assistant Professor (FS), Avinashilingam University for HomeScience ,Coimbatore, Tamilnadu

Abstract:

Holistic medicine takes the whole body, mind and spirit into account. It believes that what you do to your body affects your mind and your spirit. If one want to follow a holistic lifestyle, one will want to use holistic nutrition principles. Food is one of life's greatest source of survival. Food in its natural state is what humans were meant to eat, but over the decades convenience has nudged out some of these healthier choices. Though there isn't a specific diet that will accommodate all people, there are certain basic Holistic Nutrition Guidelines to use when choosing the food one eat and the way they prepare it. Holistic nutrition includes consciously eating healthy foods that promote vibrant physical and mental health, while supporting a strong immune system and preventing disease. While eating an exclusively holistic diet can be overwhelming and inconvenient for some, making small changes can make a big difference. In general, when people eat from a holistic point of view, they eat natural foods that haven't been processed, sprayed with chemicals or had chemicals added to them for preservation or taste. In other words, they want to eat things labeled organic. In general, one will want to eat raw fruits and vegetables whenever possible and stay away from sugar and white flour. At its core, holistic nutrition is designed to heal the body, mind and soul so that you can achieve ultimate health.

Key words: Holistic, Organic, MSG, GMO foods.

Introduction

What is holistic health? Simply put, it's a concept that one's health is directly connected to his/her psychological, physical, emotional, social, and spiritual well-being. In order to be in good shape, one must take care of each of these aspects and keep all of these components of life balanced.

Alternative and complementary medicine is used in the holistic health approach, including natural diet and herbal remedies, spiritual counseling, meditation, acupuncture, nutritional supplements, and crystals, among other things. But for those of us who are just looking to be better-rounded, we can try some more accessible things to help ourselves stay physically and emotionally balanced.

Proper Nutrition is the basis for optimum health and well-being. Holistic nutrition is the modern natural approach to developing a healthy balanced diet while taking into account the person as whole. Holistic nutrition is considered to be part of holistic health.

The basics of holistic nutrition:

Food not only provides the energy needed to function in our daily lives but constantly supplies the nutrients which are required to build and regenerate body

tissue, bone, muscle, fat and blood. The nutrients in food are also necessary to produce substances for the chemical processes that take place in our bodies millions of times a day.

Holistic nutrition is all about eating healthy food as close to its natural state as possible for optimum health and wellbeing. Hallmarks of holistic nutrition include unrefined, unprocessed, organic and locally grown whole foods. It's an approach to eating that very consciously considers everything that's eaten and focuses on eating for health above all else. Food is not only fuel, but medicine for the body. As once stated by Hippocrates, "Let food be thy medicine and medicine be thy food," which is a principle embraced and promoted by holistic nutritionists. By following a holistic nutrition plan, one may experience a number of health benefits, such as the following:

- Weight loss and weight management
- Disease prevention
- Increased energy levels
- Improved mood
- Better sleep
- Improved skin tone and texture
- Strengthened immune system
- Balanced blood sugar levels
- Reduced cholesterol and blood pressure levels
- Improved digestion and relief from constipation

If a person is interested in changing his/her diet with new holistic options, or are ready to completely overhaul their eating regime, these principles will help point them in the right direction for better health. One can pick a few or try them all.

- **Drink adequate amounts of purified water** - at least eight 8-ounce glasses daily. Even mild dehydration will interfere with the digestive process and aggravate several symptoms and diseases.
- **Choose organic food** as much as possible to avoid pesticides, herbicides, genetically modified (GMO) foods, and irradiated food. Fresh organically grown food has

more nutrient value and tastes better, and organic meats and dairy don't contain hormones and antibiotics.

- Select **whole grains** when buying foods such as bread, pasta, rice, tortillas, and cereal. Whole grains provide more nutrients and fiber.
- Try to buy **locally grown** fresh fruits and vegetables. Sometimes it's better to eat freshly harvested local produce that isn't certified organic, rather than organic produce that was harvested before ripening and transported thousands of miles to the grocery store.
- **Essential fatty acids** are necessary for good health, so eat good fats in moderation but don't avoid fat altogether. Use organic cold-pressed oil such as extra virgin olive oil for salads. Cooking requires an oil that can be heated without being denatured, so choose organic canola or coconut oil. Flax seed oil is a great addition to a breakfast smoothie.
- Eat **raw and minimally processed** whole living food as much as possible. Foods in their natural state contain more nutrients and active enzymes.
- Eat a **variety** of nutrient-rich healthy foods. There is no single food that provides the more than 40 different nutrients we need for good health. Experiment with different foods and recipes.

What to Avoid

- Eliminate **refined sugar**, **high fructose corn syrup**, and **artificial sweeteners**
- **Salt:** Limit sodium to less than 2,300 mg per day - equivalent to about one teaspoon of salt. Check food labels; you'll be amazed how much sodium is added to processed foods. Substitute regular table salt for something healthier, like sea salt or Himalayan salt.
- **Coffee** and **sodas** - non-foods that have many destructive physiological consequences which cause several illnesses and chronic disease.
- **Trans-fats** (hydrogenated oils); **saturated fats** - primarily from animal sources such as red meat, and whole milk dairy products.
- **Don't microwave** food or beverages. Use a toaster oven, double boiler, tea kettle, or other appliance to heat or cook food.
- **Food additives:** artificial colors and flavors, preservatives, MSG
- **Genetically modified (GMO) foods:** Unfortunately, it's not required that the consumer be notified about the presence of GMO foods. Most canola and soy is GMO, so never buy non-organic canola oil or non-organic soy products like soy milk, tofu, or soy protein powder.

Other Considerations of Holistic Nutrition

- Use natural plant-based digestive enzymes to enhance your digestion. Enzymes will also reduce the formation of certain digestive by-products that can lead to intestinal toxicity and autointoxication. Our ability to produce enzymes decreases as we get older, and cooking and processing destroys the enzymes that were originally part of the food.
- Use a high quality daily multi-nutrient to supplement your healthy food choices. Even most organic produce doesn't have the same

nutritional value that foods had several decades ago.

- Modern agricultural and food distribution practices and compromised soil, air, and water quality have degraded the nutritional content of food. Today we would have to eat much larger portions to get sufficient nutrients from our food.
- If changing to a healthier eating lifestyle is a major shift for anyone is to make gradual changes. Developing new eating habits can feel overwhelming and confusing, and that may interfere with their success in making permanent changes.
- You can start with substitution. For instance, if you love hamburgers, stop buying the fast food junk and make your own. Buy organic or free-range ground meat, or organic vegi-burger patties. Use whole grain buns, and organic lettuce, cucumber and tomato. Try different condiments - like pesto thinned with olive oil instead of using mayonnaise.
- **Clean out your kitchen** pantry and refrigerator to get rid of unhealthy foods. Read the label ingredients to help decide what to toss or give away.
- **Eat moderate portions**; remember that a serving of meat is 3 ounces - about the size of a deck of cards. A serving of pasta is about a half cup. We've become used to super-sized portions, but we're turning into a nation of sick super-sized people.
- **Eat regular meals** and start out the day with a nutritious breakfast. A smoothie with almond milk, fruit, protein powder and fiber is delicious and will jump start ones metabolism and provide a lasting energy boost. Eating six smaller meals is better than 3 large meals.
- **Treat yourself!** A healthy diet doesn't have to deprive us of the foods that we love. Experiment with healthy substitutes and use moderation.

Living the principles of holistic nutrition will reward you with vibrant health, stamina, and a clear mind.

Resources:

http://www.livestrong.com/article/167813-definition-of-holistic-nutrition/
http://www.holistic-wellness-basics.com/holistic-nutrition.html
www.holisticnutrition.com/

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Nutritional Needs during Adolescence

Dr.C.Kalapriya,
Lecturer in Home Science, D.k.Govt. Autonomous college for women, Nellore

Abstract
Adolescence is a period from the beginning of puberty until maturity. This is a period when the independent character of an individual is established. Adolescent girls constitute one tenth of the population. The foundation of healthy adulthood is laid during this period. Often adolescents dietary habits differ from those of children and adults. Adolescents tend to skip breakfast, eat more meals outside their homes and eat more snacks and fastfoods. Though such foods lack vitamins and other micronutrients they are rich in calories. Most of the fast foods are energy dense and are high in salt and sugar content. However fast foods should be taken in moderation. Maintain a healthy weight by balancing energy intake with work-output. Adolescents need to consume sufficient energy to match the increased physical activity and for accelerating growth. This review focuses on the nutritional needs of adolescence.
Key words: Adolescence, Risk factors, headache, dizziness

Introduction

Adolescence is a period from the beginning of puberty until maturity. This is a period when the independent character of an individual is established. Based on the National Family Health Survey data of 2005-06 it is estimated that the adolescents between 13-19 years account for about 20 percent of the total population in different parts of India. The foundation of healthy adulthood is laid during this period. Adolescence is a period of rapid growth where an individual gains 35 percent of adult weight an 11-18 percent of adult height. Nutrition plays a significant role in doubling of body mass during puberty. These dramatic changes in physical and psychological development allow them to face many challenges and exposures in the society.

This is a period when adolescent's dietary habits differ from those of children and adults. Transformation in the life styles of the young due to increased urbanization, individualization and globalization have resulted in a problem like mal nutrition, obesity, eating disorders, unsafe early onset sexual behaviour, child abuse and reproductive tract infections.

Adolescents make many choices for themselves. This is a period when the independent character of an individual is established. Often adolescents dietary habits differ from those of children and adults. Adolescents tend to skip breakfast, eat more meals outside their homes and eat more snacks and fastfoods. Some develop strong diet related beliefs , adopt food fads and experiment with tobacco and drugs. Parental authority and patterns of living are challanged, leading often to friction and hatred. Thus there is dire need for parents and care takers to know the nutritional needs of adolescents.

Energy and Protein Adolescents need to consume sufficient energy to match the increased physical activity and for accelerating growth. Girls appear to consume their peak calorie intake at the time of menarche. In boys calorie intake appears to parallel the adolescent growth spurt, increasing until 16 years of age

and then decreasing by 19years. Recommended Dietary Allowance (RDA) for daily protein intake ranges from 54-78g . in rapidly growing adolescents, protein metabolism is sensitive to calorie restriction, in the event of inadequate energy intake, protein is used for energy needs resulting in malnutrition.

Fat The amount of fat which is concentrated source of energy(9 Kcal/g) of fat, if included in the diet of physically active adolescent can satisfy the energy without increasing the bulk of food. High fat foods and snacks coupled with sedentary life styles may lead to overweight.

Minerals

Calcium Intake of calcium should be increased to meet the requirements due to increased growth spurt and bone mineralisation.

Zinc deficiency is not normally seen but supplements have shown to increase pubertal growth in adolescents suffering from pubertal delay.

Iron Adolescence is the period during which iron deficiency is most prevalent. Girls require iron owing to menarche and subsequent monthly cycles. As lean body mass in boys begins to develop during adolescence, the need for iron increases. The requirement levels of adult males drop in late adolescence, where as in girls they require iron from 12 years of age onwards.

Prevalence of iron deficiency

Iron deficiency leads to increased tiredness or lethargy, headache, dizziness, palpitations, shortness of breath, decreased exercise performance, decreased attention span , susceptibility to infection and behavioural problems. Risk factors are high during adolescent pregnancy , heavy menstrual or blood loss due to any reasons. Tackling anaemia during adolescence in girls may be more rewarding than trying to correct it in later pregnancy. Diet should consist of iron rich foods and vitamin C foods. Iron should not be taken simultaneously with dairy products, other calcium rich foods , coffee, tea or bran.

Vitamins

Vitamin A is required for vision, growth, cellular differentiation and proliferation, reproduction and immune system integrity.

Vitamin D is needed for optimum bone mineralization.

Vitamin C is required for collagen synthesis. Smoking and oral contraceptive use increase their requirement.

Folate is required for increased cell replication and growth.

Vitamin B6 is required for rapid cell growth as it is involved in large number of enzyme systems associated with nitrogen metabolism.

Riboflavin, Thiamin and Niacin are involved in energy metabolism and thus are important in puberty.

Some of the common conditions affecting adolescents are

- In appropriate food intake. Some times adolescents tend to miss the meal or breakfast. To compensate this they prioritize to eat snacks, sweets and other fast foods.
- Poverty Inadequate food availability affects their health.
- Nutrition related conditions like anaemia, overweight, underweight, obesity, hyperlipidemia and other chronic diseases like diabetes mellitus, renal insuffiency may also affect adolescents.

- Psychosocial factors like disorganised family,food taboos imposed on adolescents , body image, eating disorders like anorexia nervosa and bulimia etc.
- Lifestyle plays a crucial role in the development of the adolescent. Sedentary life style can affect the nutritional status.

Energy Needs and Obesity

Obesity among adolescents has become a problem in the developed countries and gradually increasing in developing countries. When obesity begins in adolescence it is highly associated with morbidity. It is a predisposing factor for hypertension, hyperlipidemia with greater risk of cardiovascular disease in adulthood. The reasons for obesity include excessive food intake, sedentary life style, poor physical activities and excessive television viewing and working with computers for long hours. Parents and teachers should recognise this and help overweight children manage their weight before the onset of puberty. Overweight that persists past the age of 12 raises the chance of adulthood obesity. Intervention of weight management must be encouraged among adolescents in healthy eating habits that promote gradual weight loss in them.

Adolescents are often blamed for their poor eating habits which include eating junk foods and fast foods. Fast foods are those that are prepared and served quickly in the fast food outlets like KFC roasted, fried and grilled chicken, pizzas, burgers, noodles, pastries, samosas, kachories, Puffs, cakes are examples of such foods. Along with these foods soft drinks, aerated cool drinks are combined to this diet. Though such foods lack vitamins and other micronutrients they are rich in calories. Most of the fast foods are energy dense and are high in salt and sugar content. However fast foods should be taken in moderation.

Recommended Dietary Allowance for Indian Adolescents

	10- 12 Years		13-15 Years		16-18 Years	
	Boys	Girls	Boys	Girls	Boys	Girls
Body weight	35.4	31.5	47.8	46.7	57.1	49.9
Net Energy Kcal/d	2190	1970	2450	2060	2640	2060
Protein g/d	54	57	70	65	78	63
Fat g/d	22	22	22	22	22	22
Calcium	600	600	600	600	500	500
Iron g/d	34	19	41	28	50	30
Vitamin A mcg Retinol	600	600	600	600	600	600
Beta carotene mcg	2400	2400	2400	2400	2400	2400
Thiamine mg/d	1.1	1.0	1.2	1.0	1.3	1.0
Riboflavin mg/d	1.3	1.2	1.5	1.2	1.6	1.2
Nicotinic acid mg/d	15	13	16	14	17	14
Pyridoxine mg/d	1.6	1.6	2.0	2.0	2.0	2.0
Folic acid mcg	70	70	100	100	100	100
Ascorbic acid mg/d	40	40	40	40	40	40

Indian council for Medical Research (ICMR, 1986)

The Basic Principles Of Good Nutrition For Adolescents are

Eat a variety of foods from different food groups. This is the best defence against nutrient deficiences and excesses.

Maintain a healthy weight by balancing energy intake with work-output. Restriction of food intake must be carefully balanced to assure adequate nutrient intake. At the same time, encouraging more physical activity is important in maintaining good body weight and composition.

,Restrict saturated fat and cholesterol intake. This helps in preventing overweight and obesity in adolescence .

Eat plenty of fruits, vegetables and whole grains. These are nutrient dense foods. Fibre present in them helps in increasing the feacal bulk and regularises bowel movement. It also reduces the sudden blood glucose surge after meals and lowers serum cholesterol which are useful in the long run.

Never miss your breakfast. It should provide 30 percent of total RDA for energy. It should be high in good quality proteins and it is advisable to include atleast one fruit.

Eat fast foods and junk foods judiciously.

