

A quantitative approach to analyze the decline of health and fitness of teenagers and children with special reference to Mumbai”

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Abstract: *The health of an individual is the biggest wealth that he can achieve. Rightly said “Health is Wealth”, the researcher wants to know why the educated youth even when knowing about the importance of health and fitness, don’t try to take care of their physical bodies and mental health and waste their time in activities and not only do not promote growth but instead create hindrances in the normal functioning of the body. Thus it is important to analyse the need for the fitness among the people in our society. Thus researcher has made an attempt to analyse the reasons for the decline of health and fitness in teenagers and children and their consequences by quantitative approach which is the field of applied Mathematical Statistics*

I. Introduction

It's almost a cliché that as parents watch their toddlers run around, they sigh to their friends, "I wish I had that kind of energy." The irony is that in another seven years, those same parents may well complain that their formerly energetic kids now won't get off the couch.

A new study by the Centers for Disease Control has found that physical activity among children peaks as early as age two and then begins a steady decline.¹ By the time they reach the age of 12, the majority of kids already are in poor cardiorespiratory shape from lack of physical activity. According to the study, fewer than 33% of girls between the ages of 12 and 15 are at an acceptable level of physical fitness. The situation for boys is slightly better, though still pathetic, with only 50% as fit as they should be. These numbers hold no matter the income level, race, or ethnic background of the youth.

Equally alarming is the rate at which fitness among young people seems to be declining. The overall percentage of young people at an acceptable fitness level who were tested between 1999 through 2000, including boys and girls, was 52%. In just 12 years, those rates plummeted to just 42% overall, and evidence indicates there's a steady trend downward.² Boys in particular showed a rapid decline, with fitness levels at 68% back in 2000, again, now showing at only 50%.

The subjects in the CDC study included a pool of about 450 boys and girls who were participating in the National Health and Nutrition Examination Survey (NHANES). Fitness levels were tested as the subjects ran on a treadmill. Not surprisingly, the obese subjects in the study had lower fitness levels compared to the subjects of normal weight. And of course, it makes sense that as we collectively barrel into obesity, fitness rates decline.

Reading between the lines, this means that our kids are heading en masse into adult debility and illness. The fact is that fewer than one in three kids now is physically active on a daily basis.³ Instead, the typical child spends at least seven and a half hours in front of the computer or TV screen. Plus, youth now have far fewer outlets for physical activity than they did 20 years ago. Whereas physical education once was a school requirement, now, only six states still require kids to take gym in grades K-12. If they want to exercise outside of school, their options also are limited.

By the way, the role of overeating in the low fitness levels may be less significant than lack of exercise, at least according to another study just published in The American Journal of Medicine. This second study, which relies on the same NHANES data pool, concluded that calorie consumption has remained steady over the past 20 years while exercise rates have dropped. In 1994, only 19 percent of women reported abstaining from exercise.

- ¹Reynolds, Gretchen. "This is Our Youth." 9 July 2014. The New York Times. 15 July 2014. <http://well.blogs.nytimes.com/2014/07/09/young-and-unfit/>
- ²Gahche, Jaime, et al. "Cardiorespiratory Fitness Levels Among U.S. Youth Aged 12--15 Years: United States, 1999--2004 and 2012." Number 153, May 2014. CDC. 15 July 2014. <http://www.cdc.gov/nchs/data/databriefs/db153.htm>
- ³"President's Council on Fitness, Sports, and Nutrition." 19 July 2014. <http://www.fitness.gov/resource-center/facts-and-statistics/>

II. Research Methodology

1) Research Problem

The health of an individual is the biggest wealth that he can achieve. Rightly said "Health is Wealth", the researcher wants to know why the educated youth even when knowing about the importance of health and fitness, don't try to take care of their physical bodies and mental health and waste their time in activities and not only do not promote growth but instead create hindrances in the normal functioning of the body.

2) Objectives Of Study

- To study the reasons for the decline of health and fitness in teenagers and children.
- To study the consequences of the decline of health and fitness in teenagers and children.

3) Scope Of Study

In order to complete the research effectively the scope of study was limited to the city of Mumbai. To procure the appropriate data classes that were targeted were businessmen, professionals, students and people associated with health and fitness (doctors, gym trainers, nutritionists, etc.)

