



# CHALLENGES TO HARNESS INDIA'S DEMOGRAPHIC DIVIDEND: ARE WE ON THE RIGHT TRACK? - A CROSS SECTIONAL STUDY IN SOUTH INDIA

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## ABSTRACT

**Introduction:** Currently India's demographic profile is changing in such a way that in the next 20-25 years we shall be having World's youngest workforce. In order to reap the benefits of demographic dividend current students have to be interested in vocational education and also have to be physically and mentally healthy. So the current study was designed to assess the perceptions about vocational education and presence of risk factors of non communicable diseases among them.

**Methods:** Cross sectional study conducted among 389 students of selected colleges of Bangalore through convenient sampling technique. Pre tested semi structured questionnaire was administered and analysed in SPSS 17.

**Results:** Only 35.7% had heard of vocational education and 31.9% were interested in pursuing vocational education as their career. Many had developed risk factors for non communicable diseases and few of them were also mentally disturbed.

**Conclusion:** There is a need to create awareness about vocational education among these students. Life style modification and life skill education is the need of the hour among these students.

**Key words:** demographic dividend, vocational education, risk factors, mental health

## INTRODUCTION

India's demographic profile is currently changing by declining birth rates and improving life expectancy, resulting in low dependency ratio which shall improve India's economy. These results in a unique window of opportunity called "demographic dividend" for the next 20 to 25 years to our country where we shall be having world's youngest work force.<sup>1</sup>

Global shortage of skilled man power is projected that to be 56 million by 2020. By exploiting India's demographic dividend we can meet the skilled manpower requirements of both India and as well as of abroad.<sup>1</sup>

Vocational education is the one which provides skill training which basically consists of practical courses to gain skills and experience which are directly linked to a career in future. It offers better employment opportunities and better placements in jobs.<sup>2</sup>

To harness the demographic dividend through skill development, the Eleventh Five Year Plan preferred the creation of a comprehensive National Skill Development Mission and has a vision to create 500 million skilled people by 2022. Adequate measures have also been taken in Twelfth five year plans too.<sup>1</sup> But they are exposed to various hurdles mainly due to inadequate skilling capacities, lack of standard courses across country and industry-curriculum misalignment.<sup>3</sup>

One of the opportunities for India to harness the demographic dividend is huge and young manpower. But the first challenge is this young working force ready to take up vocational education as their future career? Second challenge is how healthy both physically and mentally they will be to develop those skills and apply in their future thereby improving our country's economy.

Currently the students pursuing senior secondary education will be the future working force of our nation. Future jobs being mainly skill oriented there is a need to provide adequate skills through vocational education. But there was a need to know how students perceive about vocational training as their future career growth. So the current study was designed to assess the perceptions about vocational education among students studying in selected Pre University colleges in Bangalore. Additionally the study was also designed to assess the presence of risk factors for non communicable diseases among these students.

## METHODS

A cross sectional study was conducted in the month of July- August 2015 using convenience sampling technique. Study population included all the students studying first and second pre university (PU) degree in selected colleges of Bangalore. Students were selected from government, private and aided colleges and also from arts, science and commerce combination. Inclusion criteria consisted of all the students pursuing 1<sup>st</sup> & 2<sup>nd</sup> year PU degree in selected colleges and those who were present on that particular day in the college at the time of interview. Those who were not willing to participate for their own reasons were excluded.

Sample size was calculated based on the study conducted in India in the year 2012 showed that 69% of the students in 12<sup>th</sup> class or pursuing second PU were interested in entering vocational education.<sup>4</sup> Based on these findings with absolute precision of 5% and at desired confidence interval of 95%, it was estimated that 328 students need to be included in the study. However it was proposed to cover 360 students. (Assuming 10% as non response); however 389 students participated in this study. Questionnaire was developed & pilot tested. Pre tested semi structured questionnaire was administered to first and second year students of selected colleges in Bangalore. Depression, anxiety and stress among students were assessed through DASS score-21 scale.<sup>5</sup> Height, weight & waist circumference was measured as per the standard guidelines.<sup>6,7</sup>

**Statistics:** SPSS version 17.0 was used for analysis. Quantitative data such as age, income etc was summarized through descriptive statistics such as

mean with standard deviation and median with inter quartile range. For qualitative variables like gender, field of interest in vocational education courses, presence of risk factors for non communicable diseases was expressed in frequency and percentages.

Ethical clearance was obtained for conducting the study from the institutional ethical committee. During the survey, consent from the head of the institutions of the selected colleges and informed assent was taken from all the students who provided information.

