

Navigating Perspectives: Examining Public Attitudes Towards Sex Education Through Python-Powered Data Analysis

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Abstract

This study addresses the prevalent moral laxity, exemplified by promiscuity, prostitution, low awareness, and rising sexually transmitted diseases. Parents' reluctance to educate their children about sex, fearing it may encourage early sexual activity, adds to the concern. The research aims to explore people's attitudes toward sex education, utilizing a descriptive survey with a questionnaire. The data analysis indicates notable differences in attitude based on age, education level, and location. In response, the study recommends incorporating sex education into school curricula for comprehensive reproductive health knowledge and emphasizes the need for societal reeducation on evolving trends and responsibilities in children's sexual development. Common avenues for sex education are parents or caregivers, school programs, and public health campaigns. Good Sex education instills an understanding of how the choices affect their well-being and that of others. Having mutual respect results in reliable relationships, how we interact with other people possesses a powerful and long-lasting impact on the people involved.

Key words: Sex Education, Python code, public health campaigns, Chi-square test, Mutual respect.

INTRODUCTION

Sex education, sometimes called sexuality education, refers to formal programs of instruction on a wide range of issues relating to human sexuality, including human sexual anatomy, sexual reproduction, sexual intercourse, reproductive health, emotional relations, reproductive rights and responsibilities, abstinence, contraception, and other

aspects of human sexual behavior.[1]

Common avenues for sex education are parents or caregivers, school programs, and public health campaigns. Sex education aims to reduce the risks of potentially negative outcomes from sexual behavior, such as unwanted or unplanned pregnancies and infection with sexually transmitted diseases including HIV/AIDS. It also aims to contribute to young people's positive experience of their sexuality by enhancing the quality of their relationships and their ability to make informed decisions over their lifetime.[2] Sexuality is influenced by the reaction of biological and psychological, social, economic, political, legal, ethical, religious and special factors. As per Sex Information and Education Council of the United States (SIECUS, founded in 1964) Sex education is "a lifelong process of building a strong foundation for sexual health through acquiring information and forming attitudes, beliefs and values about identity, relationship and intimacy". Sex education is a broad term treated as a usual topic for health education and used to describe education about human sexual anatomy, reproduction, sexual intercourse, reproductive health, emotional relations, reproductive rights and responsibilities, abstinence, contraception and other aspects of human sexual behavior. [3]

OBJECTIVES AND IMPORTANCE

It is important for a person to realize the health, well-being and dignity of not only themselves but also of others. It simply means honoring and having empathy with the range of experiences and identities that exist in the world that every human goes through.[4]

Developing respectful social and sexual relationships will enhance life quality. Some people choose to be in a relationship, some people don't. Some people will have feelings of attraction not restricted to one gender. But that's okay. Every individual's likes and dislikes vary. Relationships can be dramatic but all of these need to be acknowledged as human experiences, even, when they are different from one's own. The past few decades have seen a drastic change towards the equality and the rights of LGBTQ+ individuals yet they face discrimination and harassment at some of their life because of sexual orientation and gender. identity.[5]

Good Sex Education teaches the young generation what constitutes sexual violence. Some-times kids are unaware of the sexual exploitation they are experiencing, they hesitate to tell their parents about it because they are not aware of it. Sexual violence is wrong and kids have the right to know about their body and ask for help if they have been assaulted.[6]

SIGNIFICANCE OF STUDY

One of the much-debated topics in India is whether sex education is necessary in India. But considering the lack of awareness among the youngsters and their involvement in sex in a rather primitive way, considering it as an act without any responsibility has spoiled the individuals concerned, with early pregnancies, abortions, sexually transmitted diseases, AIDS, mental tensions, stress, torture, desertion from their

families, loss of social respect and in the end resulting in utter failure in their studies and becoming a wayward in life.[7] Under the circumstances mentioned above, since prevention is better than cure, we have to launch our programs in the right direction, such as disseminating knowledge about sex and the dreaded disease AIDS, its social impact etc.

