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Late Annasaheb P.S. Wadile  
Arts College, Thalner  
Tal. Shirpur, Dist. Dhule

# Impact of Buyback of Shares on Share Prices with Special Reference to NIIT Ltd.

**Nitin Prakash Jain**  
(Research Scholar)  
M. Com., SET, NET, CS  
Assistant Professor, Dept. of Commerce  
SNJBs. KKHA Arts, SMGL Com. & SPHJ  
Sci. College, Chandwad. Dist. Nasik.  
Affiliated to S.P.P. University Pune

**Dr. Dilip Rambhau Jagtap**  
(Research Guide)  
M.A., M.Phil. (Eco.) Ph. D.  
Associate Prof. Head Dept. of Economics  
& Banking GTP Arts, Commerce & Science  
College, Nandurbar.  
Affiliated to KBCNM University Jalgaon.


## Abstract:

Buy Back of shares is a new phenomenon in India. Buy Back of shares means company repurchase their own shares. In simply words Buy Back means reissue of shares. The research paper focused on impact of Buy Back of shares on share prices. Buyback of shares is a part of corporate restructuring and emerging strategy for the Business. Buyback program the company distributes the excess cash flow among the shareholder by way of repurchasing its own shares, generally at premium. India shares buy back were introduced in 1999 has receive and attention of all major companies. Since then there has been a spate of announcement of share buy backs. Small investors in India also need to know whether they will benefit by will participating in the Buy -Back offer or they will be better off in the post buy back phase companies acquire their Own shares to improve earnings per share by reducing the number of shares.

**Keywords:** Buyback of Share, Blue-chip, prior and posterior share prices

## Introduction

Stock buybacks refer to the repurchasing of shares of stock by the company that issued them. A buyback occurs when the issuing company pays shareholders the market value per share and re-absorbs that portion of its ownership that was previously distributed among public and private investors. With stock buybacks, or share buybacks, the company can purchase the stock on the open market or from its shareholders directly. In recent decades, share buybacks have overtaken dividends as a preferred way to return cash to shareholders. Though smaller companies may choose to exercise buybacks, blue-chip companies are much more likely to do so because of the cost involved. Since companies raise equity capital through the sale of common and preferred shares, it may seem counter-intuitive that a business might

  
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Arts College, Thalner  
Tal. Shirpur, Dist. Dhule

choose to give that money back. However, there are numerous reasons why it may be beneficial to a company to repurchase its shares, including ownership consolidation, Undervaluation and boosting its key financial ratios.

#### Objectives of the Study:

1. To study the Impact of Buy Back of shares on Share prices
2. To study the performance of selected company (NIIT Ltd) post and pre announcement of Buy Back of shares

#### Hypotheses of the Study:

- H<sub>0</sub>- There is no significant difference between share prices of pre and post announcement of Buy Back
- H<sub>1</sub>- There is significant difference between share prices of pre and post announcement of Buy Back

#### Scope of the Study:


Buy Back of shares means company buy share back from its shareholder or a resort a shareholder can take in order to sell the share back to the company. Buy- Back of shares is nothing but reverse of issue of shares by a company. It means the purchase of its own shares or other specified securities by a company. In case of Buy Back, a company offers to take back its shares owned by the investors at a specified price generally determined or arrived at on the basis of the average price of the shares in the past few months. This calculation is usually done at a premium on the market price so as to attract more number of investors, which may vary as per the financial prudence of the company. Thus, Buy Back is one of the prominent modes of capital restructuring.

#### Research Methodology of the Study:

The study is based on critical evaluation and analysis of basically secondary Data. The data consist of one month prior and posterior share prices of selected company i.e. NIIT Ltd. A study is undertaken in the sampled company to see its impact for which a data of share prices is analysed which will help to understand views, thinking and attitude which would help to give the researchers useful recommendations, if any. The data is analysed with the help of statistical tools like tabulations, grouping, percentages, averages, testing of hypothesis etc.

#### Review of literature

**Buy Back Of Shares In India: Impact On Stock Price Returns:** by Karamjit Kaur in EPRA International Journal of Economic and Business Review, Vol - 4, Issue- 7, July 2016, e-ISSN : 2347 - 9671, p- ISSN : 2349 - 0187: The research paper main objective to analysis the impact of Buy Back of shares on stock price returns. For this objective, the research paper based on two event window periods i.e. 61 days and 181 days. The research paper analyzed

  
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Arts College, Thalner  
Tal. Shirpur, Dist. Dhule

the average abnormal returns and cumulative average abnormal returns with the help of T Statistics. These returns based on Market Model for analyzed the impact of Buy Back of Share on stock returns. The average and cumulative average abnormal returns are positive on announcement date of Buy Back in 61 days of event window. The Average abnormal returns are significant at 5 percent, while cumulative average abnormal returns are insignificant on event day of 61 days event window. The study investigated the post and pre performance of companies with the help of Paired Sample T Test. The study also found Average abnormal return and cumulative average abnormal returns are positive on event day of 181 days event window period, both are statistically insignificant at 5 percent level. It concluded that the average abnormal returns are negative in post period as compared to pre announcement of Buy Back of Shares. It observed that the buyback of shares has negative impact on stock price returns after announcement, but it is statistically insignificant at 5 percent. The result of Paired Sample T Test, the cumulative average abnormal returns are statistically significant at 5 percent level. The average abnormal returns are not statistically significant at 5 percent. Hence, it is concluded that there is negative average abnormal returns as compared post announcement of Buy Back in 61 and 181 days of event window period.

**Impact of Buyback Announcement on Share Price: A Company and Industry Wise Analysis** by S. Kumar Pradhan in Int. J. Manag. Bus. Res., 6 (1), 13-21, Winter 2016: The study attempts to find out the impact of buyback announcement on share price. Paired sample T-test is employed to compare share price before and after the buyback announcement. The analysis of variance is also used to find out whether there is any significant difference among industries in the price change due to buyback announcement. The study is carried out from 1st January 2005 to 31st December 2012. The estimation window period is taken as 10 days before and after announcement of buyback. Market adjusted model is used to calculate the abnormal return during the window period. The study concludes that the buyback announcement do not have impact on share price in industry wise analysis but have partial impact on share price in subject to company wise analysis. The abnormal returns and cumulative abnormal returns of the most of companies are positive in both long run and short run. Buyback is a process through which the company purchases its own outstanding shares in order to reduce the number of shares in the market. A company buyback its own shares due to various reasons such as lack of investment opportunity, poor future earnings prospects and excess cash etc. When a company announces any kind event it may have impact on share price. One such significant event is buyback announcement which has bearing on the share price movement of the firm. This announcement is also influence the investors investment decision whether they to continue to hold the share or switch over to another company after the announcement. So this study is carried out to measure the impact of buyback announcement on shareholders wealth which would help the investors for making reinvestment decision.

### Limitations of the study

1. The study is based on limited company data.
2. Further variables could be added for the purposes of detail study.

### Testing of Hypothesis

H<sub>0</sub>: There is no significant difference between share prices of pre and post announcement of Buy Back

H<sub>1</sub>: There is significant difference between share prices of pre and post announcement of Buy Back

	Pre Announcement of Buy Back Period	Post Announcement of Buy Back Period
Mean	91.58	94.55
Variance	4.68	48.77
Observations	21	33
Pooled Variance	31.81	
Hypothesized Mean Difference	0	
df	52.00	
t Stat	-1.8887	
P(T<=t) one-tail	0.0323	
t Critical one-tail	1.6747	

\*\*\*Here level of significance is 0.05


Thus, our null hypothesis There is no significant difference between share prices of pre and post announcement of Buy Back is rejected. Alternatively we accept our alternative hypothesis There is significant difference between share prices of pre and post announcement of Buy Back

### Findings

1. The most vital factor about Share prices found that, there is equivalence in both time period at initial stage later on the price seem increasing
2. The one more important issue is come out from this analysis is that; the investors are still not recognising the whether the buy back will fruitful or not as far as share prices are concerned.