4) Research Instrument

Questionnaire With the end goal of examination a survey containing inquiries covering different parts of the exploration was then displayed to the respondents to get their reactions. Closed ended questions and also Likert scale were utilized as a part of the majority of the inquiry so that the respondents don't confront any issues in noting the inquiries. The researcher utilized just few open finished inquiries the reason being that it has been watched that the respondents are hesitant to answer open ended questions.

5) Methods Of Data Collection

The researcher collected information through self-administered questionnaires which have been used to obtain primary data. These questionnaires were mailed to the commuters/users of Public transport to obtain their responses as regards the services provided by the concerned local authorities and also to know their preferences. This survey was conducted to avoid the misinterpretation of information obtained through secondary data which can be misleading at times. Also, primary data through such survey provides firsthand information, which helps in forming a correct opinion about the situation.

Secondary Data-With the end goal of secondary information web was utilized as an apparatus and data was acquired from the different sites the rundown of which is added to the report. The analyst gathered further information with the end goal of exploration through research papers and articles which is attached at the back end of the report.

6) Sampling Design

A sample design is a distinct arrangement decided before any information are really gathered for getting an example from a given populace. The analyst settled on random sampling method. Under this technique the analyst reached 65 respondents on simple random sampling method. Subsequently, the researcher altered an example size of 65 respondents from the city of Mumbai.

7) Research Design

The researcher has used descriptive study in this case to study the behavior and preferences. Descriptive study would be the most appropriate type of study considering the requirements of the research. The research is also exploratory in nature.

8) Hypothesis

- To test the relationship between gender and health and fitness of an individual.
- To test the relationship between education and health and fitness of an individual.
- To test the relationship between financial resources and health and fitness of an individual.

9) Hypothesis Testing

The researcher utilized just essential kind of statistical instrument to test hypotheses which is Chi-square. The hypotheses will be tried through chi-square, contingent on the nature and object of examination request. Hypotheses testing will bring about either tolerating the theory or in dismissing it therefore helping the specialist to reach to a conclusion.

10) Research Limitations

- The research was limited just to a restricted region of South Mumbai and its suburbs.
- The research was restricted to a specimen size of 65 respondents.
- Intentional trickiness, poor memory, or misconception of inquiries could all add to mistakes in information.
- Lack of time and logistical issues were different restrictions.
- Financial Constraints.

Data Analysis And Interpretation

1) Primary Analysis

Testing Of Hypotheses

H₀= There is no relation between gender and level of health and fitness.

H₁= There is relation between gender and level of health and fitness.

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Gender * Level_of_fitness	65	100.0%	0	.0%	65	100.0%
Gender * Responses	65 ^a	100.0%	0	.0%	65	100.0%

Crosstab							
Count		Level_of_fitness					Total
		Extremely	Moderately	Decent	Poor	Horrible	
Gender	Male	4	13	21	5	1	44
	Female	0	2	16	2	1	21
Total		4	15	37	7	2	65

Source :- Survey

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.733 ^a	4	.015
Likelihood Ratio	8.248	4	.083
Linear-by-Linear Association	3.551	1	.059
N of Valid Cases	65		

Source:- SPSS

P = 0.01 < 0.05

Therefore, Reject H₀

There is a relation between gender and level of health and fitness.

H₀= There is no relation between education and awareness and level of health and fitness.

H₁= There is relation between education and awareness and level of health and fitness.

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Education_level * Level_of_fitness	65	100.0%	0	.0%	65	100.0%
Education_level * Responses	65 ^a	100.0%	0	.0%	65	100.0%

Crosstab						
Count		Level_of_fitness			Total	
		VERY	NOT THAT MUCH	NOT AT ALL		
Education_level	YES	40	18	0	58	
	NO	0	5	2	7	
Total		40	23	2	65	

SOURCE :- SURVEY

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.279 ^a	2	.000
Likelihood Ratio	20.331	2	.000
Linear-by-Linear Association	19.222	1	.000
N of Valid Cases	65		
SOURCE:- SPSS			
P = 0.00 < 0.01			
Therefore, Reject H ₀			
There is relation between education and awareness and level of health and fitness.			

H₀= There is no relation between financial resources and level of health and fitness.

H₁= There is relation between financial resources and level of health and fitness.

