

## Prevalence and pattern of stress relaxation practices in Ahmedabad city: A cross-sectional study

Himanshu K Nayak<sup>1</sup>, Batra Sonia<sup>2</sup>, Rachna Kapoor<sup>3</sup>, Rajendra Gadhavi<sup>4</sup>, Anand Solanki<sup>5</sup>, Sheetal Vyas<sup>6</sup>, Hemant Tiwari<sup>7</sup>

<sup>1,4</sup>Department of Community Medicine, B. J. Medical College, Ahmedabad, <sup>2</sup>Department of Obstetrics & Gynecology, B. J. Medical College, Ahmedabad, <sup>3,5,6</sup>Department of Community Medicine, AMC MET Medical College, Ahmedabad, <sup>7</sup>Department of Community Medicine, Smt. NHL MMC, Ahmedabad, India

**Address for correspondence:** Dr. Himanshu Nayak,  
11/A, Divyajyot Tenements, Near Heaven Park, Satellite, Ahmedabad – 380 015, Gujrat, India.  
E-mail: drhknayak@yahoo.co.in

### ABSTRACT

**Background:** Research has shown the growing importance of stress relaxation practices (SRPs) in many noncommunicable diseases. But there is little information on the prevalence of SRPs in Indian population.

**Objectives:** To study the prevalence of different types of SRPs and their sociodemographic profile.

**Materials and Methods:** A community-based cross-sectional study was carried out in Ahmedabad city, Gujarat, India. One ward from each zone of the city was selected by stratified sampling. All individuals above 20 years were included in the study. Detailed information regarding different SRPs practiced by the participants was collected in a standard pretested proforma by house-to-house survey. Univariate regression analysis was applied to compare the groups.

**Results:** Of 1157 persons surveyed, 904 were included in the final analysis. Of these, 310 (34.3%) were doing SRPs and 594 (65.7%) were not doing any type of SRPs. Respondents doing SRPs were compared with non-SRP group. Significant ( $P < 0.05$ ) differences were noticed between the two groups; in females, it was (SRP 58.4% vs non-SRP 49.8%) in the age group 40 to 59 years (44.2 vs 33.8%), those from sedentary occupation (93.9% vs 85.4%), the persons belonging to upper socioeconomic status (70.6% vs 61.8%), and living in central and western zones (66.5% vs 24.6%) and had less number of diabetes (SRP 10.8% vs non-SRP 19.7%) and hypertension (20.7% vs 34.2%). People doing SRPs were able to maintain balance between work and other activities than non-SRPs group (198/310, 63.9% vs 42/594, 7.1%). Among SRPs, majority (243, 78.4%) were involved in religious activities followed by yoga, 36 (11.6%), and meditation, 15 (4.8%).

**Conclusion:** Persons practicing SRPs in Ahmedabad are more likely to be above 40 years of age, females, college educated, in sedentary occupation, from upper and middle class, married and living in new-west and central zones, and were less likely to have diabetes and hypertension as compared with those who do not practice SRPs.

**Key words:** India; prevalence; sociodemographic profile; stress relaxation practices.


### INTRODUCTION

Stress is a major factor behind many health-related problems. Stress is defined as a condition characterized by symptoms of physical and mental strain or tension, which can result from a reaction to a situation in which person feels threatened, pressured, etc.<sup>[1]</sup> Reasons for stress

can be physical (injury or illness) or mental (problems in marriage, job, health, or fitness). Bjorntop's hypothesis<sup>[2]</sup> postulates that psychosocial stress triggers the onset of visceral obesity, insulin resistance, and dyslipidemia. Globalization and technological innovations are bringing about new challenges to the study of mental health and stress management.