### Conclusion

From the above analysis, we can conclude that, there is moderate impact of Buy Back of shares on share prices of company

  
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Amravati-444602 (MS)  
Mobile: 08275068780  
E-Mail: ceon@pgd@gmail.com  
tanujaraatl3@gmail.com

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Arts College, Thalner  
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## ROLE OF EXERCISE IN IMPROVING HEALTH BEHAVIOUR

T. R. Sharma

Department of Physical Education, Late Annasaheb P. S. Wadile Arts College, Thalner,  
Taluka Shirpur, District Dhule  
tejashsharma267@gmail.com

### ABSTRACT

The changing face of life in terms of health, diseases prevention, morbidity and mortality is the most significant happening in the 21<sup>st</sup> century. The diseases of modern life or non-infectious conditions commonly known as chronic disorders are the leading causes of mortality and morbidity. These Chronic disorders for e.g. Coronary Heart Diseases, Essential Hyper Tension, Diabetes Mellitus, Asthma and backache are also called life style disorders as their prevalence has multiplied because of sedentary, inactive, stressful lifestyle of people. These chronic health problems place a big burden of diseases and disability on health care systems. Large scale prevalence of coronary Artery Diseases and Hypertension among North Indians attributing it to their sedentary inactive life style and intake of high fat food. The present paper plans to review effectiveness of Exercise and Physical Activity in Health Enhancement and Diseases Prevention.

**Keywords:** Health, Chronic disorders, Physical activity.

### Introduction

The changing face of life in terms of health, diseases prevention, morbidity and mortality is the most significant happening in the 21<sup>st</sup> century. The diseases of modern life or non-infectious conditions commonly known as chronic disorders are the leading causes of mortality and morbidity. These Chronic disorders for e.g. Coronary Heart Diseases, Essential Hyper Tension, Diabetes Mellitus, Asthma and backache are also called life style disorders as their prevalence has multiplied because of sedentary, inactive, stressful lifestyle of people. These chronic health problems place a big burden of diseases and disability on health care systems.

Mohan (2003) found large scale prevalence of coronary Artery Diseases and Hypertension among North Indians attributing it to their sedentary inactive life style and intake of high fat food.

Navdeep et al (2003) made an attempt to determine the prevalence rate of overweight, obesity, and hypertension among school going children of Amritsar (Punjab). The Anthropometric measurements like height, weight and blood pressure of 387 children aged 6-11 years were taken. The assessment of obesity was done Body Mass Index Percentiles. On the basis of Body Mass Index about 9.88% and 2.75 % of the boys and 6.71 % and 1.49 %

of the girls were overweight and obese respectively. The frequencies of significant and severe type of hypertension were also observed in 10.67 % and 14.92 % in case of boys and 9.88 % and 5.97 % among girls respectively. This study suggests that a considerable percentage of Punjabi children are overweight, obese and hypertensive. It is desirable therefore to review alternative low cost preventive and curative strategies to reduce incidence of these diseases. The present paper plans to review effectiveness of Exercise and Physical Activity in Health Enhancement and Diseases Prevention. The aim is to reveal health benefits of exercise and physical activity: a viable effective strategy of diseases prevention and health promotion.

Going by the guidelines for leisure time physical activity, majority, of population is considered sedentary or insufficiently active. As physical inactivity is number one casual factor in chronic / life style disorders, one must understand What is physical inactivity? (Krista et al, 2003). The interest in Physical Activity as a means of promoting health goes back to ancient times.

In Ancient China and Greece gymnastic activity was considered a means of treating diseases, Indoliya and Indoliya (2003) said that Aristotle the great philosopher of all the times observed that body is the temple of soul and for the harmony of the body, mind and spirit, the

body must be physically fit. The above statement of this Greek philosopher is more appropriate for the present day modern man than the primitive. Physical education is a part of total education and no education can be completed without physical education. The children of the present day are the future citizens of our nation. Physical fitness is a fundamental human need like food clothes and shelter. It is not an isolated phenomenon. It is an integral part of the life style. Physical fitness provides an individual greater physical strength which would rather help him to cope up with his daily problems. If this trend of inactivity continues for existence of healthy / fit individuals will disappear. This is purely because of modern life style. The scientific community and general public acknowledge that increases in exercise and Physical Activity can produce worthwhile health benefits.

Pate et al. (1995) and Krista et al. (2003) reported that even 30 – 40 minutes of walking or moderate physical activity on most days i.e. four times a week promotes higher level of physical fitness and reduced risk for several chronic diseases. Physical Activity has been characterised as any bodily movement resulting in energy expenditure above resting levels (Mohan, 1991; 2000a; 2001; Freedson and Miller, 2000).

Aerobic exercise is sustained exercise that stimulates and strengthens the heart and lungs improving the body's utilisation of oxygen. Among the forms of exercise that meet these criteria are jogging, bicycling, jumping rope, running and swimming (Taylor, 1999).

American College of Sports Medicine (1998) advocates that healthy adults should engage in 20 to 60 minutes of aerobic activity 3 – 5 days per week to improve cardio-respiratory fitness.

Physical inactivity is linked to increased mortality and morbidity (Wei et al. 1999; Farrell et al. 1998; Mohan 2003).

#### **Exercise, Physical Activity and Physical Health**

Research in the last few years has proved beyond doubt the health benefits of aerobic exercises.

Physical Activity and Exercise has been linked to increase in cardiovascular fitness (Wannamethee et al 2000; Hamberg et al., 2000, Nami et al 2000) and reduced heart attacks (Taylor, 1999); lowering of blood pressure, demonstrating hypertensive effects of physical exercise; increased efficiency of cardio respiratory system (Hamberg et al, 2000, Mohan, 1996a, and b, 1997; 2000b; Mohan, 2003).

Regular exercise reduces morbidity associated with Chronic Obstructive Pulmonary diseases (Bourjeily and Rochester, 2000; Mohan and Kaur, 2002) successful weight loss (Peri et al. 2001).

Moderate Physical Activity has also been found to be beneficial in preventing and reducing symptoms of osteoarthritis (Cheng et al. 2000).

These are growing evidence for a protective effect of Physical Activity in reducing risk for developing cancer especially colon and breast cancer (Friedenreich et al, 1998).

Exercise has been shown to lower blood glucose level in diabetes (Peirce, 1999) especially Type 2 diabetes. Participation in physical activity has been found to play a role in promoting emotional well being and mood improvement (depression).

A link has been established between increased aerobic exercise and reduction in low back pain (Travell and Simons, 1983). Other benefits of exercise include increased improvement or maintenance of muscle tone and strength, increase in soft tissue and joint flexibility, reduction in poor health habits like cigarette smoking and alcohol consumption.

Anuradha et al, (2003) reported great reduction of fat in females following 6 weeks of different exercise programmes. The effects of exercise translate directly into increased life expectancy and physical fitness.

One may safely conclude that there is accumulated evidence about health enhancing effects of Physical Activity and Exercise.



### Exercise, Physical Activity and Mental Health

As with physical health, the past few years have witnessed accumulation of a series of reports confirming the beneficial effects of exercise on mental health.

Plante and Rodin (1990) have shown five biological mechanisms underlying the connection between Physical Activity and Mental Health (Table A).

**Table A: Physical Activity and Mental Health – biological mechanisms (based on Plante and Rodin, 1990).**

1	Increases in body temperature due to exercise result in short-term tranquillizing effects.
2	Regular exercise facilitates stress adaptation because the increase in adrenal activity increases steroid reserves which can then be available to counter stress
3	Reduction in resting muscle activity potential after exercises helps release tension.
4	Exercise enhances neurotransmission of nor adrenaline (non epinephrine), serotonin and dopamine leading to improved mood.
5	Exercise leads to the release of endogenous morphine like chemicals synthesised in the pituitary gland leading to enhanced feelings of well being.