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Health Promotion: An Effective Tool for Global Health

Capt. M.Sreeramulu, Lecturer in Economics.
A.S.D. Govt. Degree College for Women (Autonomous), Kakinada

Abstract
Health promotion is very relevant today. There is a global acceptance that health and social wellbeing are determined by many factors outside the health system which include socioeconomic conditions, patterns of consumption associated with food and communication, demographic patterns, learning environments, family patterns, the cultural and social fabric of societies; sociopolitical and economic changes, including commercialization and trade and global environmental change. Efforts at promoting health encompassing actions at individual and community levels, health system strengthening and multi sectoral partnership can be directed at specific health conditions. It should also include settings-based approach to promote health in specific settings such as schools, hospitals, workplaces, residential areas etc. Health promotion needs to be built into all the policies and if utilized efficiently will lead to positive health outcomes.
Keywords: Health promotion, public policy, issue based approach, healthy settings

Introduction: Health promotion is more relevant today than ever in addressing public health problems. The health scenario is positioned at unique crossroads as the world is facing a 'triple burden of diseases' constituted by the unfinished agenda of communicable diseases, newly emerging and re-emerging diseases as well as the unprecedented rise of noncommunicable chronic diseases. The factors which aid progress and development in today's world such as globalization of trade, urbanization, ease of global travel, advanced technologies, etc., act as a double-edged sword as they lead to positive health outcomes on one hand and increase the vulnerability to poor health on the other hand as these contribute to sedentary lifestyles and unhealthy dietary patterns. There is a high prevalence of tobacco use along with increase in unhealthy dietary practices and decrease in physical activity contributing to increase in biological risk factors which in turn leads to increase in noncommunicable diseases (NCD).(1–3) Figure 1 below illustrates how lifestyle-related issues are contributing to increase in NCDs.(4) The adverse effects of global climate change, sedentary lifestyle, increasing frequency of occurrence of natural disasters, financial crisis, security threats, etc., add to the challenges that public health faces today.

Health, as the World Health Organization (WHO) defines, is the state of complete physical, social and mental well being and not just the absence of disease or infirmity. The enjoyment of highest attainable standard of health is considered as one of the fundamental rights of every human being.(5) Over the past few decades, there is an increasing recognition that biomedical interventions alone cannot guarantee better health. Health is heavily influenced by factors outside the domain of the health sector, especially social, economic and political forces. These forces largely shape the circumstances in which people grow, live, work and age as well as the systems put

in place to deal with health needs ultimately leading to inequities in health between and within countries.(6) Thus, the attainment of the highest possible standard of health depends on a comprehensive, holistic approach which goes beyond the traditional curative care, involving communities, health providers and other stakeholders. This holistic approach should empower individuals and communities to take actions for their own health, foster leadership for public health, promote intersectoral action to build healthy public policies and create sustainable health systems in the society. These elements capture the essence of "health promotion", which is about enabling people to take control over their health and its determinants, and thereby improve their health. It includes interventions at the personal, organizational, social and political levels to facilitate adaptations (lifestyle, environmental, etc.) conducive to improving or protecting health.(1,2)

Health Promotion: Historical Evolution: Health promotion is not a new concept. The fact that health is determined by factors not only within the health sector but also by factors outside was recognized long back. During the 19th century, when the germ theory of disease had not yet been established, the specific cause of most diseases was considered to be 'miasma' but there was an acceptance that as poverty, destitution, poor living conditions, lack of education, etc., contributed to disease and death. William Alison's reports (1827-28) on epidemic typhus and relapsing fever, Louis Rene Villerme's report (1840) on Survey of the physical and moral conditions of the workers employed in the cotton, wool and silk factories John Snow's classic studies of cholera (1854), etc., stand testimony to this increasing realization on the web of disease causation.

The term 'Health Promotion' was coined in 1945 by Henry E. Sigerist, the great medical historian, who defined the four major tasks of medicine as promotion of health, prevention of illness, restoration of the sick and rehabilitation. His statement that health was promoted by providing a decent standard of living, good labor conditions, education, physical culture, means of rest and recreation and required the co-ordinated efforts of statesmen, labor, industry, educators and physicians. It found reflections 40 years later in the Ottawa Charter for health promotion. Sigerist's observation that "the promotion of health obviously tends to prevent illness, yet effective prevention calls for special protective measures" highlighted the consideration given to the general causes in disease causation along with specific causes as also the role of health promotion in addressing these general causes. Around the same time, the twin causality of diseases was also acknowledged by J.A.Ryle, the first Professor of Social Medicine in Great Britain, who also drew attention to its applicability to non-communicable diseases.(7)

Health education and health promotion are two terms which are sometimes used interchangeably. Health education is about providing health information and knowledge to individuals and communities and providing skills to enable individuals to adopt healthy behaviors voluntarily. It is a combination of learning experiences designed to help individuals and communities improve their health, by increasing their knowledge or influencing their attitudes, whereas health promotion takes a more

comprehensive approach to promoting health by involving various players and focusing on multisectoral approaches. Health promotion has a much broader perspective and it is tuned to respond to developments which have a direct or indirect bearing on health such as inequities, changes in the patterns of consumption, environments, cultural beliefs, etc.(3)

The 'New Perspective on the Health of Canadians' Report known as the Lalonde report, published by the Government of Canada in 1974, challenged the conventional 'biomedical concept' of health, paving way for an international debate on the role of nonmedical determinants of health, including individual risk behavior. The report argued that cancers, cardiovascular diseases, respiratory illnesses and road traffic accidents were not preventable by the medical model and sought to replace the biomedical concept with 'Health Field concept' which consisted of four "health fields"-lifestyle, environment, health care organization, human biology as the determinants of health and disease. The Health Field concept spelt out five strategies for health promotion, regulatory mechanisms, research, efficient health care and goal setting and 23 possible courses of action. Lalonde report was criticized by skeptics as a ploy to stem in the governments rising health care costs by adopting health promotion policies and shifting responsibility of health to local governments and individuals. However, the report was lapped up internationally by countries such as USA, UK, Sweden, etc., who published similar reports. The landmark concept also set the tone for public health discourse and practice in the decades to come.(7–10) Health promotion received a major impetus in 1978, when the Alma Ata declaration acknowledged that the promotion and protection of the health of the people was essential to sustained economic and social development and contributed to a better quality of life and to world peace.(5)

Conferences on Health Promotion

Growing expectations in public health around the world prompted WHO to partner with Canada to host an international conference on Health Promotion in 1986. It was held in Ottawa, and produced not only the "Ottawa Charter for Health Promotion" but also served as a prelude to subsequent international conferences on health promotion. The Ottawa Charter defined Health Promotion as the process of enabling people to increase control over and to improve their health. To reach a state of complete physical, mental and social well being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment. Health is, therefore, seen as a resource for everyday life, not the objective of living. The fundamental conditions and resources for health are: peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice and equity. Health promotion thus is not just the responsibility of the health sector, but goes beyond healthy lifestyles to well being. The Charter called for advocacy for health actions for bringing about favorable political, economic, social, cultural, environmental, behavioral and biological factors for health, enabling people to take control of the factors influencing their health and mediation for multi sectoral action. The Charter defined Health Promotion action as one a) which builds up healthy public

policy that combines diverse but complementary approaches including legislation, fiscal measures, taxation and organizational change to build policies which foster equity, b) create supportive environments, c) support community action through empowerment of communities - their ownership and control of their own endeavors and destinies, d) develop personal skills by providing information, education for health, and enhancing life skills and e) reorienting health services towards health promotion from just providing clinical and curative services.(11)

This benchmark conference led to a series of conferences on health promotion - Adelaide (1988), Sundsvall (1991), Jakarta (1997), Mexico-City (2000), Bangkok (2005) and Nairobi (2009). In Adelaide, the member states acknowledged that government sectors such as agriculture, trade, education, industry and communication had to consider health as an essential factor when formulating healthy public policy. The Sundsvall statement highlighted that poverty and deprivation affecting millions of people who were living in extremely degraded environment affected health. In Jakarta too poverty, low status of women, civil and domestic violence were listed as the major threats to health. The Mexico statement called upon the international community to address the social determinants of health to facilitate achievement of health-related millennium development goals. The Bangkok charter identified four commitments to make health promotion (a) central to the global development agenda; (b) a core responsibility for all governments (c) a key focus of communities and civil society; and (d) a requirement for good corporate practice.(12,13) The last conference in October 2009 in Nairobi called for urgent need to strengthen leadership and workforce, mainstream health promotion, empower communities and individuals, enhance participatory processes and build and apply knowledge for health promotion.

The health promotion emblem [Figure 2] adopted at the first international conference on health promotion in Ottawa and evolved at subsequent conferences symbolizes the approach to health promotion. The logo has a circle with three wings. It incorporates five key action areas in health promotion (build healthy public policy, create supportive environments for health, strengthen community action for health, develop personal skills and reorient health services) and three basic HP strategies (to enable, mediate and advocate).

Health promotion emblem

a. The outer circle represents the goal of "Building Healthy Public Policies" and the need for policies to "hold things together". This circle has three wings inside it which symbolise the need to address all five key action areas of health promotion identified in the Ottawa Charter in an integrated and complementary manner.

b. The small circle stands for the three basic strategies for health promotion, "enabling, mediating, and advocacy".

c. The three wings represent and contain the words of the five key action areas for health promotion – reorient health services, create supportive environment, develop personal skills and strengthen community action.(14)

True to its recognition of health being more influenced by factors outside the health sector, health promotion calls for concerted action by multiple sectors in advocacy, financial investment, capacity building, legislations, research and building partnerships. The multisectoral stakeholder approach includes participation from different ministries, public and private sector institutions, civil society, and communities all under the aegis of the Ministry of Health.(3)

Approaches to Health Promotion

Health promotion efforts can be directed toward priority health conditions involving a large population and promoting multiple interventions. This issue-based approach will work best if complemented by settings-based designs. The settings-based designs can be implemented in schools, workplaces, markets, residential areas, etc to address priority health problems by taking into account the complex health determinants such as behaviors, cultural beliefs, practices, etc that operate in the places people live and work. Settings-based design also facilitates integration of health promotion actions into the social activities with consideration for existing local situations.(3)

The conceptual framework in Figure 3 below summarizes the approaches to health promotion. It looks at the need of the whole population. The population for any disease can be divided into four groups a) healthy population, b) population with risk factors, c) population with symptoms and d) population with disease or disorder. Each of these four population groups needs to be targeted with specific interventions to comprehensively address the need of the whole population. In brief, it encompassed primordial prevention for healthy population to curative and rehabilitative care of the population with disease. Primordial prevention aspires to establish and maintain conditions to minimize hazards to health. It consists of actions and measures that inhibit the emergence and establishment of environmental, economic, social and behavioral conditions, cultural patterns of living known to increase the risk of disease.(15)

Communicable Diseases

These diseases can be adequately addressed through health promotion approach. Here is one example: Improving use of ITNs to prevent malaria: Insecticide-treated bed-nets (ITNs) are recommended in malaria endemic areas as a key intervention at the individual level in preventing malaria by preventing contact between mosquitoes and humans. (a) The individual level health promotion action would include providing access to ITNs and encouraging their regular and proper use every night from dusk to dawn. Available evidence points to the fact that this can be best achieved by social marketing campaigns to promote demand of ITNs. The messages should be tailored to cultural beliefs, for example the belief in some communities that mosquitoes have no role in the etiology of malaria. Distribution of ITNs to the community should ideally be followed by 'hang up' campaigns by trained health care workers educating the community on how to use the nets and helping them hang the nets, especially for the most vulnerable groups. (b) The community empowerment efforts, a collaborative initiative with the

community to understand the cultural beliefs and behaviours and educating them about the disease would produce desirable results. There are documented examples of how women in a community empowerment program in Thailand developed family malaria protection plans, provided malaria education to community members, mosquito-control measures in a campaign, scaled-up use of insecticide-impregnated bed nets, instituted malaria control among migrant labourers, as well as activities to raise income for their families. Another program in Papua New Guinea empowered community members to take responsibility for the procurement, distribution and effective use of bed nets in the village, which led to a significant decrease in the incidence of malaria-related mortality and morbidity. (c) Strengthen health systems, integration of malaria vector control and personal protection into the health system through innovative linkages to ongoing health programs and campaigns is likely to lead to strong synergies, economies, and more rapid health system strengthening compared to new vertical programmes.. Successful examples of this include piggybacking the distribution of ITNs through antenatal care or immunization campaigns for measles and polio. (d) Partnerships are key in malaria control because of the involvement of multiple sectors. Action outside the health sector to remove barriers to the uptake of malaria prevention strategies has included lobbying for reduction or waiver of taxes and tariffs on mosquito nets, netting materials and insecticides and stimulating local ITN industries. Intersectoral collaboration has played an integral role in vector control measures for malaria prevention, including environmental modification, larval control, etc.(17)

No communicable Diseases

In NCDs, two path-breaking studies need special mention. These studies are the Framingham Heart Study (started in 1951) and study on smoking among British doctor (started in 1948) have helped us in understanding how lifestyle affects various NCDs. The study in British doctors showed that prolonged cigarette smoking from early adult life tripled age-specific mortality. The excess mortality associated with smoking mainly involved vascular, neoplastic and respiratory diseases caused by smoking. The Framingham Heart Study has led to the identification of major CVD risk factors such and blood pressure, blood triglycerides and cholesterol level, age, gender and psychosocial issues (Framingham Heart Study).(18)

Cardiovascular Diseases

In the early 1970s the mortality rate from coronary heart disease was the highest in the world among men of Finland. The dietary practices of the Finnish population centered around dairy products and their food was rich in saturated fats, salt and low in unsaturated fats, fruits and vegetables. The North Karelia project, a major community-based intervention was launched in North Karelia, a fairly rural and economically poor province. This project developed comprehensive community based strategies to change the dietary habits of the population, with the main goal to reduce the high cholesterol levels in the population. The strategy focused on reduction intake of

high saturated fat as well as the salt intake and to increase the consumption of fruits and vegetables. At the individual and community level, health information and nutritional counseling were made available, skills were developed, social and environmental support was provided all the while ensuring community participation. The health system was closely involved with the project. The project also developed strong partnerships with schools, health related and other nongovernmental organizations, supermarkets and food industry, community-based organizations and media. Collaborations were done with the food industry to reduce the fat and salt content of common food items such as dairy food, processed meat and bakery items. Dairy farmers were encouraged to switch to berry farming through the launching of a Berry project. The North Karelia project was extended to the entire country with the health care services also responsible along with schools and nongovernmental agencies in implementing nutrition and health education. Nation-wide nutrition education and collaboration with food industry were backed by legislative actions and were rewarded with remarkable results. Surveys showed a transformation in dietary habits with a marked reduction intake in saturated fats and salt and declared ischemic heart disease mortality declining by 73% in North Karelia and by 65% in Finland from 1971 to 1995.(19)

Settings Based Approach to Health Promotion

The concept of 'healthy settings' which maximizes disease prevention through a whole system approach had emerged from WHO's Health for All strategy and Ottawa Charter. The call for supportive environments was followed up by the Sundwal statement of 1992 and the Jakarta declaration of 1997. The settings approach builds on the principles of community participation, partnership, empowerment and equity and replaces an over reliance on individualistic methods with a more holistic and multidisciplinary approach to integrate action across risk factors. The 'Healthy Cities' programme launched by WHO in 1986 was soon followed up by similar initiatives in smaller settings such as schools, villages, hospitals, etc.(20)

Health Promoting Schools

Health promoting schools build health into all aspects of life in school and community based on the consideration that health is essential for learning and development. To further this concept, WHO and other UN agencies developed an initiative, 'Focusing Resources on Effective School Health (FRESH), emphasizing on the benefit to both health and education if all schools were to implement school health policies, a healthy school environment, with the provision of safe water and sanitation an essential first step, skills-based health education and school-based health and nutrition services.(21)

Healthy Work Places

Currently, globally an estimated two million people die each year as a result of occupational accidents and work-related illnesses or injuries and 268 million nonfatal workplace accidents result in an average of three lost workdays per casualty, as well as 160 million new cases of work-related illness each year.(22) Healthy work places envision building a

healthy workforce as well as providing them with healthy working conditions. Healthy working environments translate to better health outcomes for the employees and better business outcomes for the organizations

Health Promotion in India

Health promotion is strongly built into the concept of all the national health programs with implementation envisaged through the primary health care system based on the principles on equitable distribution, community participation, intersectoral coordination and appropriate technology. Nevertheless, it has received lower priority compared to clinical care. The government, through the component of IEC has always strived to address the issue of lack of information, which is a major barrier to increasing accessibility of health care services.(24) The National Rural Health Mission (NRHM) called for a synergistic approach by relating health to determinants of good health such as segments of nutrition, sanitation, hygiene and safe drinking water and by revitalizing local traditions and mainstreaming the Ayurvedic, Unani, Siddha and Homeopathic systems of medicine to facilitate health care.(25) NRHM offers an excellent opportunity to target and reach every beneficiary with appropriate interventions through microplanning into district planning process.(26)

Health promotion component needs to be strengthened with simple, cost-effective, innovative, culturally and geographically appropriate models, combining the issue-based and settings-based designs and ensuring community participation. Replicability of successful health promotion initiatives and best practices from across the world and within the country needs to be assessed. Efforts have already been initiated to build up healthy settings such as schools, hospitals, work places, etc.(20,22,27) For effective implementation of health promotion we need to engage sectors beyond health and adopt an approach of health in all policies rather than just the health policy.

