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Strategies to enhance the quality of life and functional fitness in the Indian elderly women

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Abstract

Women have the right to the enjoyment of the highest attainable standard of physical and mental health. The Women have unique health issues. And some of the health issues that affect both men and women can affect women differently. The enjoyment of this right is vital to their life and well-being and their ability to participate in all areas of public and private life. Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Women's health involves their emotional, social and physical well-being and is determined by the social, political and economic context of their lives, as well as by biology. However, health and well-being elude the majority of women. A major barrier for women to the achievement of the highest attainable standard of health is inequality, both between men and women and among women in different geographical regions, social classes and indigenous and ethnic groups. In national and international forums, women have emphasized that to attain optimal health throughout the life cycle, equality, including the sharing of family responsibilities; development and peace are necessary conditions. Health policies and programmes often perpetuate gender stereotypes and fail to consider socio-economic disparities and other differences among women and may not fully take account of the lack of autonomy of women regarding their health. Women's health is also affected by gender bias in the health system and by the provision of inadequate and inappropriate medical services to women. Hence, there is the need and requirement of planning the strategies in order to enhance the quality of life as well as the functional fitness of the elderly women.

Keywords: Quality of life, functional fitness, life span, elderly women

Introduction

“Strong women became strong because of the pain she has faced and won”

The women are considering as the backbone of the society, the pivot of the society revolves around her. The life cycle of the women is consists of many physiological and psychological attributes which contributes in maintaining her quality of life and health. The perception towards her health, her body and her mental status defines the happiness, positive approach, satisfaction and longevity of her life. The determinants of functional fitness and quality of life includes life rating phenomenon that affects health related and non health related criterions of life's situations. The average life span of Indian women is considered up to 62 years. In her complete life process her body and mind undergoes many turn oil. These ups and downs during the life disturbs her normal homeostasis and results in functional dysfunction, disorders, discomforts and hence detrains one's perception towards her body and mind. The elderly women in India face many physical, psychological and physiological alterations in her later stages of life. They experience menopausal discomforts, reduction in bone mineral density that results in joints pains, arthritis, lowering of bone strength, gynaecological issues, cardiac disorders, stress, depression, diminished self esteem, hypertension etc.

Thus, in the male dominating country like India women shouldn't be left unconsidered especially during their later stages of life, where they need special care and attention both mentally and physically. And for that there is the immense need and requirement of proper plans and strategies' for the betterment of their health and enhancement of their quality of life and health status.

Function Fitness & Quality Of Life

Health and quality of life (QOL) are inter-linked. WHO has defined health as a” dynamic state of physical, psychological, social and spiritual well-being and not just an absence of

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infirmity". This is a new holistic perspective, but unfortunately, such an approach has not been applied pragmatically. Though the basic definition of quality of life is undisputed, the key dimensions and domains still elude many working in the field. It is considered as the subjective component of individual's well being. As per WHO "The condition of life resulting from the combination of the effects of the complete range of factors such as those determining health, happiness, education, social and intellectual attainments, freedom of action, justice and freedom of expression". It defines their mental approach toward each and every person as well as professional concerns in life. The better quality of life is in great demand.

Family has traditionally been the primary source of support for the elderly in India. It is a matter of concern that even with a strong preference to live with children or relatives, not to mention high levels of economic dependency, about one in ten elderly women live alone. The data also show that a large majority of them are from illiterate and poor classes and hence their vulnerabilities multiply. The elderly depend primarily on their families for economic and material support (Gokhale *et al.*, 2003)^[2]

The various indicators of physical and mental well-being show a significant level of poor health among the elderly, with a high proportion of oldest old, poor, illiterate and widows in this category. The analysis on self-rated health shows about 55 per cent of the elderly rating their health as poor or fair on a five point scale. Thus the self-rated health appears to be lower in comparison with that of the elderly population in developed countries. Self-rated health also has a close connection with mental and physical health of the elderly (Yi *et al.*, 2002)^[1]

There is no question that physiological function decreases with age. The aging process and the lack of adequate physical activity change the indicators of functional fitness. The lack of physical activity to a great extent is the cause of the changes in functional abilities during the aging process. The cardio-respiratory system is susceptible to changes and indicates a significant decrease in the aerobic capacity after the age of 40, so that by the age of 65 it is approximately 30% less. This is related to the decrease in the indicators of maximum heart frequency, heart rate and arteriovenous difference. If elderly individuals do not take part in physical exercise, they expose themselves to risk of having their muscle mass and joint motion reduced, while the loss of muscle strength is related to the decrease in muscle mass. The daily needs for energy expenditure diminish during the aging process, which leads to a lower basal metabolism. Physical exercise which relies on movement and motion is taken to be the precondition for the normal functioning of the elderly, while the optimum functioning of an individual is connected to the level of the fitness indicators.