The American National Institute of Mental health produced consensus statements (Morgan and Goldston, 1987). There is a general agreement that:

- Exercise is associated with reduced State Anxiety
- Exercise has been associated with decreased level of mild to moderate depression
- Long term exercise is usually associated with reduction in traits like Neuroticism and Anxiety.
- Exercise reduces stress symptoms.
- Exercise has beneficial effects across all ages and in both the genders.

### Exercise and Perception of Well Being, Happiness and Self esteem

According to Marks et al (2000) physically active people see themselves more positively than those who are inactive. Carter (1997)

reported a positive correlation between happiness and exercise involvement. Snyder and Kivlin (1975) and Rao and Overman, (1986) found that athletes were found to be significantly higher on Psychological Well Being than non-athletes. Changes in self esteem occur as a consequence of participation in exercise (Gruber, 1986).

### Exercise, Anxiety and Depression

Anxiety reduction following exercise has been widely reported (Berger and Owen, 1987; Raglin and Morgan, 1987). The research on exercise and depression has also generally shown positive results (Dishman, 1986).

Klein et al. (1985) reported that running reduced depression scores.

### Exercise and Reactivity to Stress

Recent evidence has suggested that an association exists between physical fitness and ability to cope with psychological stress (Brooke and Long, 1987). In a meta-analytic review (Crews and Landers, 1987) concluded that regardless of the type of physiological or psychological measures used, aerobically fit subjects had a reduced stress response.

Rejeski et al. (2003) reported that teaching older adults with chronic diseases to integrate Physical Activity in their lives via group mediated cognitive behavioural intervention leads to better long term outcomes than standardised exercise therapy.

Plante and Rodin (1990) explained eight psychological processes underlying the connection between participation in exercise and improvement in mood. Table B.

**Table B: Physical Activity and mental health – Psychological processes (based on Plante and Rodin, 1990).**

1	Improved physical fitness provides people with a sense of mastery, control and self-sufficiency.
2	Exercise is a form of meditation that triggers an altered and more relaxed state of consciousness.
3	Exercise is a form of biofeedback that teaches exercisers to regulate their own automatic arousal.
4	Exercise provides distraction, diversion, or time out from unpleasant cognitions, emotions and behaviour.

5	Since exercise results in the physical symptoms associated with anxiety and stress (e.g. sweating, hyperventilation, fatigue) without the subjective experience of emotional distress, repeated pairing of the symptoms in the absence of associated distress results in improved psychological functioning.
6	Social reinforcement among exercisers may lead to improved psychological states.
7	Exercise may act as a buffer, resulting in decreased strain caused by stressful life events.
8	Exercise competes with negative affects, such as anxiety and depression, in the somatic and cognitive systems.

In addition, the July / August, 2002 issue of Psychology Today reported evidence amassed by scientists that cognitive and physical exercise are a key to fighting Alzheimer's disease.

It was reported by Richard Snowdon Ph. D. Professor of neurology at University of Kentucky Medical Centre and author of Aging with grace, that evidence is growing that physical exercise is important in a variety of chronic diseases including brain diseases. Exercise boosts circulation including blood flows to the brain which uses a good 25 % of

oxygen that enters our lungs. It also bolsters brain nurturing chemicals and reduces stress which damages the brain. Yoga and meditation, the stress reduction / relaxation techniques have similar effects as exercise.

### Conclusion

It is desirable to review alternative low cost preventive and curative strategies to reduce incidence of diseases. The effectiveness of Exercise and Physical Activity in Health Enhancement and Diseases Prevention. The aim is to reveal health benefits of exercise and physical activity: a viable effective strategy of diseases prevention and health promotion. The scientific community and general public acknowledge that increases in exercise and Physical Activity can produce worthwhile health benefits. Other benefits of exercise include increased improvement or maintenance of muscle tone and strength, increase in soft tissue and joint flexibility, reduction in poor health habits like cigarette smoking and alcohol consumption.

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Late Annasaheb P.S. Wadile  
Arts College, Thalner  
Tal. Shirpur, Dist. Dhule



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## NEW VISION OF PHYSICAL EDUCATION AND SPORTS: A CREATIVE CONCEPT IN EDUCATION SYSTEM.

Dr. Tejas R Sharma\*

### ABSTRACT

*Sports is witnessing a spectacular boom in the media spotlight all over the world including India while it is being seriously neglected within the education system. Physical Education act as well as the provision of resources for the nation and in the construction of evaluation system in education developments and it prompts the development physical education in a country. Physical Education and Sports proved alarming, which given the social importance and media-coverage of sports. Its impact may be seen in the shift by Physical Education and Sports in public authorities towards high performance and high media friendly sports at a national level, across the public and private system. The standards for Physical Education and Sports, ensuing the fair access and absence of any discrimination based on gender, capacity / aptitude, culture, race, creed or social / ethnic group while ensuring the acquisition of values, knowledge and skills required to improve quality of life. The expansion of the various facets of sports and traditional games.*

*Keywords: Education system, Public authorities, Traditional games.*

### INTRODUCTION

Physical Education and Sports is one of the important yardsticks and also integral part of education for any country at any point of time. Thus each country should try to set out a framework of action plan for promotion and development of Physical Education and Sports Paradoxically. Sports is witnessing a spectacular boom in the media spotlight all over the world including India while it is being seriously neglected within the education system. Physical Education act as well as the provision of resources for the nation and in the construction of evaluation system in education developments and

it prompts the development physical education in a country. At present compare to earlier years and now we can come across the decline in physical education in education compare to present is one needs to overcome hurdles and battles to improve the structure and infrastructure status in around the development the overall discipline in Physical Education and Sports

### PRESENT STATUS OF PHYSICAL EDUCATION AND SPORTS IN NEW ERA:

Despite efforts by member state to promote and development Physical Education and Sports with international cooperation, its



distinctive nature and importance to education remains constant source of concern. Physical Education and Sports proved alarming (particularly within education system), which given the social importance and media-coverage of sports. Its impact may be seen in the shift by Physical Education and Sports in public authorities towards high performance and high media friendly sports (at a national level, across the public and private system). A significant example in the absence of clear separation between ministries if Youth Affairs and Sports Ministries of Education.

The status of Physical Education and Sports convened the Physical Education World Summit in Berlin this initiative was promoted by reports revealing the increasing critical situation of Physical Education and Sports in many countries. A world-wide comparative study collect data and literature for nearly 120 countries came out with following significant findings:-

- Reduced time devoted to Physical Education programme.
- Reduced budget plus inadequate financial, material and staff resources.
- The subjects suffers from low status.
- In many countries teachers are not properly trained.
- Existing Physical Education and Sports guidelines are not properly applied.

#### **CREATIVE MIND AND THOUGHTS WHICH BRING OUT THE ROLE OF PHYSICAL EDUCATION AND SPORTS IN THE PRESENT GLOBALISATION:**

Physical Education and Sports preserves the vital clue that exists between Physical Education and Sports. The reciprocal guarantee

highlighted the provision of as such it is necessary to consider Physical Education and Sports as an integral part of education in all schools and colleges in a country, where sports should be compulsory right from elementary school level to college level. In fact quality education involves the dispensing the essential requirement of life skills, i.e. Learning to -

- Act in an autonomous way, (self-motivation, creativity & problem solving),
- Use interactive tools (communication, physical and IT)
- Join and live within sociality diverse groups.


All this Board - based life skills are precisely what Physical Education and Sports can develop. Therefore, it goes without saying that Physical Education and Sports must be actively promoted by International Organisation, State Government and local Authorities. The field of education must coordinate and streamline this efforts defend the cause of Physical Education and Sports. This will include helping to redress the balance of Physical Education and Sports in Education in its drive to improve the situation of Physical Education and Sports worldwide.

#### **AIMS AND OBJECTIVES:**

The aim to educational requirements stipulated by education of all, notably to address the challenge of a quality education in which Physical Education and Sports play a significant role.