The need for Sex education in the educational process is unquestionable. Sex education is the inculcation of the correct moral attitudes towards sex. It means all the educational measures that prepare young people to meet the problems of life center around the sex instinct. Therefore it is imperative that parents untold the true significance of sex. In the wholesome development of young into healthy and intelligent adulthood. [8]

MATERIALS AND METHODS

Google forms

The target population for the survey was the population of people of any age group. Googleform was circulated among various people of different age groups, to conduct the survey. The questionnaire consisted of 17 questions including name, age, residence, highest educational qualification, marital status, etc. Out of 17 questions, all questions were marked important. The questionnaire included questions regarding the importance of sex education, the role of parents, teachers, and media etc in sex education, the benefits of sex education, etc.

Python

The obtained responses were used in the language python to calculate the chi-square test. We have made use of scipy.stats library which provides us with chi2 contingency() function to implement the Chi-square test. As an output, we get three values from the test: statistic value (which can be used to decide upon hypothesis when compared to the critical values), p-value and degree of freedom (number of variables that are free to vary).

Python is one of the most powerful tools when it comes to performing data science tasks, it offers a multitude of ways to perform sentimental analysis. Python offers programmers the advantage of using fewer lines of code to accomplish tasks than one needs when using older languages.

Python Code

To conduct the chi-square test we have used the language python. We have made use of scipy.stats library which provides us with chi2 contingency() function to implement Chi-square test.[9] As an output, we get three values from the test: statistic value (which can be used to decide upon hypothesis when compared to the critical values), p-value, and degree of freedom (number of variables that are free to vary)

We make use of the p-value to interpret the Chi-square test. If the p-value is less than the assumed significance value (0.05), then we fail to accept that there is no association between the variables. That is, we reject the NULL hypothesis and accept the alternate

hypothesis claim. Thus, in this case, we reject the Null hypothesis and assume a relationship between the passed data.

Chi-square test between Age and Feeling shy to talk about sex education

```
import
os

import
pandas

os.chdir("C:\Users\lenovo\Downloads")
sex_education = pandas.read_csv("People's Attitude Towards Sex
Education Among Children.csv")
categorical_col = ['Name', 'Age', 'feel shy']
chisqt = pandas.crosstab(sex_education.Age, sex_education.feel
shy) print(chisqt)
from scipy.stats import chi2
_contingency import numpy as np
chisqt = pandas.crosstab(sex_education.Age, sex_education.feel
shy, margins=True)
value = np.array([chisqt.iloc[0][0:3].values, chisqt.iloc[1][0:3
]. values, chisqt.iloc[2][0:3]. values, chisqt.iloc[3][0:3]. values
])
print(value)
```

Output

```
feel shy    No    Sometimes    Yes
Age
15-25      187         82      6
26-35       8          5      0
36-45       8          2      0
45 above    9          3      1
[[187  82   6]
 [  8   5   0]
 [  8   2   0]
 [  9   3   1]]
(3.3741827655527414, 0.7606268502739846, 6, array([[187.45980707,  81.35048232,  6.18971061],
 [  8.86173633,   3.84565916,   0.2926045 ],
 [  6.81672026,   2.95819936,   0.22508039],
 [  8.86173633,   3.84565916,   0.2926045 ]]))
```

From above, 0.7606268502739846 is the p-value, 3.3741827655527414 is the statistical value and 6 is the degree of freedom. As the p-value is greater than 0.05, we accept the NULL hypothesis and assume that people feeling shy talking about sex education and their ages are independent of each other.

Chi-square test between Age and Friendly chat on sexeducation

```

import
os
import
pandas
os.chdir("C:/Users/lenovo/Downloads")
sex_education = pandas.read_csv("People's Attitude Towards Sex
    Education Among Children.csv")
categorical_col = ['Name', 'Age', 'friendly chat' ]
chisqt = pandas.crosstab(sex_education.Age, sex_education['
    friendly chat'])
print(chisqt)
from scipy.stats import chi2_contingency
import numpy as np
chisqt = pandas.crosstab(sex_education.Age, sex_education['
    friendly chat'], margins=True)
value = np.array([chisqt.iloc[0][0:3].values, chisqt.iloc[1][0:3].
    values, chisqt.iloc[2][0:3].values, chisqt.iloc[3][0:3].values])
print(value)
print(chi2_contingency(value))