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Financial_Resources	*63	100.0%	0	.0%	63	100.0%
Level_of_fitness						
Financial_Resources * Responses	63 ^a	100.0%	0	.0%	63	100.0%
*2 respondents omitted the question						

Crosstab					
Count		Level_of_fitness			Total
		VERY	NOT THAT MUCH	NOT AT ALL	
Financial_Resources	YES	31	15	0	46
	NO	9	6	2	17
Total		40	21	2	63

SOURCE :- SURVEY

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.847 ^a	2	.05
Likelihood Ratio	5.690	2	.058
Linear-by-Linear Association	2.772	1	.096
N of Valid Cases	63		
SOURCE:- SPSS			

P = 0.05 < 0.05

Therefore, Reject H₀

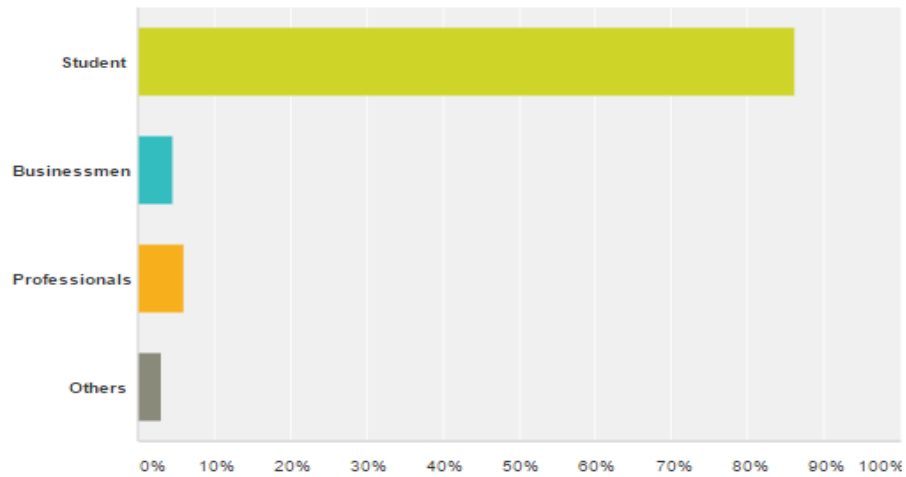
There is a relation between financial resources and level of health and fitness.

The researcher has made an attempt to draw conclusions based on secondary analysis. The secondary analysis was done by means of graphs and diagrams.

Diagram 1
Profession Segmentation

What is your profession?

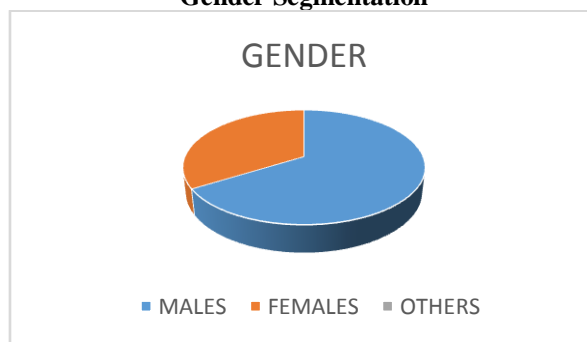
Answered: 65 Skipped: 0



Answer Choices	Responses	
Student	86.15%	56
Businessmen	4.62%	3
Professionals	6.15%	4
Others	3.08%	2
Total		65

The survey conducted included 56 students, 3 businessmen, 4 professionals and 2 others on a basis of random sampling method. The sample size was 65.

Diagram 2
Gender Segmentation



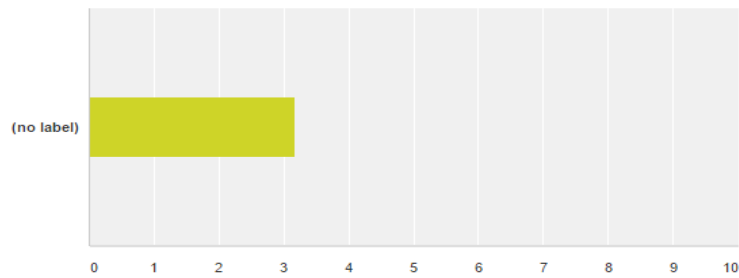
Answer Choices	Responses	
Female	33.85%	22
Male	66.15%	43
Total		65

Out of the 65 respondents that were selected 43 were male and the rest 22 were female. There wasn't any sight of other category.

Diagram 3

How fit and healthy do you think you are?