Conclusions

Today, there is a global acceptance that health and social well being are determined by a lot of factors which are outside the health system which include inequities due to socioeconomic political factors, new patterns of consumption associated with food and communication, demographic changes that affect working conditions, learning environments, family patterns, the culture and social fabric of societies; sociopolitical and economic changes, including commercialization and trade and global environmental change. To counter the challenges due to the changing scenarios such as demographic and epidemiological transition, urbanization, climate change, food insecurity, financial crisis, etc. health promotion has emerged as an important tool; nevertheless the need for newer, innovative approaches cannot be understated. .

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A Literature Review of Musculoskeletal Disorders in Computer Users

Metta. Siresha* and Vijaya Kumari**
Department of Resource management and Consumer Sciences,
College of Home Science, Acharya N.G. Ranga Agricultural University, Guntur

Abstract
This study highlights the evidence for an association between computer work, workplace and workers. High demands had driven the human workers to work faster and adapt to their un-ergonomically designed workstation for a prolonged period of time. Several reviews have indicated a possible causal relationship between computer work and musculoskeletal complaints. With an increase of work stress and work-related musculoskeletal disorders (WRMSDs) affects the physical health and productivity of workers. The findings from this study showed the incidence of awkward postures, repetitive motions and anthropometric data mismatches had contributed to Musculoskeletal Disorders (MSDs) problems. The study further concludes that as the dependence of human beings on technology is increasing, the dangers for human health are also getting enhanced day by day. By creating awareness and providing on the job training about proper ergonomics can bring considerable benefits for organizations and individuals.
Key words: Musculoskeletal Disorders (MSDs), Ergonomics, workplace, computer operators.

Introduction

Over the past few decades, computer-based technology has become indispensable in all areas. The availability of computers has made work faster, easier, neater and less frustrating to the users. Computers have become increasingly common in both workplaces and homes. On one hand, computers have made lives so easy but on the other hand they have created so many risks for human health such as damaged eyesight, bad posture, arthritis in fingers and computer stress injuries that can be caused by sitting in one position for a prolonged period of time. It is estimated that today at least 75% of all jobs involve some level of computer use; this means three-quarters of the workforce are being exposed to numerous health problems. The figure for people working with and using computers recreationally is to increase considerably in the coming years so it is crucially important that these problems are identified and resolved.

Musculoskeletal disorders (MSDs) are group of conditions that involves the nerves, tendons, muscles, and supporting structures such as intervertebral discs. They represent a wide range of disorders, which can differ in severity from mild periodic symptoms to severe chronic and debilitating conditions. Examples include carpal tunnel syndrome, tension neck syndrome, and low back pain. Pain and discomfort may interfere with everyday activities. MSDs are extremely common, and increases risk with age. Early diagnosis is the key to ease pain while potentially decreasing further bodily damage. Rapid technological developments, especially in the use of electronic data, have affected both workers and the workplace (Jensen *et al.,* 2002). The intention of this literature review was to provide an

understanding the ergonomic deficiencies in the design of computer workstations and their effects on the musculoskeletal system of the user and suggest strategies to reduce or eliminate these deficiencies to improve occupational health and safety, employee performance, productivity and satisfaction.

Ergonomic Factors for Computer Operators

An ergonomic design computer workstation environment should eliminate static or awkward posture, repetitive motion of the worker, poor access or inadequate clearance and excessive reach to work areas. Ergonomics is the factors human health that deal fitting task to the man. Work related Musculoskeletal Disorders (WMSDs) are a common health concern and a major source of occupational illness throughout the world. At present, MSDs are one of the most obvious problems ergonomists come across in the workplace all over the world (Choobineh et al., 2007). It has become a priority to prevent WMSDs in many countries with the reduction or elimination of physical disorders associated with poor ergonomic design known as Musculoskeletal Stress Disorders (MSD's) Eye, neck and back strain. Fatigue, headache, Wrist, hand, elbow and shoulder diseases , Carpal Tunnel Syndrome , Tenosynovitis , Tendonitis , Synovitis (da Costa and Vieira, 2010 and Sweere, 2002).

Among computer users are exposed frequently to these risk factors, or for long periods of time. The conditions for exposing a user to the risk of MSDs associated with computer use are as follows: Keying for long periods of time without breaks or rest, Using force when striking the keyboard or when gripping the pointing device (e.g. mouse, trackball), Working with awkward neck, shoulder, elbow, wrist, or back postures, Remaining in the same position for a long time with little or no movement (e.g. sitting, holding the mouse), Continuous pressure against (leaning on) the wrist rest, work surface edge, or armrest with the wrists, forearms, or elbows; or against the front edge of the chair with the back of the legs. OSHA (2005)

Vern *et al.* (1997) conducted a review in assessing the work-relatedness of MSDs. The review involves examination of relevant epidemiologic information to assess the strength of the available evidence that, under certain conditions of exposure, specific risk factors could increase the risk of MSDs or increase the likelihood of impairment or disability from MSDs. The Observation suggests that psychosocial factors represent generalize risk factors for work related MSDs.

The biomechanical load increases with an increase in neck and shoulder flexion on surrounding structures, leading to discomfort and probably the development of MSDs (Fujiwara *et al.,* 2009). Orhan (2011) determined the effect of musculoskeletal discomfort factors that contribute to WRMSDs resulting from intensive use of computers in work places. The findings from this study shows that, the gender psychosocial factors like working with computers, office ergonomics qualities such as availability of foot support& availability of sufficient lightening were significant factors of the formation of work related WRMSDs. Additionally, it was shown that physical exposures are associated with increased risk of upper extremity disorders. The research also provides evidence that the symptoms of musculoskeletal discomfort and the frequency of these symptoms were also significant in the development of

WRMSDs. Lack of proper intervention or training on appropriate posture is an unavoidable reason. This exposes workers to repetitive motions of the upper extremities as well as sustained awkward lower back postures. Carpal Tunnel Syndrome, trigger finger, golfer's or tennis elbow, along with cervical and lumbar disorders are examples of WMSDs that can be alleviated through appropriate ergonomics and proper training (Robertson *et al.,* 2008).

Oha *et al.* (2014) studied the prevalence of musculoskeletal pain (MSP) by anatomical region during the past 12 months and to investigate its association with personal characteristics and work-related risk factors among Estonian office workers using computers and it was found that (77%) reported MSP in at least one anatomical region during the past 12 months. Most prevalent was pain in the neck (51%), followed by low back pain (42%), wrist/hand pain (35%) and shoulder pain (30%). Ergonomic techniques that can make their work easier and more comfortable, presenting computer use as a serious health hazard may modify health beliefs in a way that is unhelpful.

Chowdhury (2015) conducted an ergonomic assessment effects on musculoskeletal system and the design of computer workstations and risks of the university employees. Three equations were developed for predicting the probabilities of a user having slightly, moderately or very uncomfortable pain when the postural and design factors are given. Identify the most significant factors contributing towards the WMSD symptoms which are, (1) inappropriate positioning of computer monitor and exposure to prolonged awkward posture of the (2) trunk or torso, (3) shoulder-upper arm, (4) forearm-elbows and (5) wrist and hand.

Gerr *et al.* (2004) examined the associations between computer use and MSD outcomes. It was found that the most consistent finding was the association observed between hours keying and hand/arm outcomes. Associations between some postural effects and musculoskeletal outcomes may also be inferred from the literature. In particular, placing the keyboard below the elbow, limiting head rotation, and resting the arms appears to result in reduced risk of neck/shoulder outcomes. Minimizing ulnar deviation and keyboard thickness appears to result in reduced risk of hand/arm outcome.

The workplace risk factors include hours of computer use, sustained awkward head and arm postures, poor lighting conditions, poor visual correction, and work organizational factors (Cole (2003), Daum (2004), Kryger(2003) and Palmer (2001).

Graf et. al (1995) Due to the improper design of the furniture, VDT operators have arm, hands, wrists pain. Anthropometrics of It is common practices to design for the 5th percentile female to the 95th percentile male. The 5th % female value for a particular dimension e.g. sitting height usually represents the smallest measurement for design in a population. Conversely, the 95th % male value may represent the largest dimension for which one is designing. The 5th % to 95th % range accommodates approximately 90% of the population. To design for a larger portion of the population, one might use the range from the 1st % female to the 99th % male.

Modification the workstation design is an alternative approach that can be used to overcome MSDs problems faced by standing workers. Normally, the primary concern in designing a workstation is focused on equipment performance and operating time. With respect to the physical design of an industrial workstation, four design dimensions that consist of work: height; normal and maximum reaches; lateral clearance and angle of vision; and eye height are very important (Kroemer, 2008). Deros *et al.* (2009) suggest the workstation designer to incorporate the users' anthropometrics data in specifying the appropriate dimensions for the workstation. The workstation may not be able to function effectively, if there are mismatches between the users' anthropometric data and workstation dimensions (Deros *et al.*, 2009; Ghazilla *et al.*, 2010).

Effect of Musculoskeletal Disorders on Physical Health and Productivity of Workers in Computer Users

Research evidences show that the longer the longer the duration to the exposure the greater the exposure risk of Musculoskeletal Disorders (MSDs).

Musculoskeletal disorders (MSDs) are mostly observed on different parts of body such as neck, shoulders, muscles, supporting structures *i.e.* intervertebral discs etc.,. They represent a wide range of disorders, which can differ in severity from mild periodic symptoms to severe chronic and debilitating condition. **Mekhora, *et al.*(2000) studied t**he long-term effects of ergonomic intervention on neck and shoulder discomfort among computer users with symptoms of tension neck syndrome was identified. Half of the subjects' work stations were immediately adjusted according to ergonomic recommendations for individual anthropometry. The other half received the intervention 3 months later. Discomfort evaluations (head, neck, shoulders, arms, and back) were conducted eight times within 6 months for both groups. The same patterns of decrease in the levels of discomfort of all body parts were present in both groups. It was concluded that ergonomic intervention can help to reduce the discomfort level of subjects with tension neck syndrome.

Jmker *et al.* (2007) reviewed the literature on "Should office workers spend fewer hours at their computer" showed moderate evidence for an association between the duration of mouse use and the incidence of hand–arm symptoms. In addition, the neck–shoulder region seemed less susceptible to exposure to computer use than the hand–arm region. Both findings are supported by a patho-physiological mechanism based on the overuse of muscles during computer use. The low number of high-quality studies prevents drawing a firm conclusion.

An ergonomic assessment was conducted on effects on musculoskeletal system and the design of computer workstations and risks of the University employees by Chowdhury (2015) and reported that 75.71% employees are suffering from upper and lower back pain. Next to it was shoulder and upper arm (45.71%) and then forearm and wrist (42.85%) discomfort which indicates the strenuous work of office employees cause a disorder more in the upper limbs than that of the lower limbs.

Hlobil *et al.* (2005) showed the same (positive) relationship between prolonged sitting at VDT workstation and neck pain. Sauter et al. (1991) shows that leg discomfort increased with low, soft seat pans, suggesting that postural constraint is more important than thigh compression as a risk factor for leg discomfort in VDT work. Wahlstrom (2005) and Joe ET (2008) reported that using high illumination system in workplaces increases productivity, efficiency of product but resulted in visual fatigue, eyestrain, headache, physiological stress.

Lin *et al.* (2009) recommended several methods for minimizing the effect of reflected glare on the screen. In the study he suggest that we should position our computer screen perpendicular to the light source and use equipment like light focusing diffuser or antiglare screen. Visual disorders like visual fatigue, myopia and changes of accommodative response increase with short viewing distance (Rosenfield, 2011).

Hagberg et al (2002) assessed if self-reports of reduced productivity at work occurred in computer users due to musculoskeletal symptoms and the associations between this and workplace and individual factors. Among computer users, 8% reported reduced productivity due to WRMDs with the mean productivity loss of 15% for women and 13% for men.

The authors suggested that the Work limitations' were self-reported using the Work Limitations Questionnaire (WLQ), a validated instrument designed to assess the degree to which health problems interfere with performing work activities and considered the effect of on-the–job 'work limitations' due to physical or mental health problems on employees' productivity (Lerner et al, 2003). Moreover, productivity loss may well occur after returning to full duty after sickness absence, as shown by another Dutch study, in which 60% of the workers with musculoskeletal disorders (MSD) were affected by reduced productivity immediately after the sick leave, and 40% one year after returning to work (Lotters, 2005).

Interventions for Minimizing the effects of Musculoskeletal Disorders on Physical Health in Computer Users

A intervention trial was evaluated by Rempel *et al.* (2006) on the effects of a wide forearm support surface and a trackball on upper body pain severity and incident musculoskeletal disorders among call centre operators at a large healthcare company. He randomized the participants to receive (1) ergonomics training only, (2) training plus a trackball, (3) training plus a forearm support, or (4) training plus a trackball and forearm support. Post-intervention, 63 participants were diagnosed with one or more incident musculoskeletal disorders. Hazard rate ratios showed a protective effect of the arm board for neck/shoulder disorders after adjusting for baseline pain levels and demographic and psychosocial factors. The arm board also significantly reduced neck/shoulder pain and right upper extremity pain in comparison to the control group.

Robertsone *et. al* (2009) conducted a study to examine the effects of office ergonomics training coupled with a highly adjustable chair on office workers' knowledge and musculoskeletal risks. Perceived control over the physical work environment was higher for both intervention groups as compared to workers in the control group. A significant increase in overall ergonomic

knowledge was observed for the intervention groups. Intervention groups exhibited higher level behavioral translation and had lower musculoskeletal risk than the control group.

Wahlstrom and Sweden (2005) The review summarizes the knowledge regarding ergonomics and musculoskeletal disorders and the association with computer work. The model emphasizes the associations between work organization, psychosocial factors and mental stress with physical demands and physical load. Further interventions should be carried out with management support and active involvement of the individual workers.

Goodman *et al.* (2005) also worked on Evaluation on Effectiveness of computer ergonomics interventions for an engineering company- a program was implemented by occupational therapist & physical therapist utilize the preventive measures with education about ergonomics, individualized evaluations of computer workstation, and recommendations for ergonomics & environmental changes. The program was deemed successful by 59 % of all therapist recommendation & 74% of ergonomic recommendation being implemented by the company. Successful implementation of ergonomics programs depend upon effective communication and education of the consumers, and the support, cooperation and collaboration of management and employees. Job design analysis identifies individual tasks a worker is required to perform and then identifies the ergonomic risk factors associated with job task(s) (Armstrong, Radwin, Hansen, and Kennedy, 1986).