```

Output

```

friendly chat  Maybe  No  Yes
Age
15-25          55  33  187
26-35           1   1   11
36-45           2   0   8
45 above        1   1   11
[[ 55  33 187]
 [  1   1  11]
 [  2   0   8]
 [  1   1  11]]
(4.551614369228365, 0.6024642836755802, 6, array([[ 52.17041801,  30.94855305, 191.88102894],
        [  2.46623794,   1.46302251,   9.07073955],
        [  1.89710611,   1.12540193,   6.97749196],
        [  2.46623794,   1.46302251,   9.07073955]]))

```

From above, 0.6024642836755802 is the p-value, 4.551614369228365 is the statistical value and 6 is the degree of freedom. As the p-value is greater than 0.05, we accept the NULL hypothesis and assume people's thought on having a friendly chat on sex education and their ages are independent of each other.

Chi-square test between Age and Physiological changes during Development stage

```
import
os import
pandas
os.chdir("C:/Users/lenovo/Downloads")
sex_education = pandas.read_csv("People's Attitude Towards Sex
    Education Among Children.csv")
categorical_col = ['Name', 'Age', 'development stage' ]
chisqt = pandas.crosstab(sex_education.Age, sex_education['
    development stage'])
print(chisqt)

from scipy.stats import chi2_contingency
import numpy as np
chisqt = pandas.crosstab(sex_education.Age, sex_education['
    development stage'], margins=True)
value = np.array([chisqt.iloc[0][0:3].values, chisqt.iloc[1][0:3].
    values, chisqt.iloc[2][0:3].values, chisqt.iloc[3][0:3].values])
print(value)
print(chi2_contingency(value))
```

Output

```
development stage  Maybe  No  Yes
Age
15-25                10   3  262
26-35                 1   1   11
36-45                 0   0   10
45 above              2   0   11
[[ 10   3  262]
 [   1   1   11]
 [   0   0   10]
 [   2   0   11]]
(9.743854094623325, 0.13586162221371778, 6, array([[1.14951768e+01, 3.53697749e+00, 2.59967846e+02],
 [5.43408360e-01, 1.67202572e-01, 1.22893891e+01],
 [4.18006431e-01, 1.28617363e-01, 9.45337621e+00],
 [5.43408360e-01, 1.67202572e-01, 1.22893891e+01]]))
```

From above, 0.13586162221371778 is the p-value, 9.743854094623325 is the statistical value and 6 is the degree of freedom. As the p-value is greater than 0.05, we accept the NULL hypothesis and assume that people's age and their thought on informing the child about the physiological changes during each development stage are independent of each other.

Chi-square test between Marital status and media or movies role in sex education

```
import
os import
pandas
os.chdir("C:/Users/Ienovo/Downloads")
sex_education = pandas.read_csv("People's Attitude Towards Sex
    Education Among Children.csv")
categorical_col = ['Name', 'Maritalstatus', 'Medias' ]
chisqt = pandas.crosstab(sex_education.Maritalstatus, sex_education
    [ 'Medias'])
print(chisqt)
from scipy.stats import chi2_contingency
import numpy as np
chisqt = pandas.crosstab(sex_education.Maritalstatus,
    sex_education[ 'Medias'], margins=True)
value = np.array([chisqt.iloc[0][0:5].values, chisqt.iloc[1][0:5].
    values])
print(value)
print(chi2_contingency(value))
```

Output

```
Medias      Likely  Neutral  Unlikely  Very Likely  Very Unlikely
Maritalstatus
Married      16      9      6      6      1
Unmarried    71     141     28     25     8
[[ 16  9  6  6  1]
 [ 71 141 28 25  8]]
(10.914601069540785, 0.02754073278023193, 4, array([[ 10.63022508,  18.32797428,  4.15434084,  3.78778135,
  1.09967846],
 [ 76.36977492, 131.67202572,  29.84565916,  27.21221865,
  7.90032154]]))
```

From above, 0.02754073278023193 is the p-value, 10.914601069540785 is the statistical value and 4 is the degree of freedom. As the p-value is lesser than 0.05, we accept the alternate hypothesis and assume that marital status of people and their opinion about the role of medias or movies on sex education are dependent of each other.