India is currently experiencing a rapid epidemiological transition from communicable to noncommunicable diseases. Rapid industrialization and urbanization with subsequent rise in standard of living, obesity, stress, sedentary lifestyle, addictions, etc., are posing a growing concern to the health of the nation in terms of diseases like obesity, diabetes, hypertension, development of restrictive lung functions, and cardiovascular morbidities.<sup>[3]</sup>

#### Access this article online

<b>Website:</b> www.ijoy.org.in	<b>Quick Response Code</b> 
<b>DOI:</b> 10.4103/0973-6131.85491	

Urbanization is the major factor responsible for the rise in the prevalence of hypertension and diabetes.<sup>[4-6]</sup> Cardiovascular diseases (CVD) in developing countries are expected to increase almost twice than in the developed countries<sup>[7]</sup> and diabetes in India is expected to rise to 69.9 million by 2025, unless urgent preventive steps are taken.<sup>[8]</sup> In India, almost 2.6 million individuals are predicted to die due to coronary heart disease<sup>[9]</sup> and there would be 111% increase in cardiovascular deaths in India by 2020.<sup>[4]</sup> This rising trend is explained as consequences of urbanization, such as change in lifestyle pattern, diet, and stress. Furthermore, it is the imbalance between rise in the population, technological advancement, and decreased job opportunities which lead to stress and hypertension in young people.<sup>[10]</sup> NHIS report revealed that 43% persons were practicing Complementary and Alternative Medicines (CAM) including prayer, 7.6% meditation, and 5.1% yoga in USA.<sup>[11]</sup> No details are available regarding the prevalence of different stress relaxation practices (SRPs) in India. There is no such study conducted on SRPs. People of Gujarat are prone to develop stress and related disorders like hypertension, diabetes, etc., because of genetic susceptibility, sedentary lifestyle, urbanization, and industrialization.

Relaxation and cognitive behavioral skills are helpful, cost-effective, and beneficial group methods than individual counseling. It is important scientifically, practically, and financially to promote stress management programs for the betterment of people.<sup>[12]</sup> The role of religious practices, meditation, yoga, herbal and ayurvedic therapies in the modulation of coronary risk factors such as smoking cessation, weight control, hypertension, dyslipidemias, diabetes, endothelial dysfunction, and stress has been evaluated.<sup>[13]</sup> The practice of yoga, a traditional Indian system, is now gaining international acceptance for stress-coping skills. Yoga helps therapeutically (in asthma, cardiac patients, multiple sclerosis, migraine, rheumatoid arthritis, and rehabilitation) and promotes physical and mental health.<sup>[14]</sup> Repeated practice of different techniques related to SRPs will increase physical and psychological comfort and at the same time create conditional relaxation responses in the nervous system.<sup>[15]</sup>

Because of the increasing burden of the lifestyle diseases and potential to prevent them with stress relaxation, efforts are required for promotion of stress relaxation programs. The present study was taken up to know the pattern of SRPs and characteristics of the users and to find out its importance in prevention of chronic diseases.

### Aims and Objectives

The present study was carried out to study the prevalence of different types of SRPs in the study population and their sociodemographic profile.

## MATERIALS AND METHODS

A cross-sectional community-based study was carried out by house-to-house survey in municipal corporation (AMC) areas of Ahmedabad city. This study was done along with an epidemiological study of diabetes in urban areas of Ahmedabad. Sample size for the diabetes survey was 900 (assuming 10% prevalence and 20% allowable error in  $n = 4PQ/L^2$ ). So, the data for the SRPs were collected from all the respondents of the diabetes research. AMC has six zones, namely, south, north, central, east, west, and new west, covering population of around 3.5 million and which is expected to double by 2011.<sup>[16]</sup> Each zone is divided into 9 to 11 wards. Sample was stratified proportionately in each zone depending on the population of the respective zone. So, the numbers of people to be selected from each zone were 157 from south, 166 from north, 116 from central, 170 from east, 135 from west, and 156 from new west zone. After the stratification, one ward was randomly selected from each zone, and from each of the selected ward, one area was randomly selected for the survey. All people above 20 years of age, in the visited houses from the selected area of each ward, were included in the study until the desired sample size of that particular zone was reached. Clearance from institutional ethical committee was taken. Study was carried out during May, 2007 to July, 2008. Initially, a pilot study was carried out and preliminary analysis was done to reformat the questionnaire and to prepare the final proforma. House-to-house visit was carried out in the defined area. Signed informed consent was taken from all participants. Information was collected in a predesigned and pretested proforma [Table 1] from each respondent in detail regarding sociodemographic parameters, history of diabetes and hypertension, and the frequency and pattern of SRPs. We had asked for SRPs like yoga, pranayama, meditation,