All studies reviewed reported a high prevalence of MSDs in the samples studied; therefore, we conclude there is a relationship between computer use and MSDs. The diversity of workplace-based interventions for MSD likely reflects the variety of potential relevant hazards, the number and types of MSD, the distinctness of workplaces, and the practical challenges of trying to design, implement and evaluate policies, programmes and practices. We note that there are many studies (approximately 60%) conducted in office-based workplaces. There are a number of potential reasons for this: the prevalence of MSD in office-workers, the nature of the work and workplace with similar equipment designs and work patterns.

Ergonomic guidelines and the anthropometric data that can be used to create a user friendly, ergonomically correct computer work environment. Many factors are involved in the design of a computer workstation such as: VDT adjustability , Keyboard placement/adjustability \Work surface adjustability , Chair design/adjustability , Foot rests , Wrist rests , Glare screens , Lighting, task lighting, Ease of adjustability, Accessibility to components , Human Computer Interfaces (HCI's), Space savings.

Recommendations

- Take micro-breaks from repetitious activities or static postures every 30 minutes for one or two minutes before resuming that activity or posture.
- Type with the tips of the fingers. Less force is needed to depress the keys with the tips of the fingers. Use a light touch when keying.
- Change postures frequently throughout the day.
- Use larger muscles by moving from the elbow and shoulder,

rather than from the wrist, when operating the pointing device.

- Document holder Cognisance must be made of the fad that the workstation is located on a landing and a chair with castors may have other implications in view of the age of the users
- Relocate hard drive to allow for more leg room
- Use Flat screen monitor and anti glare screen
- Review locations of electrical sockets and requirement for additional sockets
- Use adjustable foot rest and key board stand to raise and adjust according to the height of the user.
- Eye height variance for the 5% female to 95% male operator.

Conclusion

This literature review presents the current evidence relating to ergonomic interventions, both broadly and more specifically computer users and their effects on musculoskeletal pain and posture. The result of the studies on MSDs are alarming and signifies the necessity on assessment of design of computer workstations, VDTs and the work postures of users to draw out the root-causes of growing number of cases of WMSDs. Recent studies pertaining to ergonomic interventions, their design and implementation and subsequently their outcomes are reviewed. Contemporary ergonomics stresses the importance of a participatory approach to prevention and solution finding, and evidence in support. The review considers the application of ergonomics knowledge to understanding musculoskeletal disorders amongst those using computer technologies and a guide for interpreting ergonomic guidelines and the anthropometric data that can be used to create a user friendly, ergonomically correct computer work environment.

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Health risk assessment methods for pesticide spraying farmers -A literature review

B.Vijayakumari [1] and M.Siresha[2]
Department of Resource management and consumer Sciences
College of Home Science , Acharya N.G Ranga Agricultural University, Guntur

Abstract:
Pesticides despite their known toxicity are widely used in developing countries for agricultural purposes. The purpose of this paper is to overview the health risks involved for pesticide spraying farmers and methods used for assessing the pesticide exposure to assess the health risks. Based on the literature available, the pesticide exposure monitoring methods are Passive dosimetry and Biological monitoring methods. There are still research gaps causing uncertainty in the predictions of long term health and environmental effects
Key words: agriculture, Absorption, insecticides

Introduction:

Nearly 50% of the world labour force is employed in agriculture. Over the last 50 years, agriculture has deeply changed with a massive utilisation of pesticides and fertilisers to enhance crop protection and production, food quality and food preservation.

Pesticides are widely used in most sectors of the agricultural production to prevent or reduce losses by pests and thus can improve yield as well as quality of the produce, even in terms of cosmetic appeal, which is often important to consumers [20,7]. Despite their popularity and extensive use, pesticides serious concerns about health risks arising from the exposure of farmers when mixing and applying pesticides or working in treated fields and from residues on food and in drinking water for the general population have been raised [18,22,29,31,32]. These activities have caused a number of accidental poisonings, and even the routine use of pesticides can pose major health risks to farmers both in the short and the long run and can degrade the environment. Furthermore, many end users have poor knowledge of the risks associated to the use of pesticides, including the essential role of the correct application and the necessary precautions [9,24,26,33]. Even farmers who are well aware of the harmful effects of pesticides are sometimes unable to translate this awareness into their practices [1,10,13,27,35].

On the basis of these contradictory results of the literature, discussions among scientists and the public focused on the real, predicted, and perceived risks that pesticides pose to human health (worker exposure during pesticide use and consumer exposure to pesticide residues found in fresh fruit, vegetables and drinking water) and the environment (water and air contamination, toxic effects on non-target organisms) are fully justified [5, 10,19,22]

Pesticide and Human Health:

Pesticides can enter the human body through inhalation, ingestion or by dermal penetration through skin. Those who work with agricultural pesticides are the most at risk if they are not properly dressed or if there are broken and leaking equipment. Absorption of insecticides through the skin, respiratory passages or

by oral route may result in acute toxicity. Long-term exposure to the sub-toxic doses results in harmful effects on various systems viz. neurotoxicity, neuro-endocrinotoxicity, carcinogenicity, etc. [27]

Risk assessment methods:

Risk assessment of pesticide impact on human health is not an easy and particularly accurate process because of differences in the periods and the levels of exposure, type of pesticides (regarding toxicity), mixtures or cocktails used in the field, and the geographic and meteorological characteristics of the agricultural areas where pesticides are applied [3, 21]. Such differences refer mainly to the people who prepare the mixtures in the field, the pesticide sprayers, and also the population that lives near the sprayed areas, pesticide storage facilities, greenhouses, or open fields. Therefore, considering that human health risk is a function of pesticide toxicity and exposure, a greater risk is expected to arise from high exposure to a moderately toxic pesticide than from little exposure to a highly toxic pesticide. However, whether or not dietary exposure of the general population to pesticide residues found on food and drinking water consists of a potential threat to human health, is still the subject of great scientific controversy [17].

Pesticides cause headaches, blurred vision, vomiting, abdominal pain, suppress the immune system, lead to blood and liver diseases, depression, asthma, and nerve damage. The issue with these effects is that they may wait appear until a while after being ingested so tracing the symptoms back to the pesticide can prove to be quite difficult. Many of the symptoms can be mistaken for the flu and therefore not properly treated. The inactive ingredients such as chloroform can also cause serious risks to the liver and nervous system.

Pesticide Exposure Monitoring Methods

The two primary methods for assessing exposure to pesticides are *passive dosimetry*, which is more commonly used, and *biological monitoring*. .

1 PASSIVE DOSIMETRY

Passive dosimetry measures the amount of pesticide that comes into contact with the skin, clothing and the breathing zone of the worker

Estimation of Respiratory Exposure

Air sampling for occupational exposure to pesticides normally consists of measurement of pesticide concentrations in the worker's breathing zone, with a portable air-sampling pump and a sampling train which includes some type of collection device. The latter device, or sampling media, selected are based on the physical and chemical properties of the compound to be measured. Field workers may be exposed to chemical vapors, solid particulates or water- based aerosols. Examples of sampling media include membrane filters, sorbent tubes, polyurethane foam and charcoal

Estimation of Dermal Exposure

One of the most challenging aspects of modern exposure science has been the proper characterization of dermal exposures. Skin contact with hazardous chemicals is an important exposure route for certain occupational groups [11,12,30], leading to the development of

new quantitative methods [25,30]. Dermal contact and absorption can also be important in residential settings [28,34] proper estimates of exposures and doses are still lacking [15]

Dermal exposure sampling methods fall into three general categories: surrogate skin techniques, chemical removal techniques and fluorescent tracer techniques [30]

1 Surrogate Skin Techniques

Patches. Surrogate skin methods involve placing a collection medium against the skin and subsequently analyzing it for chemical content. Absorbent patches or dosimeters are attached to the different representative parts of body, either inside or outside the clothing The quantities of contaminants on patches are then determined using suitable analytical techniques. The rate of clothing penetration may be determined using the difference between the amounts of chemicals deposited on the inside and outside clothing patches.[2]

Glove method: Gloves provide a technique for monitoring dermal hand exposure. Several light absorbent cloth gloves are commercially available. They can be used in place of, underneath or on top of the protective gloves. As with all dosimeters, gloves need to be pretested to ensure that they do not contain materials that might interfere with the contaminant under study[6]

Whole body method: A whole body dosimeter, which is usually a type of clothing (including socks) is used for monitoring total dermal exposure. It should be made of suitable absorbent materials such as cotton or cotton/polyester. Standard whole body dosimeters that are commercially available include white cot- ton socks, long-sleeved cotton T-shirts, and thermal underwear bottoms and tops. After exposure, dosimeters should be removed and sectioned for storage, extraction, and analysis. This procedure may be more suitable for liquids than dry contaminants, since powders may be lost in handling. Workers are required to wear whole body dosimeters underneath their normal work clothing to simulate the absorptive surfaces of bare skin protected by normal work clothing. [16]

Depending on the amount of contamination, whole body dosimeters are at least sectioned into arms, torso and legs. Whole-body suits seem to give more reliable data than patches. However, both techniques have their advantages and disadvantages [2]

Removal Methods : Removal techniques including washing, wiping, tape-stripping and suction remove chemicals from the skin or surfaces. Collecting media are then analyzed by suitable techniques. Removal methods are particularly suitable for substances remaining on the skin for a long time, such as dusts and sticky low volatile substances. These techniques, however, are not easily applicable to assess the total body exposure.

Washing: Washing method is usually applied to the hands where a significant proportion of total dermal exposure occurs. For this purpose, the hand is placed in a sealable bag containing a known volume of a suitable solvent. Vigorous shaking then

applied for a given period to wash out the chemicals from the surface of the skin. The resulting mixture subsequently analyzed by a suitable analytical method

Wiping: This method can be carried out dry or using absorbent materials soaked in an appropriate solvent like water, alcohol or other solvents, providing these solvents do not damage the skin, or increase penetration of the chemicals.

Tape stripping: Tape stripping removes a thin layer of the outer surface of the skin for determining the amount of the chemicals deposited on the skin.It is a good method for compounds with low volatility and long retention time on the skin.[4] However, it has been argued that tape stripping, as wipe sampling, may not be as accurate as washing method due to the larger variation caused by the operator performing the sampling.[2]

Visualization techniques : These techniques rely on measuring fluorescent materials deposited or retained on the skin or other surfaces under ultraviolet light by suitable detection or imaging systems.[23] Fluorescence might be produced by the chemical itself or by a tracer added to the chemical. The most commonly used fluorescent tracers are Uvitex, Tinopal and Calcoflur.

2 Bio-monitoring: Bio-monitoring involves the measurement of the parent pesticide, its metabolite or reaction product in biological media, such as blood or urine, to determine if exposure to this pesticide has occurred. Following environmental exposure, pesticides can be absorbed through the skin, respiratory, and gastrointestinal tract. In this context bio-monitoring is of importance since it provides data reflecting the cumulative dose absorbed by the body by all routes.

2.1 Biological samples

Blood (plasma and serum), and urine are the most widely used.Blood samples have the advantage that in most cases the parent compound is measured, instead of the metabolite.[2] Therefore, it yields more accurate information about the specific exposure. Furthermore, the concentrations of pesticides measured in blood/plasma/serum are often more stable than in other biological fluids and do not depend on external factors such as water intake. However, sampling of blood is an invasive technique for epidemiologic research which can limit the subjects participation rate

On the contrary, urine samples are an easy sample to obtain, enabling repeated sampling and will suffer less from decreasing participation rates compared to studies using blood samples[2]. However, in urine, metabolites are usually measured instead of parent compounds, and the concentrations may be influenced by factors such as dilution due to differences in water intake.

Beside blood and urine samples, other fluids or human products can be used to measure pesticide exposure. A method was described to assess insecticide exposure using amniotic fluid during a critical period of foetus development (between the 16^{th} and 20^{th} week of pregnancy), however its invasive characteristic may be an important disadvantage for using this type of biological sample [22] . Another method currently used is measuring pesticides in hair, which enables the detection of pesticide exposure over a longer time-period, as pesticides appear to be stably fixed in hair, compared to blood and

urine. However, it requires more complex pre-analytical procedures.

Conclusion: This study focused on the health risks involved and the methods used for assessing the exposure of the pesticides quantitatively . Despite many studies on the fate and toxicity of pesticides, there are research gaps causing uncertainty in the predictions of their long-term health and environmental effects. So there is need to carry out studies to evaluate the risk of toxicity due to pesticides. There is need for further research to be conducted regarding the protective clothing or preventive gears suitable for pesticide spraying farmers.

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Bolloju Basavalinga Ahmad Alibaba,
Lecturer in English,ASD GDCW (A),Kakinada

Abstract:
Leisure is a term of relative importance. To begin with, let us see what leisure is. Every day we do several activities routinely such as going to the office, attending office work, taking a shower, cooking, cleaning and so on. We spend some considerable time to finish these works every day. The amount of time spent for these daily activities is generally called 'working hours' or 'working time'. Apart from our sleeping hours at night, we will be having a few hours at our disposal even after completing these day-to-day essential activities. Those few hours are known as 'leisure time' and whatever activities we perform during this time, over and above those daily works, are called 'leisure activities'. Although these two kinds of people spend nothing to pursue their walking activity, there are other people who spend thousands of pounds to go water skiing, scuba diving, windsurfing etc just to enjoy their free time. Therefore, in short, leisure means different to different people.
Key words: leisure time activity, middle-aged, overweight, person

Introduction

The English word "leisure" comes from the Latin word *licere* which means 'to be allowed or permitted to be free'. English borrowed this word through French during 14th century. In those medieval times, life was leisurely and people used to have quite a lot of time to spend freely. As the time passed, there were many changes taking place in their lifestyle. For example, during the Industrial Revolution in late 18th and early 19th centuries, life became complex, especially for the common people, since they had to earn their livelihood by working in factories for long shifts, sometimes for 18 hours a day. Consequently, they had neither time nor money to engage themselves in leisure activities. Later, by the end of 19th century, reforms were undertaken owing to the efforts of trade unions, so that the long working hours were decreased and 5-day week came into effect. Now the common people also began to have Saturday and Sunday as holidays which lent them scope for taking up some or other kind of leisure activity.

For about two decades after the Second World War (1939-1945), the lifestyle of people did not change rapidly. However, the fast developments in science and technology began to affect the public mostly from the decade of 1970s. Things began to change more rapidly during the last two decades of the 20th century. People have become more and more health conscious. Apart from taking nutritious foods, they have started to give a lot of importance for leisure activities. They have begun to undertake various activities to spend their free time fruitfully. They have become more interested in performing their leisure activities in groups and outside their homes. The increased impetus given to travel and tourism can be one such example.

There are certainly some factors involved concerning the increased significance given to leisure activities, such as personal interests, aptitudes, geographic locations, and most importantly the cost

factor or in other words the affordability. While the field of science and technology has been developing newer apparatuses, machines and equipment to promote leisure activities, the field of commerce has begun to cater to the needs of the people who are willing to spend money for participating in leisure time activities. Therefore, in this arena there has been a spurt of business both locally and internationally as well.

The diversity, the nature, the present developments about the participation and non-participation levels of people and their contribution to the leisure industry will be studied in the course of this assignment.

Active Leisure Activities

Although leisure activities are diverse, they are divided into three kinds, depending on the place and nature: 1. the active leisure activities, 2. the passive leisure activities and 3. the home-based leisure activities.

If someone puts in a lot of physical and mental effort to pursue his leisure activity, it is then called an 'active leisure activity'. Active leisure activities are further classified, basing on the time and energy involved, into two categories: the low impact and the high impact activities, For example, walking and yoga practice do not require much energy while kickboxing, snorkelling, soccer etc need a lot of energy. The former are known as 'low impact activities' and the latter are known as 'high impact activities'. In contrast, there are some activities such as chess, scrabble, video games etc which involve absolutely nothing physical but mental energy. Whatever be the activity, the ultimate impact is on the mind since all these activities are basically recreational in purpose.