## RESULTS

### *Demographic details of study population*

Mean age of the study population was 16.7 yrs $\pm$ (0.66) and 50.6% were males. 45% of the students were from private college. Among them 50.6% were from first PU. From commerce branch 52.7% participated while 34.2% were from science. (Tab1)

**Table 1: Demographic details of the students**

Variables	Frequency (n=389) (%)
<b>Age (years)</b>	
16	152 (39.1)
17	202 (51.9)
18	32 (8.2)
19	2 (0.5)
20	1 (0.3)
Mean $\pm$ (SD) of Age	16.7 yrs $\pm$ (0.66)
<b>Gender</b>	
Male	197 (50.6)
Female	192 (49.4)
<b>Type of the college</b>	
Government	136 (35)
Aided	76 (19.5)
Private	177 (45.5)
<b>PUC</b>	
First PUC	180 (50.6)
Second PUC	209 (49.4)
<b>Branch</b>	
Arts	51 (13.1)
Science	133 (34.2)
Commerce	205 (52.7)

### *Perceptions about vocational education*

Among 389 students 353 (90.7%) had some particular career in their mind and 372 (95.6%) wanted to pursue higher education after completing PU college studies. Only 35.7% had heard of vocational education and 31.9% were interested in pursuing vocational education as their career; while 46% were undecided. (Table 2) Among the students 47.3% said that girls can also receive vocational education training, while 16.2% disagreed; the most common reason being that girls will get married and concentrate on family life, so there is no

**Table 2: Perceptions about vocational education among the students**

Perceptions	Frequency (%)
Do you have any particular career (job) in your mind	353 (90.7)
Interest in pursuing higher education	372 (95.6)
Heard of vocational education	139 (35.7)
Interest in pursuing any form of vocational education in the future	124 (31.9)*

\*'Don't Know' was replied by 179 (46%) participants

**Table 3: Field of interest in vocational education among the students\***

Field of interest	Frequency (%)
Banking/insurance and finance	80 (20.6)
IT or software	43 (11.1)
Media, entertainment, broadcasting, content creation, animation	25 (6.4)
Automobile/auto-components	23 (5.9)
Food processing	16 (4.1)
Electronics hardware	15 (3.9)
Beauty culture	15 (3.9)
Tourism, hospitality and travel	15 (3.9)
Gems and jewellery	11 (2.8)
Building and construction	11 (2.8)
Others#	65 (16.7)

\* (Multiple responses elicited)

#Others include - Textiles and garments, leather goods, Chemicals and pharmaceuticals, warehousing and packaging, home furnishings, ITES-BPO, handicrafts

**Table 4: Expectations among interested students after pursuing vocational training\***

Expectations after pursuing vocational training	Frequency(%)
Opportunity to work in foreign countries	101(26)
Better job placement	98 (25.2)
Job opportunities	89 (22.9)
Reliable source of income	65 (16.7)
Start your own business/ workshop	59 (15.2)

\* (Multiple responses elicited)

**Table 5: Reasons given by students for not being interested in pursuing any form of vocational education in the future\***

Reasons given	Frequency(%)
Want to continue further higher education	80 (20.6)
Don't know about a good vocational education course	28 (7.2)
Family discourages vocational education	10 (2.6)
Do not know anyone attending vocational education	3 (0.8)
Too costly to afford	11(2.8)
People consider it as low status	7 (1.8)
People consider the students pursuing vocational education as dumb or low IQ students	3 (0.8)
Vocational education is not prestigious	4 (1)

\* (Multiple responses elicited)

need of giving vocational training to girls. Among those who were interested in pursuing vocational education banking (80) and IT and software (43) were the common field of interest (Table 3). Their expectations after undergoing a vocational training were opportunity to work in foreign countries (26%) and better job placements (25.2%). (Table 4) Among those who were not being interested in pursuing any form of vocational education in the future the common reasons given by students were 20.6% wanted to continue further higher education while 7.2% of them weren't aware of any good vocational education courses while 2.8% of them considered it as low status or not a prestigious issue to pursue vocational education as their future career. (Table 5)

### *Presence of risk factors for Non Communicable Diseases among the students*

In our study 17.2 % were overweight and 5.4% had waist circumference above the cut off values which indicated obesity. 42.4% consumed carbonated drinks atleast once a day in past 30 days and 31.4% consumed fast foods atleast  $\geq 3$  in a day in past 7 days. Around 4.9% had started smoking and 3.1% had consumed alcohol in the past one year. Out of 389 students 66.1% had physical activity  $\leq 4$  days in a week while 48.1% of students had sedentary lifestyle for  $\geq 3$  hours per day. The other risk factors assessed were usage of fluid inhalers, steroid pills, cough syrups and injectable drugs. (Table 6)

In the past one year 3.9% had attempted to suicide and family history of suicide was also present in 6.4% of them. Depression, anxiety and stress were assessed using DASS-21score. In our study 38.8%, 50.1% and 19.8% of the students experienced mild to severe level of depression, anxiety and stress in the past one week. (Table 7)

## DISCUSSION

A study was conducted among students of higher secondary schools at Dadra & Nagar Haveli with objectives to study the awareness of vocational education among these students, guidance given at school and readiness to avail vocational guidance by these students. They found that majority of the students were not aware that most of the vocational training were available after passing twelfth standard. Majority of them dint know the names of universities/colleges where such courses were available. Majority of the students did not get any vocational guidance in their school but they wished to have vocational guidance programmes in their school.<sup>8</sup>