The objectives included are -

- To provide school syllabus and enhances the status of Physical Education and Sports, providing better basic and advanced training,
- To meet the standards for Physical Education and Sports, ensuing the fair access and

  
Principal  
Late Annasaheb P.S. Wadile  
Arts College, Thalner  
Tal. Shirpur, Dist. Dhule

absence of any discrimination based on gender, capacity / aptitude, culture, race, creed or social / ethnic group while ensuring the acquisition of values, knowledge and skills required to improve quality of life.

To expand the various facets of sports and traditional games.

### DELINES TO BE FOLLOWED:

To understand the knowledge and effects achieve above status of aims and objectives, following guidelines should be adopted –

the drive to expand Physical Education and sports in educational establishment to boost the priority of Physical Education and Sports, to improve learning process and standard of education and also to ensure a better quality educational programme.

standard rule for defining the threshold acceptability for the qualification of Physical Education and Sports curriculum.

creation of teachers training blue print, which will require help from Universities, research institutes and other academic and scientific establishments capable of contributing to the promotion of Physical Education and Sports in Education.

develop a communication policy – advocating the promotion of Physical Education and Sports in Educational system using available information channels.

venting projects that develop the scenario to improve the Physical Education and sports.


- To promote Physical Education and Sports as an integral part of – a policy to support a youth via sports.
- To mobilise youth via Physical Education and Sporting activities and to boost awareness of HIV / AIDS related problems.
- To help to promote ethical and the moral values (outlined in the international charter of Physical Education and Sports) related to information – education and training to combat doping in sports.
- To promote traditional games and sports and to publish World Encyclopaedia of traditional games and sports.

The overcome of Downing Street on the line of an ongoing independent survey lines system to monitor the progress achieved by the campaign to promote Physical Education and Sports.

Such a system should be able to monitor the status of Physical Education and Sports by pulling information and measurable results. It should also be properly equipped to act as a decision making tools and help promote Physical Education and Sports in Education system. This will involve to help them successfully address the challenges confronting Physical Education and Sports in the field of Education.

### CONCLUSIONS

It goes without saying that implementing a drive to promote Physical Education and Sports in Educational system requires resources where the government should take the appropriate decision in all the schools and colleges level.

  
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Arts College, Thalner  
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- One should know how important that the Physical Education and Sports plays vital role.
- Now UGC has come into existing to help the colleges for NACC accreditation and helping hand to hand to improve the infrastructure facilities in the colleges going for NACC accreditation for allotting the high level budget to improve the facilities in the Private Institutions and the Institutions of the management to overcome the burden of individual implementing the whole.
- Also the ministry of external affairs Government of Sports Ministry should look into the decision of sports personality awarding marks for the International, National, Zonal, and All India Inter University Level Medal Winners for encouraging and motivating the talent of the young achievers to get laurels for country.

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 Arts College, Thalner  
 Tal. Shirpur, Dist. Dhule

## FITNESS AND EXERCISE MANAGEMENT FOR SPORTS PERSON

**Dr. Tejas Ramdayal Sharma**

Director of Physical Education, Late Annasaheb P S Wadile Arts College, Thalner, Taluka  
Shirpur, District Dhule. (M.S.).

### Abstract

The changing face of life in terms of health, diseases prevention, morbidity and mortality is the most significant happening in the 21st century. The diseases of modern life or non-infectious conditions commonly known as chronic disorders are the leading causes of mortality and morbidity. These Chronic disorders for e.g. Coronary Heart Diseases, Essential Hyper Tension, Diabetes Mellitus, Asthma and backache are also called life style disorders as their prevalence has multiplied because of sedentary, inactive, stressful lifestyle of people. These chronic health problems place a big burden of diseases and disability on health care systems. The present paper plans to review effectiveness of Exercise and Physical Activity in Health Enhancement and Diseases Prevention. Many people begin exercise programs to improve their health or to lose weight, but few people continue these programs unless they find a form of exercise that they enjoy.

**Keywords:** Physical Activity, Aesthetic, Catharsis, Ascetic.

### Introduction:

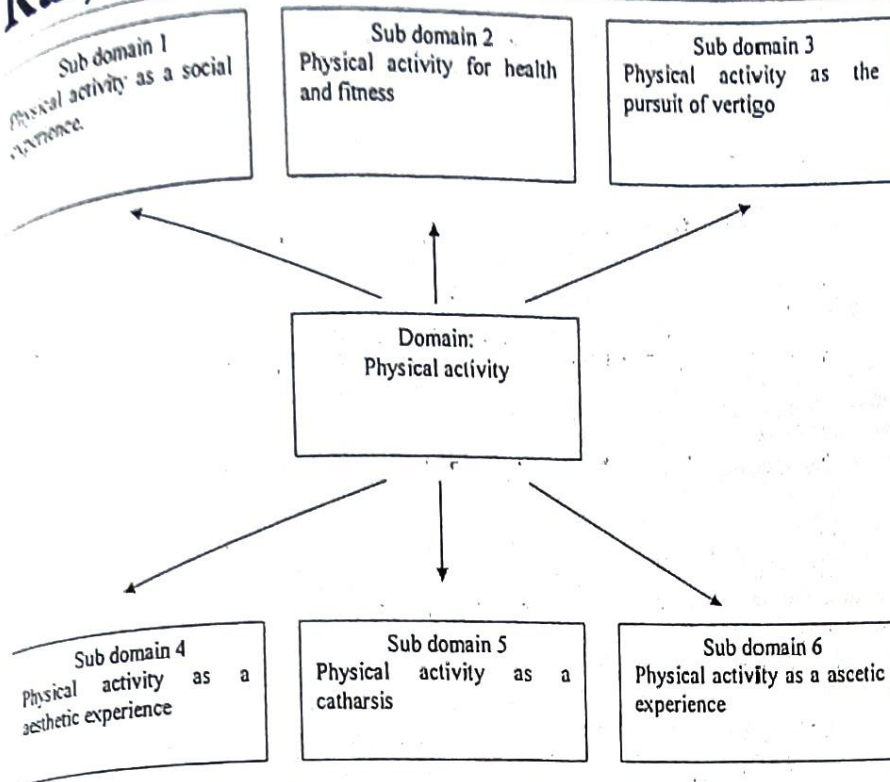
In spite of widely acclaimed benefits of exercise, there is the problem of adherence. Researchers have tried to identify reasons for not exercising and tried to examine it from the perspective of exercise beliefs and attitudes, self perception, perception of personal control and self – efficacy.

### Motives of Exercising:

These are some of the individual characteristics that might explain approach / avoidance tendency to exercise (Sonstroem, 1988).

The work of Gerald Kenyon (1968a) was among the earlier and more influential scholarly efforts to classify the reasons why people engage in physical activity. Kenyon developed a theoretical model that hypothesized six sub-domains to explain the value of physical activity. The sub-domains are summarized in Figure A.

Figure A  
Structure of model for the characterisation of physical activity



A brief description of each sub-domain is as follows:

- Physical activity as a social experience. It is believed that involvement in some forms of physical activity can meet some of the social needs of certain participations. Some physical activities provide a medium for meeting new people or perpetuating existing relationships.
- Physical activity for health and fitness. This sub domain relates to involvement in physical activity primarily for the development or enhancement of physical fitness.
- Physical activity as pursuit of vertigo. Kenyon modified the more traditional definition of the term vertigo to mean activities involving risk, danger, or a thrill derived from speed or acceleration. Activities in this category include skiing, mountain climbing and sky diving.
- Physical activity as an aesthetic experience. This sub domain pertains to physical activities that appeal to participants because of their characteristics of beauty, grace, symmetry, or other artistic qualities. Ballet synchronised swimming, gymnastics and aerobic dance are representatives of physical activity as an aesthetic experience.
- Physical activity as catharsis. This sub domain refers to participation in physical activity to release tension and pent-up emotions.
- Physical activity as an ascetic experience. The willingness or desire to endure long, strenuous and often painful training in pursuit of a particular goal characterizes physical activity as an ascetic experience. Training for a marathon is one such example.