Motivation is the key element for the choice of active leisure activities. It can be from within (intrinsic) or from without (extrinsic) of the individual. Personal interest may drive a person to take up a leisure activity such as playing chess. It is an intrinsic motivation that drives him to be an expert in chess in the course of time. A rock star may be an inspiration for someone who later turns out to be another famous rock star due to the initial extrinsic motivation. Another important element is the skill. Some degree of skill is essential for activities such as sports.

In fact, we cannot strictly categorize all active leisure activities. One and the same activity is seen as an indoor as well as outdoor activity. For instance, school children may play cricket on Sundays either in their family courtyard at home (as an indoor activity) or in a sports stadium (as an outdoor activity). Sometimes, they might play a friendly match against the boys of another school as a team activity. Therefore, what is important for consideration is not the kind but the benefits that are gained through the leisure activities. Whether they are low-impact or high-impact, all leisure activities give physical, psychological and social benefits to the participants. Some activities provide two advantages at a time, for example, team sports give both social and psychological benefits to all the participants as they work in co-operation and meet new friends.

Passive Leisure Activities

Active leisure activities such as sports have an internal aim of keeping fit. On the other hand, passive leisure activities are solely recreational. Improving health by leisure activities is of secondary importance for the participants of passive leisure activities. That is why doctors and scientists would not like to encourage these activities. They argue that, for instance, playing sports regularly promotes fitness whereas playing video games in the same manner leads to illnesses in the long run. Nevertheless, passive leisure activities also require skill and motivation. For example, the magic show—it is certainly passive leisure activity for the audience as well as for the performer—in which the performer needs a lot of skill, especially if he is interested to take it up as his vocation. Playing chess is another good example. Not only the leisure time, but the aptitude to enjoy and oftentimes the affordability to spend in order to excel in the selected activity also play a key role. In short, passive leisure activities mirror the interests and lifestyles of the participants.

a) Cinema

Since its inception, cinema has always attracted the people; it can be considered the A-1 passive leisure activity across the globe. People would like to spend two or three hours in a movie theatre so coolly that they forget their real life problems. As time passed, science brought out a new equipment, known as television, which caused hundreds of cine theatres to close down. With the growth of multichannel entertainment programmes, this passive leisure activity has got confined to drawing rooms. Now people no longer go to the cinema for entertainment, or go to the stadium to watch a tournament because they are all telecasted by the channels. They simply couch in front of the "idiot box" and watch them at home. It is obvious, therefore, that passive leisure activity *per se* has not disappeared but the mode of performing it has radically changed. On the other hand, at times pictures like 'The Harry Potter' and 'Davinci Code' make the public visit the cine theatre because the producers have created them in such a fashion that such pictures cannot be enjoyed by watching through television.

b) Shopping

As population grew, the needs and luxuries of everyday life too changed. Shopping which was once an essential activity for maintaining a household, has now become a leisure activity. With the increased incomes, and the credit card facilities, people are turning out to be careless spendthrifts. As a result, a lot of malls or supermarkets cropped up in cities. There are various sections in these vast shopping complexes, such as foodstuff, garments, toys, stationery, dairy products, leather goods, electronic equipment, sanitary wares, and what not. Some of them, like the London's "The Harrods" have become internationally famous while others like France's "Carre foure" have been expanding all over the world. Even small cities in Asia and African continents are now having these malls. Here the important point for our discussion is that shopping has become a passive leisure activity, even though the limiting factor is yet the purse of the compulsive buyer.

c) Theatre, opera, shows, concerts and night time entertainment

To visit an animal park, to stroll in a botanical garden and to go to a museum have always been a favourite passive leisure activity of people. Operas and concerts, in spite of television, still attract the people who consider themselves more fashionable in the society. Similarly, trade fairs, agro or industrial exhibitions are visited by people, usually with families or friends. Another recent trend is 'clubbing and pubbing' among the youth while gambling and bingo received a revival. On one hand they stand out as examples of passive leisure activities and on the other they provide a runaway business to the organisers.

Home-based Leisure Pursuits

Under the home based leisure pursuits there are four major activities done by people: reading, gardening, home entertainment and hobbies. Let's have a deeper look into each of these.

a) **Reading:** Before the invention of TVs and internet, reading was the most popular home based leisure activity. Many enjoyed reading books at home as it was cheap and educative. Those classic bookshops and quiet libraries are slowly vanishing as the books are readily available on the internet in the form of e-books. In contrast, the journals and magazines are still read fondly.

b) **Home entertainment:** Home entertainment is the largest sector in the leisure activities. It includes all kinds of digital and electrical entertainment devices. Services like cable TV, internet, MOD (movie on demand services) and PC games are the most popular at present. This sector is also called info-entertainment as it is not only for time pass but also for informing oneself with the events and trends around the world. The most influential media is TV followed by internet. This ever innovating sector is one of the major causes for the decline of other leisure activities like outdoor games and reading.

c) **House and garden**

Gardening was once the most popular leisure activity. People were keen on maintaining a clean and good garden. Gardening declined with the increase in home entertainment. But it has come back thanks to the health benefits and media support, since gardening is today considered one of the healthiest leisure activities. Almost everyone now maintains a garden in front of their house.

d) **Hobbies and pastimes:** These traditional leisure activities are still very popular. Activities like playing chess, photography, painting, maintaining a pet come under this category. However the old ways are replaced with new digital ways. For example: photographers now upload their photos on the internet to show it to everyone around the world.

Regional Variations : Leisure activities are pursued by all people. However, there are some differences between one country and another. A number of factors cause the differences such as the type of climate / terrain, the population, local traditions, location and facilities, seasons etc.

Mountainous terrains are good for climbing, biking whereas coastal regions are good for canoeing, boating, surfing, and other water sports. All these

activities are out-of-home leisure pursuits.

Population profile of a country defines the pursuit of leisure activities. In UK, the number of retired people is more than the young people. So the old people (between 50 and 60+) go in for traditional hobbies like gardening and walking which is an outside home activity, while the younger generation prefer to watch TV, play video games, internet chatting etc which are home-bound activities.

Local traditions play a vital role in the leisure pursuits of people. They vary from region to region within a country. For instance, London has a long tradition of theatre. People still go to the theatre to watch Shakespeare dramas which are shown almost all through the year. But in Scotland, leisure events like fairs, folk singing in old fishing ports, Highland Games are still popular even today. Similarly, the German beer festivals, French Celtic festivals in Brittany and Spanish religious fiestas stand as examples of regional variations of leisure activities.

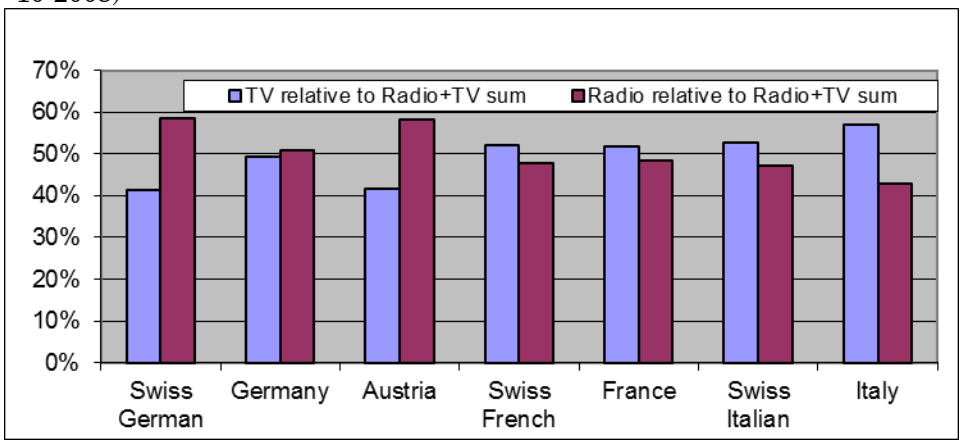
Further, seasons cause regional differences in leisure pursuits. For example, sports like cricket or tennis are not played in rainy seasons. Nowadays, there are indoor stadiums for these games to play even on rainy days. Tourist activities are usually taken up during summer season, but they depend on the season in the destination place. No one would like to visit European countries like UK or Ireland during winter days. Similarly, water sports are not undertaken in a freezing winter season.

Finally, the facilities provided in different locations cause regional variations. For instance, cities have more avenues than the rural areas for following leisure activities. Many sports competitions like regional rugby tournaments or international Olympics are usually held in cities owing the availability of infrastructural facilities. People living in small villages and towns often travel to cities in order to pursue their leisure activities such as participating in tournaments. To illustrate further the regional variations, here are some points with regard to television and radio;

- Watching television is a most common leisure activity in all the countries. According to the latest data in htpp://www.nationmaster.com/ (accessed on 1-10-2008), each person in UK spends 28 hours a week in watching television while in Italy it is 27 hours. In many countries like France, Germany, Ireland, it is 23 hours a week.
- Listening to the radio is yet a popular leisure activity, despite TV and other electronic media. The number of people listening to the radio differs from country to country. We can find variations within a single country also. For example, in Switzerland, there are three ethnic groups, viz, the German, the French and the Italian people. Each of them watch the TV and listen to the radio in their respective languages. In 2004, in a research conducted by Rosemarie Gilligan and Peter Heinzmann in Switzerland, a graphic survey was made comparing the TV watching and radio listening activities in Switzerland with those of France, Germany and Italy, in order to show how the original natives of those three countries differ in their leisure pursuits from their compatriots living

Switzerland. Here is the summary graph of their research (from htpp://www.cost269.org/ accessed on 2-10-2008)

Summary of Swiss and European TV and Radio consumption figures



Conclusion

Leisure time has become more important than before. With increased incomes earned by both the husband and wife, the demand for activities both inside and outside home has escalated over the years in UK and other European countries. From these figures it is clear that leisure activities play a significant role in the economy. As these activities encompass products and services as well, they are now regarded as industry. As a result, European governments allocate considerable funds in their annual budgets for this growing industry. For instance, in 2008 budget, the department of art, culture and leisure (DACL) in Northern Ireland was allocated with £5 million for sport, arts and leisure activities. The method the leisure time is spent, is a strong indicator of how well and healthy a person is.

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Dietary pattern and Nutritional Status of Adolescent Girls

Arati Chakra, Asst. Professor, Dept. of Home Science, K.V.R. GCW (A), Kurnool

Abstract

Growth is faster in the period of adolescence. The requirement of calorie, protein, vitamins and minerals during growth spurt is quite high. Increased nutritional needs at this juncture relate to the fact that adolescents gain up to 50% of their adult weight, more than 20% of their adult height, and 50% of their adult skeletal mass during this period. The main nutrition problems affecting adolescent girls include: under nutrition in terms of stunting, thinness, anaemia, reproductive health problems, and iodine, vitamin A and calcium deficiencies. Whereas over nutrition predisposes to chronic diseases, e.g.: diabetes, cardiovascular disease. The sample consists of 80 adolescents studying in I and II Year Degree in the age group of 17-19 years. The information on age, BMI, Dietary pattern and Nutritional status were collected. The study concludes that a more than half of the adolescents were having poor Dietary Pattern and 32% of them having poor Health and Nutritional status.

Key words: stunting, thinness, anaemia, reproductive health problems

Introduction

Adolescence is a unique period in life because it is a time of intense physical, psychosocial, and cognitive development. Growth is faster than at any other time in the individual's life except in the first year. Calorie and protein requirements are high during this critical period. Requirement of other nutrients e.g., iron, calcium and vitamins also increase. In summary, the main nutrition problems affecting adolescents include: under nutrition in terms of stunting, thinness, catch-up growth, and intrauterine growth retardation in pregnant adolescent girls; Micronutrient deficiency like iron deficiency and anaemia, iodine, vitamin A and calcium deficiencies and obesity. Under nutrition reduces work capacity, endurance and ability to concentrate and over nutrition predisposes to chronic diseases, e.g.: diabetes, cardiovascular disease etc. On the other hand, over-nutrition also has severe consequences. Obesity causes several non-communicable diseases such as cardiovascular diseases, diabetes, cancers and chronic respiratory diseases.

For young women a strong link exists between their food choices and their pursuit of a thin, ideal body shape. Women's preoccupation with food is likely responsible for their greater anxiety about food and eating (Brenner & Cunningham,1992; Pliner et al.,1990) and their more complex conceptualization of food particularly as it relates to health (Rappaport et al.,1993). Women use restrictive eating as a means of achieving their ideal body shape. Young women compare themselves to the other women and seeking an underweight body is like an epidemic, which may later lead to devastating health consequences. For example, eating disorders may lead to anemia, amenorrhea, malfunctioning of digestive system etc. The endocrine system is particularly affected in individuals with anorexia nervosa, who develop sexual dysfunction and impaired glucose tolerance.

Deficiencies in nutrition inflict long-term damage to both individuals and

society. Addressing the nutritional needs of adolescents could be an important step towards breaking the vicious cycle of intergenerational malnutrition. Hence an attempt was made to study the dietary pattern and its impact on the general health and Nutritional status of adolescent girls. The study has been taken up with following objectives-

1. To assess the nutritional status of adolescents.
2. To find out dietary pattern of the adolescents.
3. To create awareness among adolescents' on Nutrition and Health

Review of Literature

Hemamalini, Babitha, & Lalitha Kumari (2015) studied the nutritional status of obese school going children aged 11-15 years and compared the corporate and Government school children in Nambur mandal, Guntur District of Andhra Pradesh. The prevalence of over nutrition was significantly high in corporate school children than government school children. The incidence of overweight is seen in children of 64.2% boys and 73% girls belonging to high income level and studying in corporate school. Where in Government school children, the prevalence is very less i.e. 27.2% boys and 25.3% girls were showing obesity

Mondal, Biswas, Ravi Kumar, Arlappa, Chatterjee and Majumder (2015) assessed the nutritional status of rural govt. primary school children in Khammam district, Andhra Pradesh, India. Among 600 children, 36.0% were in Grade I malnutrition, 37.7% in Grade II malnutrition, 6.3% in Grade III and 19.0% of children were stunted and 4.0% were severely stunted. Girls (20.1%) were more stunted than boys (17.9%).

Susmitha, Jyothi, Prabakaran, & Ananthaiah (2015) assessed the Nutritional status of the adolescent girls residing in the Social welfare Hostel. The prevalence of thinness in the adolescents' girls was 57.56%, where as 64.6% were underweight. A 20% sub-sample of 542 subjects i.e. 135 subjects were examined for Haemoglobin estimation. 49.6% were found to be anaemic. The study revealed that a large proportion of adolescents were undernourished with stunting, energy deficient and/or anaemic.

Singh & Gopalkrishna (2014) reported that nearly 10-30 per cent of young people suffer from health impacting behaviours and conditions that need urgent attention of policy makers and public health professionals. Nutritional disorders (both malnutrition and over-nutrition), tobacco use, harmful alcohol use, other substance use, high risk sexual behaviours, stress, common mental disorders, and injuries (road traffic injuries, suicides, violence of different types) specifically affect this population and have long lasting impact.

Thurnham (2013) reported that Adolescence during the teenage years of 13 to 19 is a time of dramatic change. Adolescence is the only time in life besides infancy when the velocity of growth actually increases. While adolescence is an opportunity for catch-up growth, poor diets and the physical demands of early marriage and pregnancy curtail the opportunities for growth. To address this, education needs to be promoted to increase the age of marriage, micronutrient fortification should be supported to improve dietary quality and a high quality and diverse diet should be promoted to ensure adequate bone growth.

Midha et al (2012) did the Meta analysis of nine studies. 67,919 children

for obesity and 92,862 children for overweight aged 2 to 19 year were included for analysis. CDC/WHO criteria were used for classification of obesity. Prevalence of overweight and obesity was 12.64 and 3.39 per cent respectively. The overall prevalence rate was 12.64 per cent

Neha Sudhera and Sharda Sidhu (2012) reported the prevalence of obesity on the basis of various anthropometric variables among young adult Jat-Sikh females of Punjab, ranging in age from 18-25 years. The observations revealed that the prevalence of under nutrition, overweight and obesity according to BMI in young adult females was 21.3%, 20% and 10.7%, respectively. Wasnik et al (2012) conducted a study in Vizianagaram town of Andhra Pradesh. A sample of 420 girls aged 10-15 years was taken.