**Table 1: Proforma in tabular form**

Sociodemographic profile	Age, Sex, Education, Income, Family composition, Per capita income, M. Status, Types of family, Occupation
Past history	Of Hypertension, Diabetes, CVD, and other diseases.
Examination	Height, Weight, BMI, Waist and Hip circumference, WHR, Pulse, Blood Pressure
Stress relaxation practices	a) Do you practice any type of stress relaxation activities? b) How frequently per week you do it? c) How many times per day you practice it? d) How much time did you spend every time for those activities? e) Type of relaxation – Yoga/ meditation/religious activity/stretching exercise f) Do you balance between work and playing of other activities? g) Do you spend time with close friends/ relatives? h) How much time do you spend? i) What type of video and music programs do you prefer to watch and listen?

stretching exercise, raiky, and religious practices like mantra chanting, dhyana, prayer, spiritual book reading, rituals, listening to music, etc.

Socioeconomic status (SES) was calculated by modified Prasad's classification.<sup>[17,18]</sup> All people of more than 20 years of age in the visited houses and who had given written informed consent were covered in the survey. After the completion of interview, people were educated about the importance of adopting the healthy lifestyle and other health promotional measures for the importance of SRPs. Total three visits were conducted to increase overall response rate.

**Data analysis**

Data were collected, compiled, and analyzed in Excel sheet. Categorical variables were analyzed with Chi-square, while qualitative data were analyzed with the help of Z test. We analyzed data with SPSS17 demo version for comparison of sociodemographic characteristics of the two groups, i.e., those doing SRPs and those not doing SRPs. We identified independent factors associated with SRPs using univariate linear regression analysis. Significance was checked at  $P < 0.05$ .

**RESULTS**

Figure 1 - A study profile figure.

Total 1157 people were contacted; of them, 904 participated in the study. So, the overall response rate was 78.1%. Of 904 subjects examined, 594 (65.7%) were not doing any type of SRPs, while only 310 (34.3%) were doing different type of SRPs.