Answered: 65 Skipped: 0

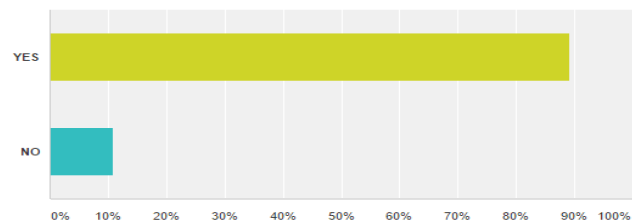


	Extremely	Moderately	Decent	Poor	Horrible	Total	Weighted Average
(no label)	6.15% 4	23.08% 15	56.92% 37	10.77% 7	3.08% 2	65	3.18

Diagram 4

Do you think education and awareness plays a role in the change of level of health and fitness of an individual?

Answered: 65 Skipped: 0



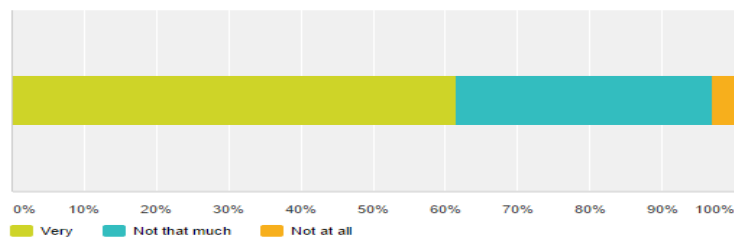
Answer Choices	Responses
YES	89.23% 58
NO	10.77% 7
Total	65

Around 90% believed that education and awareness level have a direct impact on the level of health and fitness of an individual. 10% of the respondents didn't believe that way.

Diagram 5

How strongly do you feel so?

Answered: 65 Skipped: 0



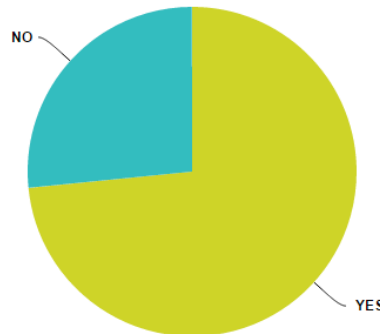
Answer Choices	Responses
Very	61.54% 40
Not that much	35.38% 23
Not at all	3.08% 2
Total	65

Out of the 65 respondents, 61.54% believed that there is a strong co relation between education and fitness level where as 35.38% believed that the relation between them is not too strong. 3.08% believed that there exists no co relation at all.

Diagram 6

According to you does financial resources play a role in an individual's life to be healthy?

Answered: 64 Skipped: 1



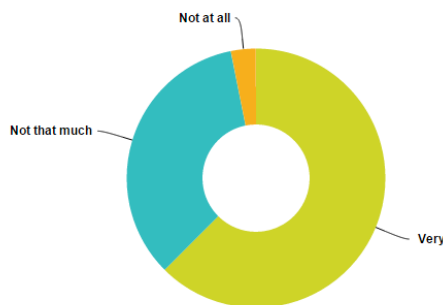
Answer Choices	Responses	
YES	73.44%	47
NO	26.56%	17
Total		64

When asked whether financial resources play a role in the level of health and fitness 73.44% and 26.56% denied it. One respondent omitted the question.

Diagram 7

How strongly do you feel so?

Answered: 64 Skipped: 1

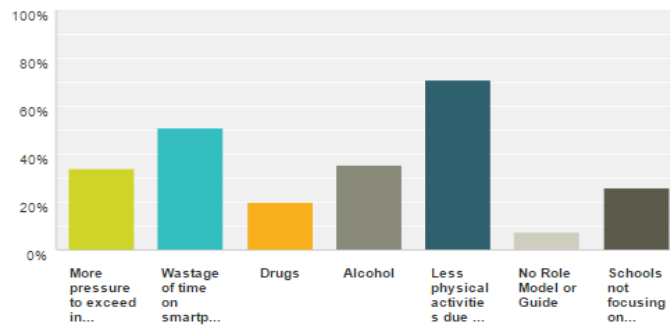


Answer Choices	Responses	
Very	62.50%	40
Not that much	34.38%	22
Not at all	3.13%	2
Total		64

Out of the 64 respondents, 62.50% believed that there is a strong co relation between financial resources and fitness level where as 34.38% believed that the relation between them is not too strong. 3.13% believed that there exists no co relation at all.