Methodology

The sample consists of 80 adolescents studying in I and II Year Degree in the age group of 17-19 years. The information on age, BMI, Dietary pattern and Nutritional status were collected. The Dietary Pattern and Nutritional Status Questionnaire were developed for the study

Height: Measurements of Height in centimeters were marked on a wall with the help of a measuring tape. All girls were measured against the wall. They were asked to remove their foot wear and to stand with heels together and their heads positioned so that the line of vision was perpendicular to the body. A glass scale was brought down to the top most point on the head. The height was recorded to the nearest 1 cm.

Weight: For measurement of weight, bathroom scale was used. The zero error was checked for and removed if present, every day. Their weight was recorded to the nearest 500 grams.

Body Mass Index: The BMI was computed BMI = (kg/m 2), where weight in (kg) and Height in meter (m). The data obtained was coded, tabulated and analyzed. Frequencies and percentages were calculated to find out Dietary pattern and Nutritional status of young women. Nutrition Awareness program was organized to develop healthy food habits.

Results and Discussion

Table1: Distribution of the sample to different category of Dietary Pattern

S.No	Category	Frequency	Percentage (%)
1	Poor	42	52.5
2	Good	36	45
3	Excellent	2	2.5

The result indicated that more than half of the sample (52%) is Poor, 45% are of Good whereas only 2.5 % Excellent in their dietary pattern.

Table 2: Distribution of the sample in terms of Nutritional Status

S.No	Category	Frequency	Percentage (%)
1	Excellent	0	0
2	Good	12	15
3	Average	36	45
4	Poor	32	40

In Nutritional Status only 15% of students have good health status having very few health ailments. 36% of the sample had average in health and nutritional status, fall sick once a while. Whereas 32% students had poor health status and having frequent health ailments like fever, cold, head ache, back ache, stomach ache, get tired easily etc. due to malnutrition and low immunity. The result also indicated that more than half of the sample (52%) are underweight, 45% are of normal weight whereas only 2.5 % of students over weight.

Conclusion

The study concludes that a more than half of the adolescents were having poor Dietary Pattern and 32% of them having poor Health and Nutritional status. Adolescents are expected to enjoy good health, but this does not true for the Adolescents basically those who are from rural areas of developing countries like India, where poverty, malnutrition and repeated infection are rampant. Though lot of initiative is being taken by Govt. through ICDS project to provide health and Nutrition Education to women in the age group of 15-45 years to improve the health and nutrition status of children, pregnant and lactating women in the most productive years of life but the nutritional need of this vulnerable group is being in ignored in our developmental programs. So the need of the hour is to plan and implement innovative programs in a comprehensive manner. At the same time awareness must be created among the students in school and colleges, so that the intergenerational cycle of poverty, malnourishment, and ill health can be broken.

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The Role of Health Benefits of Sport and Physical Activity

Bh. Arun Kumar,
Physical Director,
GMR Institute of technology
Rajam, Srikakulam

Abstract: Health equips children and young people with the strength and vitality required to enjoy and navigate their way through the inevitable challenges of youth, whilst in the case of adults the absence of health can severely impede one's ability to contribute and earn a living as an active member of society. Today, more and more national and international development organizations are using sport to add to their approaches in local, regional and global development and peace promotion programmes. This is done in close cooperation with sports organizations most of the time. Despite recent progress, the systematic use of sport and physical education for development is still in its early stages as many remain unconvinced of the impact sport can have on reaching development and humanitarian objectives.
Key words: Health equips, children, young people

Introduction

"Physical fitness is not only one of the most important keys to a healthy body; it is the basis of dynamic and creative intellectual activity". - John F. Kennedy

The World Health Organization (WHO) has defined health as 'a state of complete, physical, mental and social well-being and not merely the absence of disease or infirmity' (WHO, 1946). This state of optimal being, which encompasses all dimensions of life, is critical for the fulfillment of our potential as human beings and the realization of our full capacity as a nation. Health equips children and young people with the strength and vitality required to enjoy and navigate their way through the inevitable challenges of youth, whilst in the case of adults the absence of health can severely impede one's ability to contribute and earn a living as an active member of society. The loss of income which often accompanies poor health can be paralyzing for families and on a mass scale can have serious implications for the wider economy. In this light, it is clear to see why the WHO considers the 'highest attainable standard of health' to is 'one of the fundamental rights of every human being' (WHO, 1946).

The benefits of regular sport and physical activity for physical health have been well documented. For example, an NHS guide, published in 2012, stated that 'The evidence that physical activity prevents major chronic disease is indisputable' (Jones *et al.*, 2012). In particular sport and physical activity can play a major role in lowering the risk of cardiovascular disease, certain cancers, type 2 diabetes and obesity.
The British Association of Sport and Exercise Sciences utilised a panel of experts to produce a literature review and subsequent guidance on the relationship between physical activity and health in 2010 (O'Donovan *et al.*,

2010). The panel concluded from the cohort studies reviewed that, after adjusting for confounding variables, inactivity results in a two-fold increase in the risk of cardiovascular disease, type 2 diabetes and overweight and obesity. The cohort studies also showed strong evidence that physical activity has a causal relationship with a reduction in the risk of post-menopausal breast cancer, and moderate evidence that this is the case for colon cancer and prostate cancer.

This supports earlier findings from a study which explored the evidence from over 150 pieces of observational and randomised research on the health benefits of physical activity. The authors found that existing research showed irrefutable evidence that regular physical activity is effective in the primary and secondary prevention of premature death and the prevention of chronic diseases including cardiovascular disease, diabetes, cancer, hypertension, obesity and osteoporosis. Their summary stated that 'there appears to be a graded linear relation between the volume of physical activity and health status, such that the most physically active people are at the lowest risk. However, the greatest improvements in health status are seen when people who are least fit become physically active' (Warburton *et al.*, 2006).

In a prospective cohort study with 416,175 Taiwanese people between 1996 and 2008 (average follow up of 8.05 years), participants self-reported their amount of weekly exercise, which the researchers categorised into one of five levels of exercise intensity: inactive, low, medium, high or very high activity. These groups were then compared for their risk of mortality and life expectancy. The low level activity group was characterised by an average of 15 minutes physical activity a day and had a 14% lower risk of all-cause mortality and a three year longer life expectancy than those in the inactive group. Wen et al (2011) found that every additional 15 minutes of physical activity beyond the initial 15 minutes resulted in a further 4% reduction in all-cause mortality and a 1% reduction in cancer mortality. These findings remained true when accounting for age, gender and risk of cardiovascular disease. This research suggests that some exercise is better for our health than none.

The table below, which uses statistics from the Chief Medical Officers' report, shows the dramatic effects which being active have on all-cause mortality and on some of the major diseases.

The Health Benefits of Sport and Physical Activity

Although research interest on physical activity and health dates back to the 1950s, the breakthrough in the scientific evidence on health benefits of physical activity largely took place during the 1980s and 1990s. There is an overwhelming amount of scientific evidence on the positive effects of sport and physical activity as part of a healthy lifestyle. The positive, direct effects of engaging in regular physical activity are particularly apparent in the prevention of several chronic diseases, including: cardiovascular disease, diabetes, cancer, hypertension, obesity, depression and osteoporosis.

The Report from the United Nations Inter-Agency Task Force on Sport for Development and Peace states that young people can benefit from physical activity as it contributes to developing healthy bones, efficient heart and lung function as well as improved motor skills and

cognitive function. Physical activity can help to prevent hip fractures among women and reduce the effects of osteoporosis. Remaining physically active can enhance functional capacity among older people, and can help to maintain quality of life and independence.

Physical activity and psychosocial health

The WHO has estimated that "one in four patients visiting a health service has at least one mental, neurological or behavioural disorder, but most of these disorders are neither diagnosed nor treated". A number of studies have shown that exercise may play a therapeutic role in addressing a number of psychological disorders. Studies also show that exercise has a positive influence on depression. Physical self-worth and physical self-perception, including body image, has been linked to improved self-esteem. The evidence relating to health benefits of physical activity predominantly focuses on intra-personal factors such as physiological, cognitive and affective benefits, however, that does not exclude the social and inter-personal benefits of sport and physical activity which can also produce positive health effects in individuals and communities.

Sport and Physical Activity as part of a Healthy Lifestyle: A number of factors influence the way in which sport and physical activity impacts on health in different populations. Sport and physical activity in itself may not directly lead to benefits but, in combination with other factors, can promote healthy lifestyles. There is evidence to suggest that changes in the environment can have a significant impact on opportunities for participation and in addition, the conditions under which the activity is taking place can heavily impact on health outcomes. Elements that may be determinants on health include nutrition, intensity and type of physical activity, appropriate footwear and clothing, climate, injury, stress levels and sleep patterns.

Sport and physical activity can make a substantial contribution to the well-being of people in developing countries. Exercise, physical activity and sport have long been used in the treatment and rehabilitation of communicable and non-communicable diseases. Physical activity for individuals is a strong means for the prevention of diseases and for nations is a cost-effective method to improve public health across populations.

What is Sport and Development?

'Sport & Development' refers to the use of sport as a tool for development and peace. Actors in sport, academia, private sector, non-profit and non-governmental organizations, government agencies, UN agencies and international organizations, the media, the general public as well as young people are increasingly interested in the potential of sport as a tool to reach personal, community, national and international development objectives. They are also interested in how sport can be used as a tool for addressing some of the challenges that arise from humanitarian crises and in conflict and post-conflict settings. As sport becomes increasingly part of humanitarian and development work, as well as a part of the corporate social responsibility practices of some private sector actors, interested parties are anxious to explore the potential, as well as the limitations, of sport in their work.

For these very different actors to understand each other better, it becomes necessary to develop common definitions and frameworks for action in order to improve practice.

History of Sport and Development

Sport is not a new element in development cooperation. It has been used in an ad hoc way to reach development-related objectives as far back as the 1920s.

For example, within the United Nations, humanitarian aid workers have tapped the potential of sport as a means to improve the conditions of victims of conflict and natural disasters for many years. The UN International Labour Organization (ILO) and the International Olympic Committee signed an agreement to collaborate as far back as 1922. However, sport was largely underestimated as a major tool in humanitarian programmes and was rarely used in a systematic way. More recently, there has been a fundamental shift. Today, more and more national and international development organizations are using sport to add to their approaches in local, regional and global development and peace promotion programmes. This is done in close cooperation with sports organizations most of the time. Despite recent progress, the systematic use of sport and physical education for development is still in its early stages as many remain unconvinced of the impact sport can have on reaching development and humanitarian objectives.

Sport, Education and Child and Youth Development

Physical activity is vital to the holistic development of young people, fostering their physical, social and emotional health. The benefits of sport reach beyond the impact on physical well-being and the value of the educational benefits of sport should not be under-estimated

Sport and Peace-building

The role of sport in peace-building is one of the most hotly-debated areas in Sport & Development. Find out more on the main areas of contention, including: definitions of 'peace' and the role of sport in (re)building relationships; sport & peace-building at the grassroots and nation-state level; and the use of sport for the reintegration of child soldiers. The purpose of the section on Sport & Peace-building is to provide an overview of the main topics and concerns in this area. At no point should this section be considered to be exhaustive in its coverage of all areas and information relating to Sport & Peace-building, but that it rather seeks to provide a gateway for interested readers to access further sources of information.

Sport & Disability

This section provides a summary of current thinking on the adaptation of physical activity, sport and recreation opportunities to ensure participation of individuals with a disability from development contexts. Today, the idea of people with a disability being able to participate in sport and physical activity is not so uncommon. In many countries, opportunities exist from the grassroots to elite levels for people with a disability to showcase their abilities in sport and physical activity. But this is not the case in all parts of the world. Whilst there has been progressive and positive change in quality of life for people with disabilities in many developed countries, often this progress is not reflected in developing countries.

Sport and Economic Development

This topic includes a number of diverse issues relating to sport's role in economic development in developing countries. Four main areas that present the limitations and the potential of sport to contribute to economic development are discussed in dedicated sub-sections:

- Underdevelopment of sport and 'muscle drain' in developing countries
- Exploitation and child protection in sport
- Developing local markets through sport by means of hosting local sports events, producing low-cost and affordable sporting goods and through athletes' remittances

Building skills for employment through sport

This topic also includes a selected number of project profiles, which provide illustrative examples of using sport to encourage economic development. Each sub-section includes further recommended reading with links to online documents and further sources of information.

Child protection and safeguarding in sport

Every day millions of people participate in sport; such as coaches, athletes, volunteers, referees and organisers. For the majority, this is a positive experience that develops social networks, confidence, skills and knowledge. For others the experience is negative. Child safeguarding in sport has been given too little attention by many clubs, organisations, funding bodies and governments for a considerable amount of time. The most common reactions being that it does not happen, is someone else's responsibility or is an isolated incident. These three attitudes are often classified as:

- denial
- blame
- minimization

These typical responses leave children, coaches, clubs, sports bodies, funding bodies and governments isolated, vulnerable and, in the long term, severely affected. Safeguarding children has both a preventive and reactive component; ensuring effective policies, practices and procedures are in place to limit harm occurring, as well as having measures in place to report, investigate and deal with suspicions and incidents. This section is designed to provide more information on child safeguarding and - by linking with our Toolkit section - the necessary tools to develop and implement a culture that includes practices, procedures and policies. These practices, procedures and policies are to ensure that all who participate in sport remain safe, have fun and learn.

Practical Implications of Sport-for-Health Programming

The optimal combination of type, frequency and intensity of physical activity for different populations in not known, yet there is a clear consensus that regular physical activity of at least 30 minutes of moderate intensity is recommended for a healthy lifestyle. It is also important to select activities with cultural relevance for individuals. In at-risk populations, careful consideration needs to be given to the prescription of physical activity to ensure that the conditions to promote positive health benefits are optimized. Physical fitness, physiological factors (heart and respiratory rates, blood sugar), diet and nutrition, hydration and the type and intensity of activity are factors that impact on the provision of physical activity and sport, particularly for people at risk of chronic non-communicable

diseases. For example, walking, light cycling and swimming and other low-impact activities are often selected for people with cardiovascular disease, obesity and diabetes. There are a number of considerations for sport and physical activity programming that targets HIV/AIDS prevention across various settings:

Sport and Public Health Campaigns

In 2002, the World Health Organization deemed 'Physical Activity' the theme of World Health Day. Since that time, April 6th is celebrated as the World Day for Physical Activity. This is an excellent example of a global initiative aimed at promoting health through physical activity across populations. To reduce the burden of disease world-wide, the World Health Organization introduced a global strategy in 2004. The Global Strategy on Diet, Physical Activity and Health is a large-scale initiative aimed at promoting health enhancing physical activity and supporting policy development and research.

Conclusion

Collaborative efforts between organizations focusing on sport or health are necessary in ensuring that sport-for-health initiatives are more likely to achieve success. For example, UNICEF has used sport to raise awareness on immunization and organized sports events for vaccination campaigns in Zambia against measles. Renowned sports stars in various sports promoted the health campaign through which approximately 5 million children were vaccinated in 2003. This section showcases individual sports and the role these sports can play in reaching development objectives. Find out about the role of specific sports in contributing to development and peace by browsing this section.

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Effect of Aluminium salts on blood glucose and serum calcium levels in chick

Mrs Chamarthy Manjulata, Lecturer in Zoology (P G), V.S.M College, Ramachandrapuram,

Abstract

The study of toxic metals is part of nutrition and toxicology, areas not emphasized in medical schools. For this reason, this important cause of disease is given little attention in conventional mainstream medicine. Today mankind is exposed to the highest levels metals particularly Aluminium and its salts in different form due to its huge domestic use. Levels are up to several thousand times higher than in primitive man. The aims of this paper is to present the effects of sub lethal doses of Aluminium salts on avian model, chick and to compare effect on biochemical parameters with special reference to blood glucose and serum calcium which are the compounds of fundamental metabolic importance.