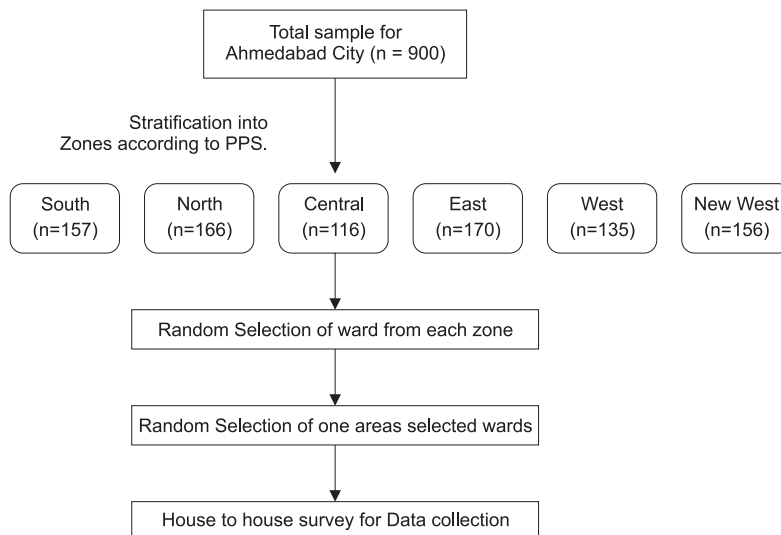
**Demography**

Table 2 shows the selected sociodemographic characteristics

**Table 2: Demographic profile**

Variables	Persons doing SRPs 310	Persons not doing SRPs 594	Total
Age (Years)			
20 – 29	35 (11.29)	150 (25.25)	185
30 – 39	52 (16.77)	152 (25.59)	204
40 – 49	67 (21.61)	124 (20.88)	191
50 – 59	70 (22.58)	77 (12.96)	147
60 – 69	45 (14.52)	57 (9.60)	102
70 – 79	30 (9.68)	24 (4.04)	54
80 and above	11 (3.55)	10 (1.68)	21
Sex			
Males	129 (41.6)	298 (50.2)	427
Females	181 (58.4)	296 (49.8)	477
Educational status			
Illiterate	19 (6.1)	20 (3.4)	39
Primary	86 (27.7)	142 (23.9)	228
Secondary	85 (27.4)	141 (23.7)	226
HSC	19 (6.1)	77 (13)	96
College	94 (30.3)	174 (29.3)	268
Professional	7 (2.3)	40 (6.7)	47
Occupation			
Moderate	19 (6.1)	87 (14.6)	106
Sedentary	291 (93.9)	507 (85.4)	798
SES class			
I ( $\geq 2554$ Rs)	102 (32.9)	162 (27.3)	264
II (1277-2554)	117 (37.7)	205 (34.5)	322
III (766-1277)	73 (23.5)	194 (32.7)	267
IV (383-766)	18 (5.8)	33 (5.5)	51
Marital status			
Divorcee	0 (0.0)	3 (0.5)	3
Married	246 (79.4)	483 (81.3)	729
Separated	1 (0.3)	0 (0.0)	1
Unmarried	22 (7.1)	69 (11.6)	91
Widowed	41 (13.2)	39 (6.6)	80
Medical			
Diabetes	61 (19.7)	64 (10.8)	125
Hypertension	106 (34.2)	123 (20.7)	229
Balance between work and activity	198 (63.9)	42 (7.1)	240

SRP - Stress relaxation practices, Figures in parenthesis are in percentage



**Figure 1:** Selection of subjects from the different zones of Ahmedabad city

of people doing and not doing SRPs. Mean age was  $49.32 \pm 15.8$  and  $41.62 \pm 15.2$  for people doing and not doing SRPs, respectively. This difference in mean age of people doing and not doing SRPs was statistically highly significant ( $Z = 7.06, P < 0.001$ ). Of 904 people, 427 (47.2%) were males and 477 (52.8%) were females. 181 (38%) of females and 129 (30%) of males were doing SRPs. This sex difference was statistically significant ( $Z = 2.55, P < 0.05$ ).

Of all, 268 people (29.7%) had education up to college level, while illiterate people were only 39 (4.3%). Of 310 people who practiced SRPs, 94 (29.3%) were educated up to college, while only seven (2.3%) were from professional group. Difference between persons of sedentary occupation, 291 (36.5%), and moderate activity occupation, 19 (17.9%), who were practicing SRPs, was statistically highly significant ( $Z = 4.54, P < 0.001$ ).

SES was calculated by modified Prasad's classification. Difference in the prevalence of SRPs among those from SES class I and II and class III and IV was statistically significant ( $\chi^2 = 6.63, P < 0.01$ ). Difference between marital status and SRPs was statistically significant ( $\chi^2 = 17.9, P < 0.001$ ).

SRPs were practiced more among people living in central (129, 41.6%) and new west (77, 24.8%) zones as compared with people living in south (20, 6.5%), east (25, 8.1%), and west (24, 7.7%) zones.