Chi-square test between residence and information about sex education by themselves

```
import
os import
pandas
os.chdir("C:/Users/lenovo/Downloads")
sex_education = pandas.read_csv("People's Attitude Towards Sex
    Education Among Children.csv")
categorical_col = ['Name', 'Residence', 'information' ]
chisqt = pandas.crosstab(sex_education.Residence, sex_education[ '
    information' ])
print(chisqt)
from scipy.stats import chi2_contingency
import numpy as np
chisqt = pandas.crosstab(sex_education.Residence, sex_education[ '
    information' ], margins=True)
value = np.array([chisqt.iloc[0][0:5].values, chisqt.iloc[1][0:5].
    values])
print(value)
print(chi2_contingency(value))
```

Output

From above, 0.7992319741062615 is the p-value, 1.653024804324173 is the statistical value and 4 is the degree of freedom. As the p-value is greater than 0.05, we accept the NULL hypothesis and assume that people's residence and their finding information about sex education by themselves are independent of each other.

Findings And Suggestions

After analyzing the data received through Google Forms, we found that;

Among 311 respondents, 88.4% fall within the 15-25 age group, 63% reside in rural areas, and 87.8% are unmarried.

A striking 99.4% believe in the importance of imparting sex education to children, with a consensus that the suitable age for this education is between 10-15.

Encouragingly, 68.2% express no hesitation in discussing sex education, while 29.6% admit occasional shyness.

The preferred sources for discussing sex education are parents or caregivers, followed by teachers, school counselors, or nurses.

Notably, 217 out of 311 respondents favor a friendly chat over a lecture when it comes to sex education.

The data highlights a minimal 2.6% belief that parents are actively involved in providing sex education.

The majority agrees that informing children about physiological changes during each developmental stage is the preferred approach.

Using Python the major findings are the following;

There is no significant dependence between individuals feeling shy about discussing sex education and their respective ages.

The inclination of individuals to engage in a friendly conversation about sex education is not dependent on their age.

The marital status of individuals is linked to their opinions on the role of media or movies in sex education.

The place of residence for individuals and their ability to find information about sex education independently are not dependent on each other.

There is no apparent dependence between individuals' ages and their views on informing children about physiological changes during each developmental stage.

The important Suggestions are;

1. Implementing sex education is crucial, commencing from primary school and progressing with age-appropriate topics throughout high school. The curriculum should cover life skills, reproductive health, safe sex, pregnancy, and STDs, including HIV/AIDS.
2. Ideally, sex education should be a continuous part of the educational journey, starting from preschool and extending to the higher secondary level in a sequential manner.
3. Establish a professional team, including the biology teacher, a visiting faculty member, a student counselor or school social worker, and a doctor, to effectively deliver sex education.
4. Actively involve parents in the process of imparting sex education to students.
5. Each school should tailor the sex education curriculum, considering the socio-cultural factors of the region and addressing the specific needs of both the school and its students.
6. Collaborative efforts from parents, teachers, social workers, politicians, administrators, and medical professionals are essential to ensure that adolescent transitions are supported through education and empowerment, minimizing medical, social, or psychological challenges during the shift to adulthood.

CONCLUSION

Engaging in conversations about sex education, though often uncomfortable, is imperative within a responsible and secure environment. The escalating challenges posed by HIV/AIDS, RTIs/STIs, and teenage pregnancies underscore the pressing need for comprehensive sex education. Moving beyond the fundamentals of puberty and bodily changes, sex education offers a holistic understanding of one's body, empowering individuals to navigate and resist unwanted sexual activities. Extensive research consistently highlights the positive impact of accurate and age-appropriate sex education, emphasizing its role in mitigating risks associated with human sexuality. By mentally and emotionally preparing children for the natural changes their bodies undergo, sex education emerges as a pivotal force in cultivating a healthier and more informed generation. In essence, fostering an open dialogue around sex education is not just essential; it is an investment in the well-being and resilience of future generations.

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