Key words: Aluminium, *Gallus*, blood glucose and blood calcium.

Introduction

Aluminium derivatives in practice are antacids, astringents, buffered aspirin, food additives, antiperspirants, cosmetics, anti- aging creams, concealers, deodorants, facial powder, foot moisturizer, foot odor control, hand cream, lip treatment, shampoo, sunscreen SPF 15 and above, air fresheners, frozen meal and appetizers. Aluminium is most widely used in the making of utensils in countries like India and other developing nations.

Birds are most likely to be exposed to Al through their diets. Some food organisms such as invertebrates, fish, tadpoles and a few species of plants may have sufficient concentrations of Al to be toxic. Little is known about the bioavailability of Al through natural diets. The metal birds with P & decreases its availability. Signs are consisted with rickets and include lack of appetite, reduced growth, bone deformities, impaired eggshell formation, decreased egg laying and early feather molt (Capdeville & Scanes, 1995a). The purpose of this study is to assess the toxicity of Aluminium chloride, Aluminium sulphate and Aluminium hydroxide individually and their effect on chick metabolism in terms of altered carbohydrate metabolism and calcium ion regulation.

Materials and methods

The experiment was conducted in the Department of Zoology, V.S.M. College Ramachandrapuram, India male chick (White leghorn strain, "Broiler"), ***Gallus gallus*** of one month old with body weight 127±21.4 grams were considered for experimental use. The chicks are maintained at a temperature of 28±2°C, exposed to daylight for 10 to 12 hours with humidity 70%in iron cage (36"×24"×24") and in highly hygienic condition with due permission from the Animal Experiment Control and Monitoring Authority, Govt. of India. The experiment was conducted according to the animal ethics committee guidelines vide CPCSEA. Growing animals were fed with a

poultry starter mash (ingredients-cereal, soybean meal, wheat, grain, corn, pulses) manufactured by Hindustan lever Ltd., and tap water was always made available *ad libitum*. The chicks were kept for 10 days in laboratory condition before commencement of experiment.

After well acclimatization to lab conditions, adult chicks were grouped in to four different groups of 5 animals bearing weight 127±21.4 grams. Then biochemical studies for estimation of blood glucose and serum calcium levels were carried out.

Animals were exposed to sub lethal ¼ of the LD50 dose doses of Aluminium chloride, Aluminium sulphate and Aluminium hydroxide selected as i.e. 2 mg /gm, 1.2 mg/gm and 3 mg/gm body weight orally in morning hours for 30 days .Control and three experimental groups are maintained separately. The blood samples were collected from the pectoral vein from 31st day. True enzymatic glucose was estimated according to the method of Trinder (1969), Bergmayer (1974) and Young *et al.* (1975) enzymatically. Sera were separated by centrifugation and analyzed for calcium following the methods of Fiske and Subbarow (1925) respectively.

Results and disscussion

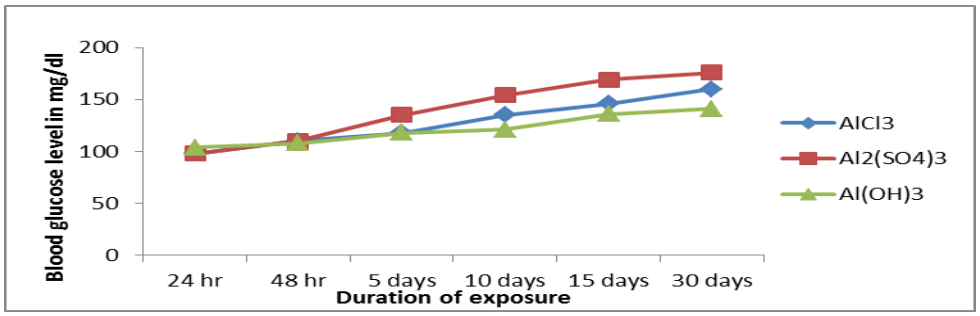
The accumulation of metals in the aquatic environment has direct effect on man and aquatic ecosystem. While the metals were required for metabolic activities in organisms lies in the narrow range between their essentiality and toxicity (Fatoki*et al.,* 2002). Growth is a sensitive and reliable endpoint in chronic toxicological investigations (De Boeck*et al.,* 1997).

Exposure to Aluminium sulphate caused a steady increase in blood glucose level from 7.84percent to 63.63 percent with increase in duration of exposure. It was found that the increase in blood glucose level is maximum for Aluminium chloride followed by Aluminium sulphate and Aluminium hydroxide. The above analysis reveals that glucose level was significantly affected during sub lethal stress of the three Aluminium salts. The blood glucose levels for sub lethal toxicity of $AlCl_3$, $Al_2(SO_4)_3$ and $Al_2(SO_4)_3$ for chick were estimated after 24 hrs, 48 hrs, 5 days, 10 days, 15 days and 30 days of exposure (Table 1 and Figure 1).

Table 1 Result of Blood Glucose levels in mg/dl after sublethal exposure to Aluminium chloride, Aluminium sulphate and Aluminium hydroxide.

Toxicants Exposed	Initial	24hr	48hr	5days	10days	15days	30days
$AlCl_3$	100	110	118	145	148	166	180
$Al_2(SO4)_3$	100	104	110	135	154	169	176
$Al(OH)_3$	100	104	108	118	121	136	141

Figure 1 Result of Blood Glucose levels in mg/dl after sublethal exposure to Aluminium chloride, Aluminium sulphate and Aluminium hydroxide.



The calcium levels of the blood serum for chicks for sub lethal toxicity of $AlCl_3$, $Al_2(SO_4)_3$ and $Al(OH)_3$ were estimated after 24 hrs, 48 hrs, 5 days, 10 days, 15 days and 30 days of exposure. The values were compared to control serum levels of chick. The calcium levels of the blood serum for chick were found increasing from 9.2± 0.28m mol/l and reached 9.8 m mol/l for $AlCl_3$, 10.1 m mol/l in $Al_2(SO4)_3$ and 9.7 m mol/l in $Al(OH)_3$ after 30 days of exposure (Table 2 and Figure 2).

Conclusion

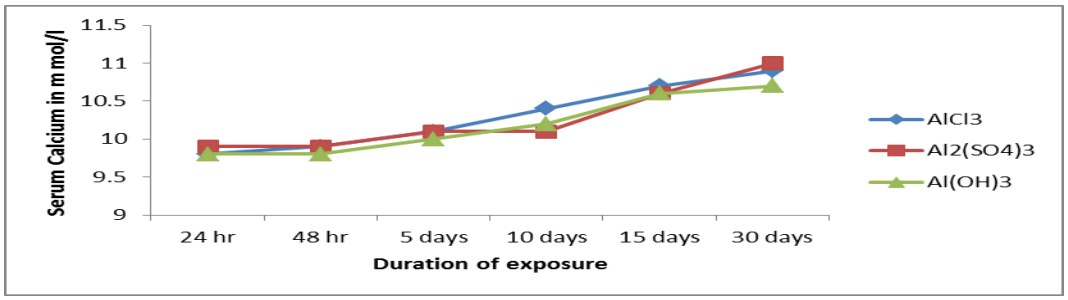
The study of toxic metals is part of nutrition and toxicology, areas not emphasized in medical schools. For this reason, this important cause of disease is given little attention in conventional mainstream medicine. Today mankind is exposed to the highest levels metals particularly Aluminium and its salts in different form due to its huge domestic use. Levels are up to several thousand times higher than in primitive man.

The aims of this paper is to present the effects of sub lethal doses of Aluminium salts on avian model, chick and to compare effect on biochemical parameters with special reference to blood glucose and serum calcium which are the compounds of fundamental metabolic importance. ***Gallus gallus*** of one-month-old with body weight of 127± 21.4 grams were selected as experimental animal avian model. The chicks are maintained in the

Table 2 Chickresult of serum calcium levels in m mol/l after sub lethal exposure to Aluminium chloride, Aluminium sulphate and Aluminium hydroxide.

Toxicants Exposed	Initial	24hr	48hr	5days	10days	15days	30days
$AlCl_3$	9.2	9.2	9.3	9.5	9.6	9.7	9.8
$Al_2(SO4)_3$	9.2	9.4	9.5	9.7	9.8	9.8	10.1
$Al(OH)_3$	9.2	9.2	9.3	9.5	9.5	9.6	9.7

Figure2.Result of Blood Glucose levels in mg/dl after sublethal exposure to Aluminium chloride, Aluminium sulphate and Aluminium hydroxide.



departmental animal house facilities at a temperature of 28±2°C, exposed to daylight for 10 to 12 hours with humidity 70% in iron cage (36"×24"×24") and

Acclimatized chicks were grouped in to four different groups, one control and three treated and each group comprising 5 animals. LD 50 for Aluminium salts are referred from literature. Animals were exposed to sub lethal ¼ of the LD50 dose doses of Aluminium chloride, Aluminium sulphate and Aluminium hydroxide selected as i.e. 2 mg /gm, 1.2 mg/gm and 3 mg/gm body weight for biochemical analysis to study effect of selected Aluminium salts in blood glucose and serum calcium level. Exposure to Aluminium salts caused increase in blood glucose level and serum calcium levels from the beginning up to the end of exposure.

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The Role of Exercise in Stress Management

G.Srinivasa Reddy, Lecturer in Physical Education, SMBTAV&SN Degree College, Veeravasaram
B.Bapi Reddy, Lecturer in Physical Education, SVKP &DR KS Raju A&S College, Penugonda

Abstract: The term "stress" refers to positive stress that is associated with improved performance and productivity. Exercise can be an effective component of a stress management program, and all types of exercise can be beneficial for stress management. Exercise programs consistent with the current recommendations to improve health can be prescribed to manage stress. Fitness professionals should recognize that it might be necessary to refer a client to a psychologist or other health care provider to help develop strategies for managing stressors that produce chronic and acute episodic stress.

Key words: stress management, anxiety symptoms, Epinephrine

Introduction

"Stress" is a commonly used term, and it is often used with different meanings. The standard definition for stress that will be used in this article is the disruption of the body's homeostasis or a state of disharmony in response to a real or perceived threat or challenge. The threatening or challenging situation is referred to as a "stressor." When a person encounters a stressor, the body prepares to respond to the challenge or threat. The autonomic nervous and endocrine systems respond by producing the hormones epinephrine, nor epinephrine, and cortical. The result of this hormone production is a cascade of physiological reactions that make up the stress response. Epinephrine and nor epinephrine are involved in the initial changes that take place to prepare the body to react and to prepare for a challenge. These responses include increases in heart and respiration rates, blood pressure, perspiration, and energy production. There also is a suppression of immune function, production of β-endorphin (the body's natural pain killer), and increased acuity of the senses. These changes make up the fight-or-flight response, which prepares the body to cope with the stressor. If the stressor is perceived as negative or more as a threat than as a challenge, cortical production is increased. Cortical is involved in energy production but also suppresses immune function.

It is important to note that not all stress is bad. Everyone experiences a certain amount of stress on an almost daily basis, and it cannot be completely eliminated. Stress becomes a problem when too much is experienced, and it has a negative impact on behaviors, relationships, and health. The term "stress" refers to positive stress that is associated with improved performance and productivity. "Distress" is negative stress that is associated with performance decrement and negative health consequences. The individual's perception of the stressor and coping resources determine whether a situation is stress or distress. College graduation is

a stressor for most. The student who has a job or who has been accepted to a graduate program likely perceives the stress of graduation as stress, whereas the student who has student loans and no immediate plans of a job or further education perceives distress.

Just as stress can increase the risk for chronic diseases and other health problems, dealing with chronic conditions and poor health can increase the amount of stress one experiences. Stress also influences behaviors that affect health. Diet choices, sleep habits, and drug use are behaviors that are often negatively affected by stress. The APA's 2011 survey showed that 39% percent of respondents reported overeating or eating unhealthy food because of stress, and 29% reported skipping a meal. In addition, 44% reported lying awake at night because of stress. On a positive note, 47% of respondents reported walking or exercise as a way of managing stress.

Exercise and Stress

Exercise and stress research has typically focused on aerobic exercise. There have been consistent findings that people report feeling calmer after a 20- to 30-minute bout of aerobic exercise and the calming effect can last for several hours after exercise. Recently, there has been an increased amount of research on the role of mind-body types of exercise such as yoga or *Tai Chi*. Unfortunately; there is somewhat limited research on the role of resistance exercise in stress management.

The exact physiological mechanisms to explain how exercise improves stress have not been delineated. Human and animal research indicates that being physically active improves the way the body handles stress because of changes in the hormone responses, and that exercise affects neurotransmitters in the brain such as dopamine and serotonin that affect mood and behaviors. In addition to the possible physiological mechanisms, there also is the possibility that exercise serves as a time-out or break from one's stressors. A study that tested the time-out hypothesis used a protocol that had participants exercise but did not allow a break from stress during the exercise session. Participants were college-aged women who reported that studying was their biggest stressor. Self-report of stress and anxiety symptoms was assessed with a standard questionnaire before and after four conditions over 4 days. The conditions were quiet rest, study, exercise, and studying while exercising. These conditions were counterbalanced across participants, and each condition was 40 minutes in duration. The "exercise only" condition had the greatest calming effect. When participants were not given a break from their stressor in the "studying while exercising" condition, exercise did not have the same calming effect.

Summaries from recent reviews on yoga or *Tai Chi* clinical trial interventions indicate that these mind-body types of exercise can be effective in reducing stress. The authors of these reviews suggest that the results should be viewed with caution because study quality was varied. However, it should be noted that reductions in stress reported in one review were similar to or greater than reductions from other types of commonly used stress management techniques.

In addition to understanding how exercise can help manage stress and the

types of exercise to recommend for stress management, it is important to understand common barriers that might affect exercise participation in high-stress clients. Lack of time is the most commonly reported exercise barrier for individuals in general. A lack of motivation, fatigue, poor sleep habits, and poor dietary habits are factors associated with stress that can negatively impact exercise compliance and adherence. Common exercise barriers and stress-related health problems should be taken into consideration when developing an exercise prescription for high-stress individuals.

How much exercise is needed to manage stress?

Fortunately, the recommendations for exercise in the role of stress management fit with the current health recommendations. The proposed physiological adaptations thought to improve the way the body handles stress and recovers from stress can occur with a regular moderate to vigorous aerobic exercise program, such as the recommendations of 150 minutes of moderate-intensity aerobic exercise per week or 75 minutes of vigorous-intensity aerobic exercise per week. If an individual is using exercise as a time-out from stressors, shorter duration activity can serve the purpose, especially when lack of time or fatigue is a concern. Consider an individual who reports significant work-related stress. Breaking the exercise into two 10- to 15-minute sessions, one before work and one at lunch time when possible, can help combat stress throughout the day. Although there is not a lot of research with resistance exercise and stress management, resistance exercise can be used to provide a time-out from one's stressors. Because resistance training produces different exercise adaptations compared with aerobic exercise, it might not affect the way the body physiologically reacts to stress as aerobic exercise does. However, the acute effect of a time-out to reduce stress can be beneficial. In addition, clients can receive the numerous health benefits associated with resistance training. The resistance exercise prescription for general health benefits of 2 to 3 days of exercise to target all of the major muscle groups performed at a moderate intensity of 8 to 12 repetitions can be recommended.

The studies included in the recent reviews of *Tai Chi* and yoga indicate that sessions between 60 and 90 minutes performed 2 to 3 days per week were effective in reducing stress and improving feelings of well-being. A study conducted in a worksite environment showed that 15 minutes of chair-based yoga postures was effective in reducing acute stress when assessed by self-report and with physiological measures (*e.g.,* respiration rate and heart rate variability parameters). This finding indicates that shorter duration sessions can be effective in reducing acute stress with this type of exercise.