### Type of stress relaxation practices

Table 3 displays the patterns of SRPs in the study population. Of those practicing SRPs (310), majority (243, 78.4%) was involved in religious activities followed by 36 (11.6%) in yoga while only 0.6% were involved in stretching exercises, meditation, and religious activities. Of 904, 731 people (80.9%) were spending time with relatives or friends to relieve stress. 440 people (48.7%) were listening to mixed type of music (fast and slow), while 175 (19.4%) were listening to only slow music to get relief from stress.

### Frequency and duration of practice

Of 310, 279 participants (90%) were practicing SRPs on daily basis, while only 15 (4.8%) were doing it once a week; of these, 265 (85.5%) were doing SRP once a day, while only two (0.6%) were doing it three times a day.

Most of the people (176, 56.8%) were doing their respective SRPs for 10 to 20 min/day. Mean frequency of SRPs per week was  $6.73 \pm 1.13$  days for females and  $6.39 \pm 1.69$  days for males; mean frequency/day was  $1.2 \pm 0.4$  and  $1.1 \pm 0.25$  times for females and males, respectively, while the mean duration/day was  $27.5 \pm 24.1$  and  $27.1 \pm 21.1$

**Table 3: Pattern of stress relaxation practices**

Types of stress relaxation practices	n	%
Meditation	15	4.8
Meditation, Religious	3	1.0
Meditation, Yoga	3	1.0
Raiky, Yoga	1	0.3
Religious activities (RA)	243	78.4
Stretching exercise	4	1.3
Stretching exercise, Meditation	1	0.3
Stretching exercise, RA	1	0.3
Yoga	36	11.6
Yoga, RA	3	1.0
Total	310	100.0

minutes for females and males, respectively.

### Benefits of doing stress relaxation practice

In the whole group, 26.5% (240/904) of the people were able to maintain good balance between work and play, whereas 63.9% (198/310) of those who were doing SRPs were able to keep balance between work and other activities (such as playing role of husband, father, son, and as a member of community), and only 42 (7.0%) of those who were not doing SRPs (594) were able to keep this balance, and this difference of balanced life between SRPs and non-SRPs was statistically highly significant ( $Z = 19.4, P < 0.0001$ ).

### Diseases

Among those who were practicing SRPs, only 61/310 (19.7%) persons had diabetes, while 63/594 (10.8%) persons had diabetes among those who were not practicing SRPs. This difference was statistically highly significant ( $Z = 3.44, P < 0.001$ ). Similarly, statistically significant difference was found between persons (106/310, 34.2%) having hypertension and practicing SRPs and persons (123/594, 20.7%) having hypertension and not practicing SRPs ( $Z = 4.27, P < 0.001$ ).

### Regression analyses

Univariate linear regression analysis [Table 4] shows several sociodemographic factors that were independently associated with SRPs. SRPs were directly associated with age. We also found that people practicing stress relaxation were more likely to be females, had more education, sedentary occupation, higher SES, married, and more likely to live in new west and central zones. Hypertension and diabetes were negatively associated with SRPs.

## DISCUSSION

Present study was intended to find out the prevalence and pattern of SRPs among  $\geq 20$  years of age population.

Prevalence of SRPs (including all patterns) in the current study was 310 (34.3%), of which majority (243, 78.4%)