## Exercise as a means to Improve Appearance

Exercise is one of the more frequently relied upon means of enhancing appearance. Weight loss and improved muscle tone are typically what people have in mind when they speak of 'shaping up'. Although physical appearance concerns both women and men, it is somewhat more important to women (Perri et al. 2001)

## Exercise for Enjoyment

Many people begin exercise programs to improve their health or to lose weight, but few people continue these programs unless they find a form of exercise that they enjoy. Rather than answering the 'stern call for cardiovascular duty', most people engage in physical activity over a longer period of time because they have found something that gives them a sense of fun or happiness (Marks et al, 2000).

Rudnicki and Wankel (1988) have successfully related the flow concept to fitness programming. In a recent study, they found self-challenge to be primary predictor of long term exercise involvement. They suggested fitness programs include challenging and interesting experiences within the participant's capabilities. When one achieves the level of competence necessary for a flow experience, enjoyment and satisfaction are likely to result.

## Social Support and Exercise Adherence

A recurring social factor related to adherence is the degree of social support that the non-involved spouse exhibits for the exercise behaviours of the involved spouse. Spousal social support is generally defined as the demonstration of a positive attitude toward an exercise program and the encouragement of the spouse's involvement in it. Spousal social support is evidenced by an expressed interest in program activities, a pronounced enthusiasm for the spouse's effort and progress, and a willingness to accommodate the spouse's exercise involvement within the family routine (Willis and Campbell, 1992).

Some of the earliest research that addressed this factor found that adherence patterns in males were influenced significantly by their wives' attitudes.

Although not extensively documented at present, peer influences on exercise behaviours are probably significant for many people. Friends, neighbours, and colleagues can all influence how people spend their discretionary time. Time shortage and job pressures are the other reasons for non-compliance to exercise adherence.

## Other Individual Characteristics.

A number of individual characteristics which influence whether a person is likely to exercise have been identified. People who come from families in which exercise is practised (Sallis et al, 1992), who have positive attitude towards physical activity, who perceive themselves as athletic or as the type of person who exercises (Marks et al, 2000), and who believe that people should take responsibility for their health are more likely to get involved in exercise programs initially than people who do not have these attitudes (Taylor, 1999).

Gender predicts who exercises. From an early age, boys get more exercise than girls (Sallis et al, 1992). Middle - aged and older women are especially unlikely to get exercise, in part because their lives do not afford opportunities for regular exercise for middle aged women are not prevalent (Taylor, 1999).

  
Principal

Late Annasaheb P.S. Wadile  
Arts College, Thalner  
Tal. Shirpur, Dist. Dhule



Psychological factors predict participation in exercise programs. Overweight people are less likely to participate in exercise programs than are those who are not overweight. It may be that exercise is easier for the overweight or that leaner people who had more active lifestyles before getting involved in exercise are better able to incorporate exercise into their activities (Perri et al. 2001). People who are high in self-efficacy with respect to exercise are more likely to practice it and more likely to perceive that they are benefiting from it than those people low in self-efficacy (Bandura, 1982). In one study of sedentary, middle-aged adults, those with high self-efficacy beliefs with respect to their exercise plan perceived themselves to expend less effort and reported more positive emotions during exercise than did those with low beliefs in self-efficacy. The positive emotions increased during exercise, in turn, predicted subsequent self-efficacy beliefs, suggesting that these affect may help maintain exercise in the future (McAnley, 1994).

### Exercise, Fitness and Personality.


A comparison of world class runners with a large group of less talented runners revealed only one way in which the groups differed significantly. The world class runners were more 'happy-go-lucky' (Neman & George, 1987). The world class runners were also somewhat more practical minded and less self-sufficient than other runners.

A cross-sectional study of over 4,000 men and women conducted at the Cooper Clinic in Dallas found that people who had high levels of physical fitness and who exercised tended to have fewer chronic complaints and low level of tension (Collingwood et al. 1983). This study used the Clinical Symptom Questionnaire, which includes the 16PF. The 16PF was used with the Self-Rating Depression Scale in non-experimental study of men and women who participated in a program of aerobic and anaerobic exercises. The study found that personality changes were associated with improved aerobic, but not anaerobic, fitness (Janoski et al. 1988). The researchers also found that the exercise program had more pronounced effect on the personalities of women. Most notably, the women showed significant changes in happiness, security and control concomitant with changes in aerobic fitness, while the men showed significant changes only in stability.

### Conclusion

The above review has amply demonstrated that Exercise and Physical Activity are extremely beneficial to health promotion and diseases prevention. Evidence was also reviewed to identify motives for exercising, theoretical models to explain exercise behaviour were appraised and individual differences in adherence to exercise were also examined. Association of psychosocial correlates of Physical Activity in children were also highlighted.

It may thus emphasize the role of this new emerging field 'Exercise Psychology' - which is a promising area / discipline in guiding public health education programs as well as school education programs. Of course, the results of many ongoing studies in this area are still at a preliminary stage and further research is needed to identify definite patterns / factors associated with improving adherence to exercise especially among children. This is so because a carry over of Physical Activity from childhood to adult hood is a likely possibility. There is great potential in furthering research in the area of exercise and health as significant impact of such research may jolt the public into exercising and reaping its rich benefits.

  
**Principal**  
Late Annasaheb P.S. Wadile  
Arts College, Thalner  
Tal. Shirpur, Dist. Dhule

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Late Annasaheb P.S. Wadile  
Arts College, Thalner  
Tal. Shirpur, Dist. Dhule

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## ROLE OF WOMEN'S IN ENVIRONMENTAL CONSERVATION

Dr. Girish Jomsu Gavil, Associate Professor; Department of Defense and Strategic Studies, Late Annasaheb P. S. Wadile Arts College, Thalner Tal. Shirpur Dist. Dhule

### Abstract -

Now a day almost all women whether in rural or in a urban area they have their various socio-economic groups, if encourage them to plant commercial trees in different occasion and make them understand that it will be benefited for them. Government can also increase the women participation into the protection and preservation of environment by providing some aid assistants. Women have a direct connection with her day to day activities to environment with their deep knowledge of it. These kinds of health problems cause women to feel more responsible regarding environmental issues. So they give her contribution in environmental protection. However, women in India are playing a crucial role in protection and conservation of environment. Women had launched numbers of movement in demanding of better protection of natural resources and environment conservation. Like in India, Amrita Devi had sacrificed their life for protection of the trees that was going to fell down by commercial logger in Uttarakhand. Other women like Vandana Shiva have also contributed in environment conservation and protection. They had organized women and people through the Navdanya movement of 1982.

**Key Word** - Woman's, non-conventional, conservation, environmentalist, Environmental movement

### Introduction

Environment is the nature and surrounding in which all plants, animals, humans and other living beings live and operate. It is the interrelationships of land, water and air among themselves and with all living and non-living. Our human society and environment or nature has an inseparable bonding. Society emerged as per the prevailing environment therefore the living styles, dressing, food culture, language and festivities occasion of people are distinct different accordingly various environment. Being the better half part of the society Women's role into the protection of environment found deep rooted. Women were playing an essential role in management of natural resources, including soil, water, forest and energy and also have past and present knowledge regarding the natural world or environment around them. In our society women are managing water, firewood for fuel, food and others item from the forest and Agricultural field in every family. In various studies significantly shows that Women were also an important contributors in the field of environment protection and preservation.

### Activities of woman's in environment Conservation

Women are affected differently than men by environmental degradation, deforestation, pollution and overpopulation. Women are often the most directly affected by environmental issues, so they become more concerned about environmental problems. Women have a direct connection with her day to day activities to environment with their deep knowledge of it. These kinds of health problems cause women to feel more responsible regarding environmental issues. These are few following activities which are carried out by women to conserve nature.