Advancing age is generally accompanied by a progressive decline in physical activity. Age-related decline has been documented for functional fitness; including muscular strength, flexibility, balance, agility, gait velocity, and cardio respiratory fitness. For years, performance decline in these areas was thought to be a normal and necessary consequence of aging. Previous studies, however, indicate that decline relates more to lifelong physical activity levels than to age. Physically active older women, for instance, were found to have performance patterns of flexibility, balance, and agility more similar to younger participants than to their older inactive pairs.

Aging is associated with physiological declines, notably a decrease in BMD and lean body mass (LBM), with a concurrent increase in body fat and central adiposity (Kim *et al.*, 2012)^[4]. It is possible that the onset of menopause may augment the decline in physiological decline associated with aging and inactivity. Wang and colleagues compared almost 400 early postmenopausal women and found higher levels of total body fat, as well as abdominal and android fat in postmenopausal women. Consequently, the authors could not conclude that the changes in body fat were related to menopause or merely a result of aging alone. The authors did note, however, that changes in fat-free mass (FFM), including bone mass, may be attributed to menopause-related mechanisms, including deficiencies in growth hormones and estrogen. (Had similar findings when comparing body composition variables between pre- and post-menopausal women. The authors demonstrated an increase in percentage of body fat ($30.8\% \pm 7.1\%$ vs. $34.4\% \pm 7.0\%$), trunk fat mass (6.6 ± 3.9 kg vs. 8.5 ± 3.4 kg), and trunk-leg fat ratio (0.9 ± 0.4 vs. 1.3 ± 0.5) with aging. Concurrently, they found that lean mass (right arm, trunk, bilateral legs, and total body (34.5 ± 4.3 kg vs. 32.5 ± 4.0 kg)) also declined with age. Baker and colleagues found that females had a greater decline in BMD with age compared to males (Baker *et al.*, 2013)^[7]. More so, a higher incidence of metabolic syndrome (an accumulation of cardiovascular disease risk factors including obesity, low-density lipoprotein cholesterol (LDL-C), high blood pressure, and high fasting glucose) has been shown in middle-aged women during the postmenopausal period. This is due in part to the drastic changes in body composition, as previously discussed, but also a change in PA levels. In a longitudinal study of over 77,000 (34–59 years) women spanning 24 years, van Dam *et al.* (Van Dam *et al.*, 2008)^[8] found high body mass index (BMI, 25+) and lower levels of PA (<30 min/day of moderate to vigorous intensity activity) to be attributed with a higher risk of CV disease, cancer, and all-cause mortality. Furthermore, (Sisson *et al.* 2009)^[9] found higher levels of sedentary behavior (<4 h/day) associated with a 54% increase in risk for metabolic syndrome only in those women not meeting national guidelines.

Sarcopenia is an age related decrease in the cross-sectional area of skeletal muscle fibers that consequently leads to a decline in physical function, gait speed, balance, coordination, decreased bone density, and quality of life. Additionally, due to lower levels of vigorous activity, aging populations experience notably higher losses in type II fibers than type I fibers, which can reduce strength, speed, power, and overall PA. Subsequently, maintenance of muscle mass and strength is imperative to maintain a high quality level of physical functioning, and attenuate measures of frailty. Muscular adaptations to exercise (increase in muscle size, cross-sectional area, and consequent strength) may counteract muscle loss and physical decline associated with sarcopenia (Hughes *et al.*, 2001)^[10].