**Table 4: Independent statistical association of the social and demographic factors with SRPs**

Variables	Social and demographic factors	Adjusted odds ratio (95% confidence interval)
Age (Years)	20 – 29	1.0 (Reference)
	30 – 39	0.066 (–0.026 – 0.158) ( <i>P</i> = 0.161)
	40 – 49	0.162 (0.068 – 0.255) ( <i>P</i> = 0.001)
	50 – 59	0.287 (0.187 – 0.387) ( <i>P</i> = 0.000)
	60 – 69	0.252 (0.140 – 0.364) ( <i>P</i> = 0.000)
	70 – 79	0.366 (0.226 – 0.506) ( <i>P</i> = 0.000)
	80 and above	0.335 (0.126 – 0.543) ( <i>P</i> = 0.002)
Sex	Males	1.0 (Reference)
	Females	0.77 (0.015 – 0.139) ( <i>P</i> = 0.014)
Educational status	Professional	1.0 (Reference)
	Illiterate	0.338 (0.138 – 0.538) ( <i>P</i> = 0.001)
	Primary	0.228 (0.080 – 0.376) ( <i>P</i> = 0.003)
	Secondary	0.227 (0.079 – 0.375) ( <i>P</i> = 0.003)
	HSC	0.049 (–0.115 – 0.213) ( <i>P</i> = 0.559)
Occupation	College	0.202 (0.056 – 0.348) ( <i>P</i> = 0.007)
	Sedentary	1.0 (Reference)
	Moderate	–0.185 (–0.281 – –0.090) ( <i>P</i> = 0.000)
SES class	III and IV (Lower and Middle class)	1.0 (Reference)
	I and II (Higher class)	0.088 (0.023 – 0.152) ( <i>P</i> = 0.008)
Marital status	Married	1.0 (Reference)
	Unmarried	–0.096 (–0.199 – 0.007) ( <i>P</i> = 0.068)
	Divorcee	0.175 (0.066 – 0.284) ( <i>P</i> = 0.002)
	Separated	–0.337 (–0.873 – 0.198) ( <i>P</i> = 0.216)
	Widow	0.663 (–0.263 – 1.588) ( <i>P</i> = 0.160)
Region	New west zone	1.0 (Reference)
	Central	0.079 (–0.014 – 0.171) ( <i>P</i> = 0.094)
	North	–0.307 (–0.406 – –0.207) ( <i>P</i> = 0.000)
	South	–0.390 (–0.492 – –0.288) ( <i>P</i> = 0.000)
	East	–0.375 (–0.474 – –0.276) ( <i>P</i> = 0.000)
	West	–0.326 (–0.433 – –0.219) ( <i>P</i> = 0.000)
Medical conditions	Diabetes	–0.168 (–0.258 – –0.079) ( <i>P</i> = 0.000)
	Hypertension	–0.161 (–0.231 – –0.090) ( <i>P</i> = 0.000)

SRP - Stress relaxation practices

was practicing religious activities like mantra, dhyana, prayer, spiritual book reading, rituals, hearing music, etc., and 36 (11.6%) were practicing yoga. Study showed increasing trend of doing SRPs among people  $\geq 40$  years of age. Mean age of people who were doing and not doing SRPs was  $49.32 \pm 15.8$  and  $41.62 \pm 15.2$ , respectively. Younger persons are more reluctant to SRPs and it might be due to the effect of urbanization and westernization. The persons who were practicing stress relaxation practicing were mostly females (58.4%), had college-level education (30.3%), had sedentary occupation (93.9%), married (79.4%), belonged to higher SES (70.6%), and had residential location in new west and central zones.

We found that more women were practicing SRPs than males. This might be due to religious inclination of women of Gujarat toward religious activities compared with males and also social factors like most of them were housewives, who had more time after retirement and had completed their family responsibilities such as the marriage of their sons and daughters and so could spend more time in religious activities. Maximum numbers of subjects, who were practicing SRPs, were from new west and central zone of the city. The central zone which is the old part of the city (walled city) seems to have residents who have preserved their traditional customs and rituals and hence are involved in religious activities in their daily practice. The new west zone is the new extension of Ahmedabad which has residents who have more westernized lifestyle and there seems to be more awareness about the modern techniques of SRPs such as yoga, meditation, and stretching exercises along with religious activities. We found that persons with SRPs were less likely to have diabetes and hypertension compared with the persons without SRPs. Similarly, Oexmann *et al.*<sup>[19]</sup> reported results on a church-based intervention in cardiovascular risk reduction in Christian communities in North and South Carolina in the USA. Richard *et al.*<sup>[20]</sup> found that stress management gives clinically significant benefit to patients with type 2 diabetes.