#### a) Developing Hobby of Gardening

An increasing number of women are taking over and expanding their involvement in agricultural tasks but this has not changed the gender division of labor with regard to reproductive work. Esther Boserup looked into the farming systems of men and women in Africa and found that "in many African tribes, nearly all the tasks connected with food production continue to be left to women". We all are familiar with the fact that these days' houses are very small and our women are coming forward by developing hobby of gardening. Women can at least keep the environment of their houses. Healthy Plants add to the beauty of the houses, provide freshness to the eyes and are helpful in keeping the nearby environment clean.

Tulsi plant is being worshipped since long time it has a great significance in various festivals and ceremonies. It is a good source of oxygen as well as this plant has medicinal values. Vegetables like Turai "Beans" do not need much space to grow. Besides keeping the surrounding atmosphere healthy, money is also saved due to its use. Saplings of plants can also be shared with neighbors. Again, our women can make use of their management ability by using empty cans, bottles, tins etc. as pots for growing the plants.

#### b) Use of Garbage Box

Usually, we do have a habit of throwing the rubbish and the waste after cutting the vegetables, graining, wiping and cleaning the floor, on the municipal road or the surroundings, just outside our houses. This creates nuisance which gives birth to mosquitoes, malaria, different insects, and viruses, fungus, bacteria which leads to viral fever. Hence every woman should use the garbage box. The collected garbage should be thrown in the garbage boxes kept by the municipality, If this habit is developed, we will not only be able to keep our houses clean but, the colony, the city and our surrounding environment will also become orderly, tidy and healthy.

#### c) Use of non-conventional Sources of energy

India has limited resources of conventional energy. Dependency of our mass population for fuel on forests is another additional cause for the vanishing forest wealth and disturbing ecosystems. In developing countries, like India, women are collecting fuel wood from nearby forests, carries it for domestic purposes and also sells it elsewhere to their family help incomes. The fire wood etc. burnt in open country. Soil, water and forest can be conserved if alternative kitchen fuel is provided. Our women can again contribute in this direction and come forward by using solar lights, solar geyser, solar cooker, smokeless Chulhas etc.

#### d) Development of good habits among children

Mother is the first teacher. She plays an important role in the development of the personality of the child. As a mother nurtured their children, take care of her children in their womb, like wise earth also take care of its people reside in it. She can instill in future generations a respect for nature and the value of biodiversity. She can develop good habits in the child from the very beginning as:

1. Don't spit anywhere;
2. Love and respect the nature;
3. Don't spoil or harm the plants/trees, during their visits to gardens, or public places.
4. Don't throw rubbish here and there;
5. Keep the things in a tidy manner; parks, school garden etc;
6. And for woman, don't allow the children to waste the paper

Children are usually in habit of tearing away papers from their note books, a mother can keep a check on this bad habit of the child. She can make them understand that for paper production, the wood is used. Deforestation can bring unhappiness by disturbing the eco-system.

#### Women Environmentalists Of India

India is considered itself as mother of earth. However, women in India are playing a crucial role in protection and conservation of environment. Women had launched numbers of movement in demanding of better protection of natural resources and environment conservation. Like in India, Amrita Devi had sacrificed their life for protection of the trees that was going to fell down by commercial logger in Uttarakhand. In 1972, Chamoli district in Uttarakhand, Chipko Movement had started by Sundarlal Bahuguna and Bachni Devi and Gaura Devi, these two women environmentalists played a significant role. Another environmental movement was Silent Valley Movement in 1978, on the Silent Valley, Palakkad district of Kerela. Here also Sughatha kumari a women poet had played an important role Other women like Vandana Shiva have also contributed in environment conservation and protection. They had organized women and people through the Navdanya movement of 1982. We can have a brief overview it as follows

1. **Vandana Shiva (India):** An influential leader in developing nation environmentalism is Vandana Shiva, born on November 5, 1952, in India. Vandana Shiva has a B.S. in Physics, a M.A. in philosophy



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Late Annasaheb P. S. Wadile  
Arts College, Thalner  
Tal. Shirpur, Dist. Dhule

from the University of Guelph (Ontario, Canada) and received her Ph.D. from the University of Western Ontario in Quantum Theory Physics. Vandana Shiva is a world-renown environmental scholar and activist and she has made great strides for women in India as well as around the world. As a physicist, environmentalist adhering to Ecofeminism, Vandana Shiva has published numerous papers on the unequal burden placed on women by environmental degradation, stating that women and children "bore the costs but were excluded from the benefits" of development. Vandana Shiva is also an active voice for localized, organic agriculture and she began a movement entitled Navdanya where participating Indian farmers have created 'freedom zones' to keep their crops free of chemicals to revitalize an organic food market in India. She has received many honorary degrees awards. In 1993 she received the Right Livelihood Award. In 2010 Sydney Peace Prize and in 2011 she received the Calgary Peace Prize. In addition, Vandana Shiva was named "one of the 7 most influential women in the world." by Forbes.

2. **Amrita Bai:** The first ever environmental movement is not only in India but also in the world had started in 1731 where women sacrifice their life to save trees. It was in Khejarli, Marwar region of Rajasthan, Amrita Bai along with other women embraced the Khejri trees from cut down by the king's soldier for a new palace. As Bishnois community had consider this khejri trees as sacred. They proclaimed that a chopped head is cheaper than a felled tree. Hence, Amrita Devi, who lead the movement along with other villagers lost their life to save trees. There were 363 villagers were killed by the soldiers for the check of protection of trees. At last the king cease the operation and designated Bishnoi as protected area which is exist as same till now.

3. **Medha Patkar:** Narmada Bachao Andolan (NBA) is the most significant environmental movement in India launched in 1985 against the large Sardar Sarovar Dam project which would be constructed over the Narmada river, which flows through the states of Gujrat, Madhya Pradesh and Maharashtra's project consist of 30 major, 135 medium and 3000 small dams whereas the dam would displace 3,20,000 tribal and submerged over 37000 hectares of forest and agricultural land. Seeing the intensity of the project the NBA was organized under the leadership of Medha Patkar. It was basically a Gandhian way of protest of non-violence as organized satyagraha and hunger strike. As the project was funded by World Bank, after several days of protest world bank withdraw the project in 1993.

4. **Amrita Devi:** One of the first environmentalist movements which was inspired by women was the Chipko movement (Women tree-huggers in India). "Its name comes from a Hindi word meaning "to stick". The movement was an act of defiance against the state government's permission given to a corporation for commercial logging. Women of the villages resisted, embracing trees to prevent their felling to safeguard their lifestyles which were dependent on the forests. Deforestation could qualitatively alter the lives of all village residents but it was the women who agitated for saving the forests. Organized by a non-governmental organization that Chandi Prasad Bhatt led, the Chipko movement adopted the slogan "Ecology is permanent Economy." The women embracing the trees did not tag their action as feminist activism; however, as a movement that demonstrated resistance against oppression, it had all the markings of such." It began when Maharajah of Jodhpur wanted to build a new palace in Rajasthan which is India's Himalayan foot hills. While the axe men were cutting the trees, martyr Amrita Devi hugged one of the trees. This is because in Jodhpur each child had a tree that could talk to it. The axmen ignored Devi and after taking her off the tree cut it down. Her daughters' environmentalists like Chandi Prasad Bhatt and Sunderlal Bahuguna.

5. **Sugatha Kumari:** In 1976, in Palakkad district of Kerala, an ecological movement was started for the conservation of Silent Valley biodiversity hotspot. The movement was against the construction of dam for hydroelectric project which would be submerge the entire moist evergreen forest. The movement was led by Malayalam poet and environmentalist Sugatha Kumari. As a result then, Prime Minister Indira Gandhi called off the silent valley hydroelectric project and after that Rajiv Gandhi declared Silent Valley as National Park in 1985.

6. **Rahi bai Popare:** Rahibai Soma Popere, popularly known as SEED Mother for conserving indigenous seeds. She has worked for conserving hundreds of native varieties and encouraging

farmers to grow traditional crops. She has also made it a motto of her life to spreading awareness about organic farming, agro-biodiversity, and wild food resources. Popere is a 52-year-old tribal farmer from Mahadeo Koli Tribal community from Komblne village of Akole tribal block in Ahmednagar district of Maharashtra. She could not attend school due to poverty and started supporting her family in agricultural work in agri labor and cow rearing since she was 10 years old. She got married with Soma Popere, who was also uneducated, at the age of 17 years. The whole family was dependent on agriculture. Although she had not attended school, she learnt about agro biodiversity, wild food resources, and traditional culture through practice and experience.