Diagram 8
What are the reasons for the decline of level of health and fitness?

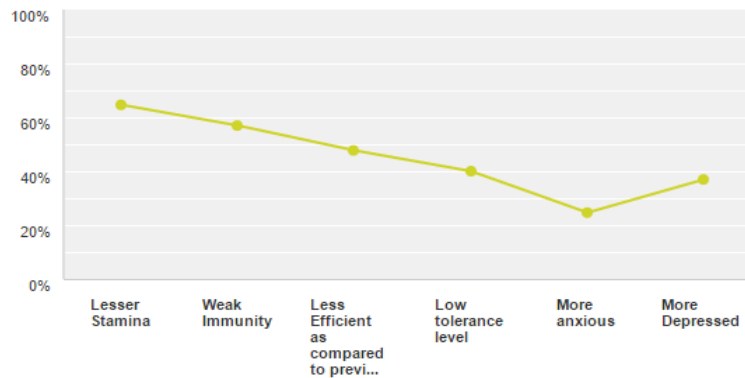
Answered: 65 Skipped: 0



Answer Choices	Responses
More pressure to exceed in academics	33.85% 22
Wastage of time on smartphones and Internet	50.77% 33
Drugs	20.00% 13
Alcohol	35.38% 23
Less physical activities due to the advancement in technology (for example less walking due to cars, buses, etc)	70.77% 46
No Role Model or Guide	7.69% 5
Schools not focusing on physical activities from the very beginning	26.15% 17

Diagram 9
What are the consequences of the declining level of Health and Fitness?

Answered: 65 Skipped: 0



Answer Choices	Responses
Lesser Stamina	64.62% 42
Weak Immunity	56.92% 37
Less Efficient as compared to previous generations	47.69% 31
Low tolerance level	40.00% 26
More anxious	24.62% 16
More Depressed	36.92% 24
Total Respondents: 65	

III. Conclusion

All this adds up to a generation of out-of-shape kids, with a future prognosis of even more out-of-shape kids on the way. The implications are profound.

Study after study confirms the devastating effects of lack of exercise: higher rates of heart disease, diabetes, cancer, depression. Other studies have shown that the incidence of high blood pressure in teens is steadily increasing, and signs of atherosclerosis are now being observed in children as young as four. And a new study just found that lack of exercise is a major contributor to Alzheimer's development.⁵ If kids don't get the fitness habit when young, chances are they won't develop it later, either. We wrote a few years ago about the fact that today's kids probably won't outlive their parents given climbing obesity rates and declining levels of fitness. This new data underlines that possibility.

What can be done? It seems a no-brainer to advocate for reinstating physical education back into public school curriculum. Parents may think it's more important for their kids to learn higher level math than to master high-jump skills, but knowing advanced trigonometry does no good if you're dead. Parents, health officials, school administrators and legislators need to rethink priorities, because, in today's world of structured activities, school is the only possible place where most kids can get daily exposure to physical activity beyond hitting the remote. There's only so many hours a week mom can spend taking kids to non-school soccer practice.

IV. Recommendations

Realizing how important it is to be fit and healthy in today's time one needs to know the various ways to achieve the same. From the respondents the researcher was able to formulate the following recommendations.

- Start from a younger age
- Be less anxious about the future
- People are literate, they just have to implement the knowledge they have
- Give incentives to the youth
- Find more time to improve your health and walk at least half hour a day
- Fitness to be introduced at school level right from primary
- Need more infrastructure in the fields of sports and including it in academics
- Importance of physical activities is a must
- More awareness regarding fitness and healthy foods through the medium of TV, newspapers, internet, etc.
- Lower fitness house prices, educate them more in school or colleges
- Introduce fitness from school level
- Explore the world as there is lot more to explore other than phones and gadgets
- Awareness should be made in all class of life through media
- Increase physical activity in educational institutions and extracurricular.
- Have more community outdoor activities organized
- Everyday 1 hour gym to maintain the fitness level and reduce junk food
- Avoid drugs and alcohol
- Less stressful regimes and healthy diet along with physical activities.
- Stay fit. Stay healthy.
- Raising awareness about health concerns and making physical activity in some way compulsory in school
- The youth should moderately improve their physical activities.
- Eat healthy and sleep well

Bibliography

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