### Comparisons

Our findings are similar to the study conducted by Birdee *et al.* in USA.<sup>[21]</sup> They showed that yoga users were more likely to belong to younger age groups, female gender, graduates, and belong to higher class and western region, and were less likely to have hypertension. Similar findings were also revealed by Saper *et al.*<sup>[22]</sup> in the nationally representative sample, USA. Methodology differs that they had taken CAM and Yoga users and we have included all types of SRPs, but not other types of CAM. Chaya *et al.* found that long-term yoga practice (for 1 year or more) is associated with increased insulin sensitivity and attenuates the negative relationship between body weight or waist circumference and insulin sensitivity.<sup>[23]</sup>

Report prepared by Patricia *et al.*<sup>[11]</sup> found that 43% persons were practicing CAM including prayer, 7.6% meditation, and 5.1% yoga. Other studies done by Bishop and Lewith<sup>[24]</sup> and MacLennan *et al.*<sup>[25]</sup> showed similar findings. They found CAM practice users were more likely to be females, older adults, college educated, positive correlation with age and higher status, but they had focused on CAM use.

There are very few studies which covered all the types of stress relaxation techniques, as most of the studies are done on CAM users and randomized control trials on efficacy of yoga. We have included yoga, meditation,

religious activities, etc., but not other types of CAM. Yoga and pranayama have ancient origin in India, but younger population are less familiar with them and their importance in prevention of health problems, so they are less likely to practice SRPs.

## CONCLUSION

In the present study, people with SRPs are more likely to be above 40 years of age, females, having college education, indulging in sedentary occupation, belonging to upper-middle SES, married, and more likely to residing in new west and central zones. Diabetes, hypertension, and other chronic lifestyle-related disorders can be prevented by SRPs. Policy makers should take SRPs seriously in prevention and treatment of many health problems as it is cost-effective strategy with its ancient roots, so community acceptance would be easily perceived. Health education and other promotional programs should be planned to make the community, especially the younger generation, well versed with SRPs and its importance for primordial and primary prevention of many currently prevalent diseases in our society.

There are limitations to our study. Respondents self reported the information and so data may be subject to recall bias. SRP users were defined as whether they are doing SRPs or not, but not included the duration of it. We identified differences in SRPs among individuals based on demographic characteristics, but as this is cross-sectional study, we cannot identify causal relationship between characteristics and SRPs.

## SUGGESTIONS FOR FUTURE RESEARCH

Majority of researches are conducted in the USA; so, further research should be conducted in other country including India as yoga and meditation have their ancient roots in India. Future researches should be planned to find out the population who are more likely to get benefit of SRPs and health problems that can be prevented or treated with SRPs.

## RECOMMENDATIONS

The health education and Behavior Change Communication (BCC) campaign should be planned to make them more health conscious and importance of SRPs in this challenging world of globalization and industrialization.

## ACKNOWLEDGMENT

I am thankful to chairman of ethics committee, Medical officers, and Workers of respected wards for their help about detail information of area. Funding is not taken from anywhere.