#### Conclusion

A woman role into the protection of environment is has been noticed very remarkable since Ancient times. Women are always closely connected with the surrounding nature. Their habits are very useful for environment protection. Women have a direct connection with her day to day activities to environment with their deep knowledge of it. Women are closely connected with the environment, if ensured that each women of the society have the opportunity to learn about the environmental important and how to protect and improves their surrounding for future generations. Though the Government of India is working towards an environmentally sound and sustainable quality of life, the problems, challenges and issues are multi-faceted. However, women in India are playing a crucial role in protection and conservation of environment. Women in our country have brought a different perspective to the environment debate, because of their different experience base. Poor women's lives are not compartmentalized and they see the issues in a broad and holistic perspective. They understand clearly that economics and environment are compatible. Women know a very importance of nature as vegetation, other necessities for their day-to-day living and require care and good management. Environmental degradation is related not only to the biosphere alone, but to the social sphere as well.

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**Principal**

Late Annasaheb P.S. Wadile  
Arts College, Thalner  
Tal. Shirpur, Dist. Dhule



## CONTRIBUTION OF WOMEN IN DEFENCE DEPARTMENT – POST INDEPENDENCE ERA

Prof. Satish Madhukar Borse, (Dept. of History), Late. Annasaheb Pitambar Shankar  
Wadile Arts college Thalner, Tal. Shirpur Dist. Dhule.

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All branches of the Indian Armed Forces have women in combat roles. Women are allowed in combat services and supervisory roles (as officers). The Indian Air Force had 13.09% (2018) and 8.50% (2014) women; the Indian Navy 6% (2018) and 3% (2014); the Indian Army 3.80% (2018) and 3% (2014).[1][2] As of 2020, three officers have the rank of lieutenant-general or equivalent, all in the Medical Services. In May 2021, 83 women were inducted as Jawans for the first time in the Indian Army, in the Corps of Military Police.[3]

### History

In 1888, the British Indian Army (BIA) established a military branch known as the Indian Military Nursing Service (IMNS), which recruited female nurses. This was the first time that the BIA recruited female servicemembers into its ranks.[4] Female IMNS nurses served during World War I and World War II, 350 of whom either died, were taken as prisoners of war or were declared missing in action; one of the largest casualties suffered by the IMNS occurred on February 1942, when the SS Kuala, which was transporting several nurses, was sunk by Imperial Japanese Armed Forces bombers.[4] In May 1942, the Women's Auxiliary Corps was established to assist BIA operations; by the end of World War II, it had recruited 11,500 women.[5]

Noor Inayat Khan, who was of Indian descent, served in the Special Operations Executive (SOE) during World War II. She was secretly sent to German-occupied France to assist in SOE operations there. Khan was betrayed and captured before being subsequently executed at the Dachau concentration camp, and was posthumously awarded the George Cross for her service.[6] Kalyani Sen, the first Indian servicewoman who visited the United Kingdom, served in the Royal Indian Navy's Women's Royal Indian Naval Service during World War II.[7] In 2021, the Indian Armed Forces' National Defence Academy entrance exam was opened up to female cadets.[8]

### Indian Army

Under the Army Act of 1950, women were ineligible for regular commissions except in "such corps, departments or branches which the central government may specify by way of notifications." [9] On 1 November 1958, the Army Medical Corps became the first unit of the Indian Army to grant regular commissions to women.[10] Since 1992, women were first inducted in to various branches of Indian Army only in short service commission.[9] In 2008, women were first inducted as permanent commissioned officers in Legal and Education corps, in 2020 they were first inducted in 8 more corps as permanent commissioned officers.[11] As of 2020, women are not yet allowed as combatant in the Parachute Regiment of Indian Army or other specialist forces, but they can join paratroopers wings of their respective arms like para EME, para signals, para ASC, etc. Here is the status of women's induction in various branches of army in any role as well as in coveted permanent commissioned officers role.[12][9]

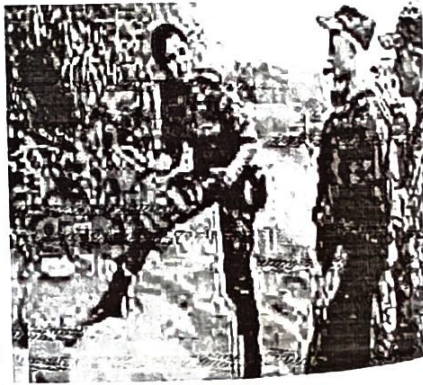


**Principal**  
Late Annasaheb P.S. Wadile  
Arts College, Thalner  
Tal. Shirpur, Dist. Dhule

Name of corps/regiment	Since	Notes
Army Aviation Corps	2020 <sup>[12]</sup>	Women can't get permanent commission.
Army Corps of Signals	1992 <sup>[9]</sup>	Since 2020 in permanent commission (short service commission). <sup>[12]</sup>
Army Dental Corps	1888 earlier <sup>[4]</sup>	or Since 1958 in permanent commission (long service commission). <sup>[10]</sup>
Army Education Corps	1992 <sup>[7]</sup>	Since 2008 in permanent commission (short service commission). <sup>[12]</sup>
Army Medical Corps	1888 earlier <sup>[4]</sup>	or Since 1958 in permanent commission (long service commission). <sup>[10]</sup>
Army Ordnance Corps	1992 <sup>[7]</sup>	Since 2020 in permanent commission (short service commission). <sup>[12]</sup>
Army Postal Service Corps	1992 <sup>[7]</sup>	Women can't get permanent commission.
Army Service Corps	2020 <sup>[12]</sup>	Since 2020 in permanent commission (short service commission).
Corps of Army Air Defence	2020 <sup>[12]</sup>	Since 2020 in permanent commission (short service commission).
Corps of Electronics and Mechanical Engineers	1992 <sup>[7]</sup>	Since 2020 in permanent commission (short service commission). <sup>[12]</sup>
Corps of Engineers	2020 <sup>[12]</sup>	Since 2020 in permanent commission (short service commission).
Corps of Military Police	2020 <sup>[13]</sup>	First inducted since 2020 (short service commission). <sup>[13]</sup>
Intelligence Corps	2020 (short service commission) <sup>[12]</sup>	Capt. Ganve Lalji is first Aide de camp to an army commander (Lieutenant General). <sup>[14]</sup>
Judge Advocate General's Department	1992 <sup>[7]</sup>	Since 2008 in permanent commission (short service commission). <sup>[11]</sup>
Military Nursing Service	1888 <sup>[4]</sup>	Major General Joyce Gladys Roach is present commander. <sup>[15]</sup>
Territorial Army	2018 <sup>[17]</sup>	

#### Notable women

A female officer of the Indian Army briefing Russian soldiers during a joint exercise in 2015. As of 2020, women are not allowed to serve in combat units such as Infantry, Mechanised infantry, Armoured corps, and Artillery.<sup>[12]</sup> On 27 August 1976, Gertrude Alice Ram, the military nursing service Matron-in-Chief, became the first woman officer in the Indian Army to attain the rank of Major General, and the first female officer in the Indian Armed Forces to attain two-star rank. With Ram's promotion, India became only the third nation in the world to promote a woman to flag rank, behind the United States and France.<sup>[18]</sup> In