A study was conducted in three different states of India among the class 12 students with sample size

**Table 6: Presence of risk factors for non communicable diseases among the students (N= 389)**

Risk factors	Frequency (%)
Family history present for DM/HTN/IHD/stroke	64 (16.5)
Consumed carbonated drinks at least once in a day in past 30 days	165 (42.4)
Consume fast foods at least $\geq 3$ in a day in past 7 days	122 (31.4)
Pre-obese (BMI = 23.01 - 27.5)	47 (12.1)
Obese (BMI >27.5)	20 (5.1)
Abnormal waist circumference ( $\geq 90$ cm for males $\geq 80$ cms for females)	21 (5.4)
Physical activity (<4 days in a week)	257 (66.1)
Sitting activities for $\geq 3$ hours per day	187 (48.1)
Active smoking (age of initiation earliest is 7 yrs- 17 yrs)	19 (4.9)
Passive smoking at home	63 (16.2)
Passive smoking at workplace/ outside	108 (27.8)
Alcohol consumption in past 1 yr	12 (3.1)
Usage of Fluid inhalers in past 1 yr	2 (0.5)
Usage of Steroid pills in past 1 yr	9 (2.3)
Usage of Cough syrup in past 1 yr	12 (3.1)
Usage of Injecting drugs in past 1 yr	3 (0.8)

**Table 7: Presence of risk factors for mental disorders among the students (N= 389)**

Risk factors	Frequency (%)
Attempted suicide in past 12 months,	15 (3.9)
Close family (mother, father, sibling, relative) ever attempted suicide	25 (6.4)
Depression in past one week	151 (38.8)
Anxiety in past one week	195 (50.1)
Stress in past one week	77 (19.8)

of 2855 in the year 2012 to assess the student's interest, awareness and perceptions associated with vocational education. 82% of all respondents said that they had a particular job in mind. When asked directly 69% of them; were interested in entering vocational education courses while 13% were undecided. Most common reason to refuse vocational education as a career choice was found to be 76% wanted to continue higher education while 27% dont know about a good vocational education course; similar reasons were also observed in our study.<sup>4</sup>

No studies were directly available on our two objectives i.e perceptions of vocational education and presence of risk factors for non communicable diseases. However a cross sectional study conducted among pre university college students of Udupi taluk, Karnataka to assess the risk factors for non communicable diseases revealed that current smoking was present in 1.67% of the students while 16.94% were exposed to second hand smoke. Current alcohol drinkers were 2.5% and about 89.86% of them were physically in-active and

31.98% of the participants reported adding extra salt to the diet.<sup>9</sup>

A cross sectional study conducted in Maharashtra to assess the stress among students of different professions using DASS-21 and also to find out the associated factors for stress. They observed 24.4% experienced stress among which dental (38.5%), medical (34.1%) and engineering (27.4%) students were suffering and this was found to be statistically significant. They found that medical studies, lifestyle factors and academic factors were significant stress predictors.<sup>10</sup>

A study was conducted among 242 adolescent students in Greater Noida, Uttar Pradesh to assess the student's mental health; DASS-21 questionnaire was used to assess depression, anxiety and stress. They found that depression was significantly more among females. Depression ( $p=0.025$ ), Anxiety (0.005) and Stress ( $p<0.001$ ) were all significantly higher among the 10<sup>th</sup> and 12<sup>th</sup> when compared to the 9<sup>th</sup> and 11<sup>th</sup> classes.<sup>11</sup>

Even in our study majority of students were found to be depressed, anxious and stressed. This indirectly reveals a neglected area of the students' psychology and there is a need for urgent attention. Hence student counseling services have to be made available and accessible to reduce this morbidity.

To reap the benefits of the demographic dividend, appropriate policies and institutions need to be in place. Policies identified are creating high skilled jobs, optimum health policies and enhancing the human capital.<sup>12</sup> Based on our study we can understand that there is a need to create awareness about vocational education among these students and also provide information on life style modification and life skill education.

## CONCLUSION

In our study only 35.7% had heard of vocational education and 31.9% were interested in pursuing vocational education as their career. Certain students had already developed risk factors for non communicable diseases like obesity (5.4% based on abnormal waist circumference), alcohol consumption (3.1%) and active smoking (4.9%), leading sedentary lifestyle (48.1%) and less of physical activity (66.1%). Suicidal attempts in past one year were seen in 3.9% of them. Depression, anxiety and stress in the past one week were seen in 38.8%, 50.1% and 19.8% of them respectively.

## RECOMMENDATION

Based on our study findings we would like to recommend to create awareness among students

about vocational education, its advantages and to solve the misconceptions about this course. Additionally since many have already developed various risk factors for non communicable diseases there is a need to teach them about life style modification. Since few of them were mentally disturbed life skill education is the need of the hour if we really want to harvest the benefits of demographic dividend.

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