## REFERENCES

1. Available from: <http://www.yourdictionary.com/dictionary-articles/Definition-of-Stress.html> [Last accessed on 2010 Nov 19].
2. Bjorntorp P. Visceral fat accumulation: The missing link between psychosocial factors and cardiovascular disease? *J Intern Med* 1991; 230:195-201.
3. Kishore J. National health programs of India. 7th Ed, Chap.1, Century publication, new delhi, 2007,p.1-3.
4. Gupta RH. Recent trends in hypertension epidemiology in India. *South Asian J Prev Cardiol* 2003;7(2) ([http://www.sajpc.org/vol7/vol7\\_2/recenttrends.htm](http://www.sajpc.org/vol7/vol7_2/recenttrends.htm)).
5. Available from: <http://www.idf.org/press-releases/idf-press-statement-china-study> [Last accessed on 2010 Nov 19].
6. Gupta R. Meta analysis of prevalence of hypertension in India. *Indian Heart J* 1997;49:43-8.
7. Gaziano TA. Cardiovascular disease in the developing world and its cost-effective management. *Circulation* 2005;112:3547-53.
8. Sicree R, Shaw J, Zimmet P. Diabetes and impaired glucose tolerance. In: Gan D, editor. *Diabetes Atlas*. International Diabetes Federation. 3rd ed. Brussels: Belgium; 2006 p. 15-103.
9. Murray CJ, Lopez AD. *Global Health Statistics, Global Burden of Disease and Injury Series*, Boston, MA: Harvard School of Public Health; 1996.
10. Available from: <http://www.medsci.org/v02p0070.htm> [Last accessed on 2010 Nov 19].
11. Patricia MB, Eve PG, McFann K, Nahin RL. Complementary and alternative medicine use among adults: United States, 2002, *Adv Data* 2004;27:343:1-19.
12. Sims J. The evaluation of stress management strategies in general practice: An evidence led approach, *Br J Gen Pract* 1997;47:577-82.
13. Gupta R, Chandra H. Prayers, Mantra and Heart diseases. *South Asian J Prev Cardiol* 2004;8(3) ([http://www.sajpc.org/vol8/vol8\\_3/vol832004.htm](http://www.sajpc.org/vol8/vol8_3/vol832004.htm)).
14. Bhala B. Yoga in modern medicine. *Int J Altern Complement Med*. 1996; 14:9-10.
15. Cole R. "Relaxation: Physiology and Practice" booklet. Del Mar, Calif.: Synchrony Applied Health Sciences, 1994;1.
16. Available from: [http://www.egovamc.com/a\\_city/amc/statistical/population.asp](http://www.egovamc.com/a_city/amc/statistical/population.asp). [Last accessed on 2010 Nov 19].
17. Kumar P. Modified Prasad classification. *IJCM* 1993; 19:21-61.
18. Available from: <http://www.rbidocs.rbi.org/in/rdocs/bulletin/pdfs/83091.pdf>. [Last accessed on 2010 Nov 19].
19. Oexmann MJ, Ascanio R, Egan BM. Efficacy of church-based intervention on cardiovascular risk reduction. *Ethn Dis* 2001; 11:817-22.
20. Richard SS, van Tilburg MA, Zucker N, McCaskill CC, Parekh P, Feinglos MN, *et al.* Stress management improves long-term glycemic control in type 2 diabetes. *Diabetes Care* 2002;25:30-4.
21. Birdee GS, Legedza AT, Saper RB, Bertisch SM, Eisenberg DM, Phillips RS. Characteristics of yoga users: results of a national survey. *J Gen Intern Med* 2008;23:1653-8.
22. Saper RB, Eisenberg DM, Davis RB, Culpepper L, Phillips RS. Prevalence and patterns of adult yoga use in the United States: results of a national survey. *Altern Ther Health Med* 2004;10:44-9.
23. Chaya MS, Ramakrishnan G, Shastri S, Kishore RP, Nagendra H, Nagarathna R, *et al.* Insulin sensitivity and cardiac autonomic function in young male practitioners of yoga. *Natl Med J India* 2008; 21:217-21.
24. Bishop FL, Lewith GT. Who Uses CAM? A Narrative review of demographic characteristics and health factors associated with CAM Use. *Evid Based Complement Alternat Med* 2010;7:11-28.
25. MacLennan AH, Wilson DH, Taylor AW. Prevalence and cost of alternative medicine in Australia. *Lancet* 1996;347:569-73.

**How to cite this article:** Nayak HK, Sonia B, Kapoor R, Gadhavi R, Solanki A, Vyas S, *et al.* Prevalence and pattern of stress relaxation practices in Ahmedabad city: A cross-sectional study. *Int J Yoga* 2011;4:87-92.

**Source of Support:** Nil, **Conflict of Interest:** None declared