Thus it appears that PA plays a pivotal role in the attenuation of physical decline and can potentially improve physical functioning and quality of life with age. Furthermore, maintenance of adequate levels of PA can result in increased longevity, and a reduced risk for metabolic disease along with other chronic diseases. A list of physiological changes associated with different modes of activity and their potential health outcome are listed below (Di Pietro *et al.*, 2001)^[13].

Recommendations

While current American College of Sports Medicine (ACSM) guidelines recommend light- to moderate-intensity activities to optimize health, moderate- to high-intensity exercise may be necessary to elicit positive CV adaptations and reduce the risk for CV disease. Older adults should aim to get at least 30 min of moderate activity, or 20 min of more vigorous activity (≥ 6 METS or 60%–90% HRR), 3 days a week. It is recommended that programs include low-impact, large muscle, rhythmic forms of exercise, including swimming, walking, biking, and dancing. More so, women may benefit from participating in group-based fitness classes, such as step aerobics and dance classes. Social support and group cohesiveness received from group fitness classes may help to increase self-efficacy, leading to long term adherence as well as greater enjoyment and satisfaction from the exercise program. The addition of stretching exercises (light- to moderate-intensity, hold for 30 s each muscle group, 3–4 repetitions) to these programs can serve to increase flexibility and range of motion.

ACSM recommends that older adults perform RT at least 2 non-consecutive days per week, including 8–10 exercises involving all the major muscle groups at moderate intensity (selecting a weight that allows 10–15 repetitions of each exercise), with 2–3 min of rest between each set. Additionally, those who are much deconditioned could start RT with a “very light” to “light” intensity (40%–50% 1-RM) to improve strength, power, and balance. It is advised that women unfamiliar with RT consult a fitness professional prior

to beginning a program. It is suggested that one must use

Table 1: Recommendations for exercise based on current research.

Activity type	Frequency	Duration	Intensity	Examples
Aerobic	2–3 days/week	>30 min	Moderate intensity (50%–60% HR _{max} ; RPE 5–6)	Walking, jogging, swimming, and dancing
Resistance	2–3 days/week	8–10 exercises; 1–3 sets each	Moderate intensity; 10–15 reps, where the last 1–2 reps are difficult to perform (RPE 5–6 for moderate, 7–8 for vigorous)	Calisthenics (body weight exercises: pushups, squats, etc.), resistance band exercises, circuit training, free-weight or machine weight exercise, large, multi-joint exercises
Flexibility	>2 days/week	10 min; 8–10 stretches	Light–moderate intensity; hold each stretch for 10–30 s, 3–4 reps each set. Stretch to the point of slight discomfort	Sit-and-reach, shoulder stretch

Abbreviations: HR = heart rate; RPE = ratings of perceived exertion, on a scale of 0–10 for level of physical exertion; rep = repetition.

These recommendations are general. The frequency, intensity, type, and duration of exercise one is able to achieve and maintain will vary from person to person. Thus we suggest that an individualized approach be utilized. While some activity is better than none, individuals aiming to improve CV health, muscular strength and endurance, and functional mobility should strive to meet the minimum recommendations we have provided (Nakamura *et al.*, 2007)^[16].

A Determinants of Healthy, Active Ageing Approach:

There is now clear evidence that health care and biology are just two of the factors influencing health. The social, political, cultural, and physical conditions under which people live and grow older are equally important influences. Active ageing depends on a variety of “determinants” that surround individuals, families and nations. These factors directly or indirectly affect well-being, the onset and progression of disease and how people cope with illness and disability. The determinants of active ageing are interconnected in many ways and the interplay between them is important. For example, women who are poor (economic determinant) are more likely to be exposed to inadequate housing (physical

progressive overload to stimulate muscular adaptations to resistance exercise. Typical recommendations for progression of resistance training are to first increase repetitions, followed by an increase in weight (0.5 kg for upper body, 1 kg for lower body) per week. For optimal results from a resistance program, the focus should be on full-body; compound movements (bench press, squat, pull-ups, etc.). Furthermore, adherence to group-based RT programs tends to be higher among older women than home based programs. Additionally, Elsangedy and Colleagues recently found that women who self-selected resistance exercise intensity fell below current ACSM guidelines. Consequently, the participation in a supervised or group-based resistance exercise program may improve women's adherence and health benefits stemming from a higher intensity attained. Finally, the authors propose circuit training, which incorporates both resistance training and aerobics, as an attractive alternative for weight training. One of the major benefits to circuit training is that it can illicit the same positive physiological responses as traditional resistance training, thus providing a time-efficient alternative to improve muscular strength and functional fitness.