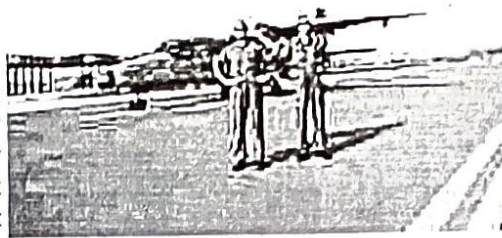


1992, the Indian Army began inducting women officers in non-medical roles.[19] On 19 January 2007, the United Nations first all female peacekeeping force made up of 105 Indian policewomen was deployed to Liberia.[20] Ruchi Sharma became the first operational paratrooper in the Indian Army, joining in 1996.[21] Priya Jhingan, commissioned in 1993, is one of the first 25 women to join the Indian Army as an officer. Alka Khurana, also commissioned in 1993, is the first woman from Indian Army to participate in Republic Day Parade and Army Day Parade in 1994.[22][23][24][25][26] Sapper Shanti Tigga was the first female jawan (private rank) in the Indian Army who joined in 2011.[14] Priya Semwal's husband had fallen in a counter-insurgency operation in Arunachal Pradesh in 2012; she went onto join as an officer in the Indian Army Corps of EME, the first wife of a jawan whose husband had fallen in a counter-insurgency operation to do so.[14] Lieutenant Colonel Mitali Madhumita, commissioned in 2000, is the first woman officer in India to receive a gallantry award, who received the Sena Medal in 2011 for exemplary courage shown during the attack on the Indian embassy in Kabul by terrorists in Kabul, Afghanistan on 26 February 2010,[27] and operations in Jammu-Kashmir[28] and the northeast states.[27][29][30] Anjana Bhaduria, who joined the first-ever batch of female cadets in 1992 at the Officers Training Academy, Chennai, is the first female officer in the Indian Army to win the gold medal. Including Priya Jhingan and her, the first batch of women officers of the Indian Army was commissioned in March 1993.[31][14] Divya Ajith Kumar, commissioned in 2010, is the first female officer to receive the Sword of Honor.[32][33] She led all women contingent of 154 women officers and cadets during the Republic Day parade of 2015.[33] Captain Swati Singh, an engineer and then only female officer in her 63 Brigade of the Indian Army, is the first female officer to be deployed at Nathu La pass as Signals in-charge.[14] In February 2020 Madhuri Kanitkar became the third woman to become a Lieutenant General in the Indian Army. Along with her husband who is also a Lieutenant General they will be the first couple to both reach the rank.[34] On 17 February 2020, the Supreme Court of India said that women officers in Indian Army can get command positions at par with male officers. The court said that the government's arguments against it were discriminatory, disturbing and based on stereotype. The court also said that permanent commission should be available to all women, regardless of years of service, and that this order must be implemented in 3 months.[35] The government had earlier said troops would not accept women as commanding officers.[36] Consequently, 8 more corps or branches started to induct women as commissioned officers.[12] Ganeve Lalji, Corps of Military intelligence, is the first woman to be an Aide de camp to an Army Commander (Lieutenant General).[14]

### Indian Air Force

Women Pilots of the Indian Air Force. Indian Air Force inducts women in all roles, including combat and support roles. As of September 2020, there were 1,875 female officers serving in the IAF, including 10 pilots and 18 navigators.[37]

The first woman officer in the Indian Air Force, Vijayalakshmi Ramanan, was commissioned into the Army Medical Corps and was seconded to the Air Force. She retired as a Wing Commander in the Air Force in 1979.[38] In August 1966, Flight Lieutenant Kanta Handa, an IAF medical officer, became the first female IAF officer to receive a commendation for her service during the 1965 Indo-Pakistan war.[39]



In 1994, women joined the air force as pilots in support role; Gunjan Saxena and Sreevidya Rajan[40] were among the first women to fly in a combat zone during Kargil War (May-July 1999).[14] In 2006, Deepika Misra, a Brahman was the first IAF woman pilot to train for the Sarang display team.[14] In 2012, Nivedita Singh (Flight Lieutenant) from Rajasthan, became the first woman from the Indian Air Force to summit the Mount Everest.[14] In 2015, Indian Air Force opened new combat air force roles for women as fighter pilots, adding to their



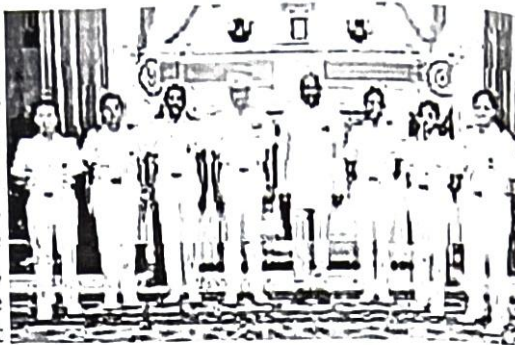
**Principal**

**Late Annasaheb P.S. Wadile**  
Arts College, Thalner  
Tal. Shirpur, Dist. Dhule

role as helicopter pilots in the Indian Air Force.[41] On 22 May 2019, Bhawana Kanth became the first woman fighter pilot to qualify to undertake combat missions.[42] Women are now taking up combat roles in Indian Air Force with Avani Chaturvedi, Mohana Singh Jitarwal, and Bhawana Kanth being the first 3 women fighter pilots.[43] Marking International Women's Day on 8 March 8, 2020 all 3 fighter pilots were awarded Nari Shakti Puraskar.[44] Wing Commander Shaliza Dharmi became the first woman officer to be given permanent commission with the Indian Air Force.[45] Squadron Leader Minty Agarwal became the first woman to receive a Yudh Seva Medal.[46]

### Indian Navy

All-women crew of INSV Tarini on completion of their voyage of circumnavigation of the globe In October 1976, Dr. Barbara Ghosh became the first woman officer in the Indian Navy to attain the rank of commander. Having joined the navy in 1961, she was also the first woman medical officer to receive a permanent naval commission.[47] Dr. Punita Arora, commissioned in 1968, is the first woman in the Indian Army to reach the second highest rank, Lieutenant General,[48] and the first female Vice Admiral.[49] Padmavathy Bandopadhyay is the first woman Air Marshal of the IAF and the second woman



in the Indian armed forces to be promoted to a three-star rank after Lt. General Punita Arora.[14] Nonetheless, the Indian Navy still opposes the idea of putting women in warships as sailors or officers, even though women fly on maritime patrol aircraft like P81 and IL 38.[50] On 8 March 2018, International Women's Day the six-member crew of INSV Tarini that participated in Navika Sagar Parikrama namely Lt Cdr Vartika Joshi, Lt Cdr P. Swathi, Lt Cdr Pratibha Jammwal, Lt Payal Gupta, Lt Aishwarya Boddapati, and Lt Shourgrakpam Vijaya Devi were conferred Nari Shakti Puraskar for outstanding contribution towards women empowerment. The award was received by Lieutenant Shourgrakpam Vijaya Devi, who is Northeast India's first female officer on behalf of team.[51] On 2 December 2019, Sub-lieutenant Shubhangi Swaroop became the first woman pilot for the Indian Navy. She will be flying the Dornier 228 surveillance aircraft.[52] On 26 August 2021, Surgeon Vice Admiral Sheila S. Mathai became the fourth woman to be promoted to three-star rank and the first direct navy woman vice-admiral.

### Special Forces of India

As of 2020, Women are not yet allowed as combatant in the combat specialist forces, such as Ghatok Force, Garud Commando Force, MARCOS, para commandos, etc.

Dr. Seema Rao, also known as "India's Wonder Woman", [53][54][55] is India's first woman commando trainer,[56] having trained over 15,000 Special Forces of India[57][58] (including the NSG, MARCOS, GARUD)[59] as full-time guest trainer for 20 years without compensation[59][60] as a pioneer in close quarter battle (CQB).[61][62]

### Paramilitary forces of India

Indian Coast Guard  
Assam Rifles  
Special Frontier Force  
Border Security Force  
Central Reserve Police Force  
Central Industrial Security Force  
Border Security Force  
Sashastra Seema Bal

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Late Annasaheb P.S. Wadile  
Arts College, Thalner  
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Indo-Tibetan Border Police  
Special Protection Group  
Railway Protection Force  
National Disaster Response Force  
Border Roads Organisation

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