Group exercise or encouraging stressed clients to find a workout partner is an excellent idea because it can provide a support network and accountability. However, there might be clients who find a group setting intimidating or competitive, which could be counterproductive in managing stress. In addition, those who report stress because of work or family obligations might enjoy the solitude of exercising alone. Using a variety of exercises or nontraditional exercises (*e.g.,* exergaming, dance classes, yard work, or rock climbing) is a way to plan activities that are enjoyable to maximize adherence. Knowing your

clients' exercise barriers and stressors will help with planning an exercise program that can address these variables to maximize the benefits for health and stress management.

Conclusion

Exercise can be an effective component of a stress management program for many individuals and should be recommended to help those who are dealing with acute, acute episodic or chronic stress. An advantage of incorporating exercise into a stress management program compared with other stress management techniques is the well-documented physical and psychological health benefits of exercise. However, it is important to remember that exercise is only one component of a stress management program, and there might be situations that require assistance beyond the expertise of a fitness professional, especially in working with individuals who are experiencing acute episodic or chronic stress. Although exercise might be effective in helping an individual feel calmer who is dealing with these types of stress, it will not solve the problem of major chronic or regular stressors. It may be necessary to refer these individuals to resources who can help them to address their stressors, such as a psychologist or other health care providers.

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Spirituality and Holistic Approach in Mental Health

Swapnajaidupally
Research scholar, Department of psychology, Osmania University

Abstract
Spirituality and religion are potentially divisive and controversial; we cannot avoid discussing about them. Certainly in mental health these topics are viewed with mistrust. However, in recent times strong evidence has been presented to suggest that incorporating spiritual care in treatment plans helps recovery, reduces relapses, and improves quality of life. Mental health counselors did lot of research and studied in this topic. Mental health patients have consistently identified spiritual needs as an important issue to them and several studies have found that spiritual care positively contributes to symptom relief and general well-being. Mental health professionals believe that real and lasting healing begins on the inside, within the person's heart, mind, body and soul and extends outward through positive change in thought and behavior. This paper explores spirituality as a neglected dimension in mental health treatment plans. Spirituality plays a vital role in mental health. It will also highlight the importance of spiritual assessment, and highlight the benefits of including spirituality and wellbeing of a person in treatment plans as part of holistic care for mental health patients.
Key words: spirituality, mental health, holistic approach.

Introduction:

While largely seen as a supportive mechanism, there are indications that spirituality and religion may, in some cases, pose challenges for patients who are already medically compromised.However, the general consensus on this topic seems to be that "by ignoring the spiritual dimension of health, for whatever reason, we may be depriving ourselves of the leverage we need to help empower individuals and populations to achieve improved physical, social, and mental health" (Vader 2006).

The Bio psychosocial-Spiritual Model of health takes a holistic approach rather than a medical approach to promoting health and addressing illness and pain. In this approach, spirituality and religion are important beyond the treatment of an individual with a specific, diagnosed medical condition.

1. Holistic health includes not only treating or curing specific symptoms, but also supports promoting the overall health and well-being of individuals, families and communities. Spirituality and religion have a role to play in this aspect of holistic health by supporting actions that enhance physical and mental health. For example, many traditions address caring for the body, avoiding behaviors that debase body and spirit, or support healthy diet choices. Holistic health and mental health approaches can also offer opportunities to promote spiritual well-being.
2. Holistic health recognizes that for some individuals and families, the experience of illness and pain may relate to spiritual concerns and that those concerns may manifest as physical or emotional symptoms

a doctor.

Mental health and wellness is the state at which one feels, thinks, and behaves. It varies from person to person. Mental health can be viewed on a continuum, starting with an individual who is mentally well and free of any impairment in his or her daily life, while someone else might have mild concerns and distress, and another might have a severe mental illness.

Mental health is just as vital as physical health. In reality, the two coexist and should not be treated separately. There are many mental health disorders that exacerbate physical concerns or disorders, and vice versa.

For instance, someone who suffers from chronic migraines might also suffer from an anxiety disorder. Obesity contributes to the severity of symptoms of depression. Poor anger management is associated with high blood pressure. Behind every medical illness, it is possible to find a mental health concern as well.
It is also possible that a boost to mental health can alleviate symptoms of a medical condition. As an example, those who receive art therapy or pet therapy in hospitals are shown to have a speedier recovery than those without, as well as a decrease in severity of symptoms experienced.

A holistic approach for individuals needs to be the standard. Physicians, nurses, dentists, psychiatrists, psychologists, mental health counselors, and other mental health professionals need to collaborate to provide a complete treatment plan.

Recent events have brought mental health awareness to the surface. We need to know what that means. This does not mean all catastrophic events are caused by those who are mentally ill and therefore we need better treatments. In fact, statistics show that those who are severely mentally ill are more likely to be victimized than to do harm.

It is easy to blame or stigmatize a certain group when events that cannot be understood occur and we grasp for any bit of reasoning we can. But it is neither accurate nor fair. This is the time that we educate ourselves and become properly informed, and develop compassion and understanding.

Holistically minded and licensed mental health professionals are trained within the same legal guidelines as other mental health professionals. Holistic training usually comes after graduation, however counseling and allied health programs are beginning to add holistic approaches to their education programs as are medical colleges and universities.

Men and women of all ages, with all kinds of issues and illnesses, as well as people from varied sociology-economic levels, educational and religious backgrounds find their way into holistic treatment. Folks who seek holistic mental health care do have several characteristics in common.

Holistic mental care seekers few common characteristics:

1. They are actively involved with their own health care
2. They seek a medicine free life-style because of allergies and chemical sensitivities or because their belief system leads them away from synthetic chemical interventions.
3. They have been recommended to a holistic mental health professional by a friend, or they are already involved in holistic medical care and extend that care to include mental health care.
4. They are seeking a connectedness, a feeling of belonging that can often be described as a journey toward emotional-spiritual awakening.

5. They want to work within a wellness model rather than a disease model. Because holistic mental health is still a new field, many people are unsure of how to seek treatment because they know very little about the options available to them. Below you'll find some holistic approaches defined and explained. Holistic healing is not intended to serve as a Band-Aid or a onetime fix. It is an ongoing journey of discovery in search of more answers and ultimately; living better, being healthier, and striving for wholeness.

Holistic healing is really a lifestyle approach. The holistic approach goes far beyond the Mind-Body connection of finding and maintaining wellness. Overall wellness AND "wholeness" is highly valued. All parts of a person's life (physical healing, mental health and wellness, emotional well-being, and spiritual beliefs and values) are considered. Taking a holistic approach involves seeking the tools that will help us attract our desires and find personal power."

Interactive Guided Imagery

A client - therapist facilitated interaction technique with similarities to hypnotherapy and meditation. Guided imagery is used for personal growth, resolution of emotional issues and other chronic life issues like eating disorders, cigarette smoking, alcohol and substance abuse, chronic illness and physical pain.

Vitamin Therapy and Nutritional Medicine: Prescribed by a holistic psychiatrist, an orthomolecualr psychiatrist, a holistic medical doctor, a homeopathic or naturopathic physician, a clinical nutritionist or an Oriental Medicine and Herbology professional. All health issues are caused by imbalances and dysfunction within the body. Since this fact is indisputable, mental health issues are can accurately be defined as symptoms of physical imbalances and not a disease state separate from other health issues.

Hypnotherapy

Hypnotherapy has been around for many years and is often used by professional hypnotherapists and licensed professional mental health care providers, medical doctors, dentists and others to reduce stress, end phobias and help with many other serious mental-emotional and physical symptoms like pain, weight loss, eating disorders and addictions.

Mindfulness

Mindfulness and mindfulness based stress reduction have become very popular in the United States, popularized by Jon Kabot-Zinn and others.

Mindfulness suggests living a now centered, conscious and aware life-style. Resting Meditation, Walking Meditation, Breathing Exercises and Breathing Meditation and Yoga are very much a part of a mindfulness life-style. There are many books on the subject, one of them written my me: Pathways to Wholeness (2010).

A List of other Respected Therapies
Therapies Some of the following therapies require extensive training and professional certification or a professional license. Others are linage healing arts passed from generation to generation over hundreds of years.
*Art Therapy
*Clinical Aromatherapy (prescription aro matherapy)
*Dance and Movement Therapy
*Equine Assisted Psychotherapy
*Music Therapy
*Christian Counseling and Pastoral Counseling
*Reflexology
*Reiki
*Sound Healing
*Tai Chi and Qi Gong
*Touch for Health and other kenesiologies
*Yoga and Yoga Therapy

Conclusion:

All holistic practitioners have case studies that prove that holistic methods are effective for their clients. Holistic mental health professionals sometimes refer to psychiatrists for medication management. We usually try holistic approaches before we refer, but there are times when safety is the most important issue and a medical intervention is necessary. Quality of life is very important. Public demand for natural treatments and established research centers like the Linus Pauling Institute in Oregon have stimulated the US National Institute of Health to fund holistic, integrative research in hospitals and centers all around the country. Specific studies on various nutrients, medical intuition, bio-energetic healing, prayer and forgiveness are taking place around the world with fantastic results.

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Holistic Nutrition-A Way of Life

*G.Vani[1], Dr. D. V. Nageswara Rao[2]
1. Department of Zoology, SRR & CVR GDC, Vijayawada.
2. Department of Economics, Government College,(A), Rajamahendravaram.

Abstract: Today we would have to eat much larger portions to get sufficient nutrients from our food. If changing to a healthier eating lifestyle is a major shift for you, make gradual changes. Developing new eating habits can feel overwhelming. By Cleaning out your kitchen pantry and refrigerator we can get rid of unhealthy foods. Reading of the label ingredients helps us to decide what to toss or give away. Eating in moderate portions protect our Health. Eat regular meals and start out the day with a nutritious breakfast

Keywords: holistic nutrition, Poor digestion, human body

Introduction

By definition the word "holistic" refers to the integration of body, mind and spirit. Holistic nutrition strives to bring balance to all of these aspects of the human being. The holistic view sees the human body as a whole unit with intricate systems that depend on one another to operate optimally and efficiently. At a fundamental level, holistic nutrition focuses on the biochemistry of the human body, and recognizes the importance of creating balance where imbalances exist. Food is the foundation of holistic nutrition. With an emphasis on quality ingredients, the holistic diet consists of organic, whole foods that are grown locally and enjoyed in-season. A key element of holistic eating is to incorporate foods that are nutrient-dense while avoiding foods that have been depleted of their nutrient content, such as processed foods or foods that have been degraded during growth and/or preparation. At the heart of holistic nutrition is the understanding that good digestion and good health go hand-in-hand. Poor digestion is the precursor to countless illnesses (both directly and indirectly) and as such can have a significant impact on body, mind and spirit. With this understanding comes the knowledge that the human body digests a varied diet much more efficiently than a diet that lacks variety. Holistic nutrition also recognizes that diversity among the population is as important as diversity in the diet. It takes into account a person's heritage and biochemical individuality to formulate the optimal diet.

Importance of holistic nutrition:

We are what we eat. Nutrition is important to every area of human life – it is our fuel. The foods we eat and our ability to digest them properly are at the foundation of our beings. In the absence of quality nourishment good health gives way to disease, brain function diminishes, and the ability to live spiritually weakens. Nutrition becomes paramount as we consider the toxic environment we live in today. We are now faced with a burden that humans have not confronted before. To help manage the daily burden it is imperative to eat foods that will provide clean sources of fuel without further bogging down the body. Whole, organic, seasonal foods offer a significant amount of nutrients not found in foods that have been processed or denatured. The body absorbs and utilizes vitamins, minerals, and essential fats from food sources much

better than from supplement sources; although supplementation is becoming increasingly more necessary for many who need added support due to toxic overload. Knowing what to eat and what not to eat is becoming more important each day, as we continue to live in a stressful, toxic world.

Guidelines for healthy eating:

Drinking adequate amounts of purified water - at least eight 8-ounce glasses daily. Even mild dehydration will interfere with the digestive process and aggravate several symptoms and diseases.

Choosing organic food as much as possible to avoid pesticides, herbicides, genetically modified (GMO) foods, and irradiated food. Fresh organically grown food has more nutrient value and tastes better, and organic meats and dairy don't contain hormones and antibiotics.

Selecting whole grains when buying foods such as bread, pasta, rice, tortillas, and cereal. Whole grains provide more nutrients and fiber. About 22 natural nutrients are processed out of grains in the making of refined flour products. 'Enriched' is a misnomer since only 6 or 8 synthetic nutrients are actually returned after processing.

We have to buy ***locally grown*** fresh fruits and vegetables. Sometimes it's better to eat freshly harvested local produce that isn't certified organic, rather than organic produce that was harvested before ripening and transported thousands of miles to the grocery store.

Essential fatty acids are necessary for good health. So We should eat Good Fats in moderate amounts but we should not avoid fat altogether. Using organic cold-pressed oil such as extra virgin olive oil for salads, organic canola or coconut oil for cooking Flax seed oil as a great addition to a breakfast smoothie will protect our Health.

Eating raw and minimally processed whole living food as much as possible is very good for health. Foods in their natural state contain more nutrients and active enzymes. We have to eat a variety of nutrient-rich healthy foods. There is no single food that provides the more than 40 different nutrients we need for good health. Experiment with different foods and recipes gives us good results.

Foods to be avoided:

Eliminate refined sugar, high fructose corn syrup, and artificial sweeteners such as aspartame (NutraSweet, Equal) and sucralose. All contribute *significantly* to serious

Salt: Limit sodium to less than 2,300 mg per day - equivalent to about one teaspoon of salt. Check food labels; you'll be amazed how much sodium is added to processed foods. Substitute regular table salt for something healthier, like sea salt or Himalayan salt.

Coffee and **sodas** - non-foods that have many destructive physiological consequences which cause several illnesses and chronic disease

Transfats (hydrogenated oils); **saturated fats** - primarily from animal sources such as red meat, and whole milk dairy products.

Don't microwave food or beverages. Use a toaster oven, double boiler, tea kettle, or other appliance to heat or cook food.

Food additives: artificial colors and flavors, preservatives, MSG

Genetically modified (GMO) foods: Unfortunately, it's not required that the consumer be notified about the presence of GMO foods. Most canola and soy is GMO, so *never buy non-organic canola oil or non-organic soy products* like soy milk, tofu, or soy protein powder.

Other Considerations of Holistic Nutrition

Natural plant-based **digestive enzymes** can be used to enhance our digestion. Enzymes will also reduce the formation of certain digestive by-products that can lead to intestinal toxicity and autointoxication. Our ability to produce enzymes decreases as we get older and cooking and processing destroys the enzymes that were originally part of the food.

Using a high quality daily multi-nutrient to *supplement* our healthy food choices. Modern agricultural and food distribution practices and compromised soil, air, and water quality have degraded the nutritional content of food. Today we would have to eat much larger portions to get sufficient nutrients from our food. If changing to a healthier eating lifestyle is a major shift for you, make gradual changes. Developing new eating habits can feel overwhelming. By Cleaning out your kitchen pantry and refrigerator we can get rid of unhealthy foods. Reading of the label ingredients helps us to decide what to toss or give away. Eating in moderate portions protect our Health. Eat regular meals and start out the day with a nutritious breakfast. A smoothie with almond milk, fruit, protein powder and fiber is delicious and will jump start your metabolism and provide a lasting energy boost.

Eating six smaller meals is better than 3 large meals. Living the principles of holistic nutrition will reward you with vibrant health, stamina, and a clear mind.

Conclusion:

Holistic nutrition will reward us with vibrant health, stamina and clear mind. Additionally, Holistic nutritionists believe that many chronic illnesses can be prevented or improved through diet, and promote the use of holistic nutrition can manage conditions such as: Diabetes, Obesity, Arthritis, Heart disease, High blood pressure, Cancer, Colitis, Gout, etc. Several countries in the World are facing severe Health problems like Obesity, Diabetes, Cardio-Vascular diseases. The only solution for all the above problems is Holistic nutrition. By creating awareness about importance of Holistic Nutrition among people we can achieve a healthy Nation.

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