The ACSM recommendations for flexibility are to aim for greater than 2–3 days per week, ultimately aiming for daily training. Static stretching should be held 10–30 s at a point of mild discomfort, although stretches lasting 30–60 s may provide additional benefits. Two to four repetitions per exercise are recommended, aiming for at least 60 s of stretching for each major muscle-tendon unit.

determinant), societal violence (social determinant) and to not eat nutritious foods (behavioral determinant).

Older women will be major beneficiaries of efforts to control and eliminate infectious diseases in settings where communicable diseases are common. In order to be comprehensive, health systems should provide a continuum of gender- responsive care from promotion and prevention to acute and palliative care, as well as access to essential medications.

In many settings, ageing women do not have the same access to health care as do men or younger women. For example, in many countries, older women are less likely than men to receive cataract surgery and men may gain quicker access to medical services and a life-saving procedure following a heart attack (44, 45, 46).? These inequities may be a result of direct or indirect gender- and age-based discrimination, older women's lower financial status and limited access to health security schemes, and a focus on reproductive health that excludes older women. From a global perspective, the use of medications is a double-edged sword. In most countries, older women with low incomes and no access to benefits covering the costs of medications either go without or spend a large

part of their meager incomes on drugs. In contrast, medications are sometimes over-prescribed to older women who have insurance or the means to pay for medications. Older women may be more likely than men to experience adverse drug reactions because of smaller body size, altered body metabolism and diminished ability to compensate for drug-induced changes in normal homeostasis. The barriers to primary health care faced by older people are often worse for older women such as a lack of transportation, low literacy levels and a lack of money to pay for services and medications. Invariably, gender and age interact with socioeconomic status, race and ethnicity. For example, older women who are homeless or do not speak the dominant language may have even less access to health care and be more likely to encounter discrimination in treatment.

Implications for Policy, Practice and Research

- **Health Professionals:** Professionals need to understand and recognize sex and age differences, especially when prescribing medications, treating mental health problems such as depression, and dealing with health problems related to domestic abuse. A gender perspective means going beyond physical symptoms to explore the socio-cultural as well as the biological factors underlying these problems. Medications. The goal is to ensure equity in the provision of essential and high-quality drugs among all age groups and between women and men. At the same time, physicians and pharmacists need to take into account the risks of over-prescribing based upon gender stereotyping, and of the adverse effects of multiple drug use among older women.
- **Health-care Reform:** Cost-cutting measures must not expect to transfer formal care to the unremunerated care provided by ageing women without providing compensation for lost wages and community support services. Priority setting in health services should be based on evidence that is free from systematic gender- and age- biases.
- **Health Security:** The goal is to provide equal access to essential health services and medications, regardless of ability to pay. Because older women have fewer financial resources to pay for services and private insurance premiums, taxes and social insurance schemes that are not based on time spent in formal employment provide the most equitable basis for health financing. Health insurance schemes should ensure that vulnerable and marginalized groups, including older women are adequately covered.

The Way Forward

The studies clearly highlight that income insecurity, illiteracy, age related morbidity, and physical and economic dependency are factors that tend to make the Indian elderly, and particularly elderly women, vulnerable. The approach needs to be holistic and multidimensional; at the individual, family, and community, governmental and non-governmental levels. First and foremost, opportunities need to be provided for improving socio-economic status and access to health care. Also important is extending social pension and health insurance, especially to women. At the family level, stronger intergenerational bonding needs to be encouraged and at community level, greater participation of elderly has to be ensured by active involvement in decentralized bodies. Effective implementation of national policy and programmes for older persons in line with the international instruments is

imperative and government should ensure availability of physical, financial and human resources to do so. Further, government needs to enable civil society groups and engage the private sector in creating an elder friendly environment. Data and research gaps in understanding issues of the elderly within the cultural context need to be undertaken on a regular basis and appropriate monitoring systems have to be put in place (Kleinman, 1978)^[17].

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