

A Study to Evaluate the Effectiveness of the Instructional Program of the Swine Flu Program for High School Students in Selected Schools

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Abstract: Communicable diseases are illnesses transmitted from an infectious agent to susceptible hosts, either directly or indirectly through intermediaries like vectors or the environment. In our country, diseases such as typhoid, cholera, malaria, chickenpox, and tuberculosis remain prevalent, alongside emerging threats like chikungunya, dengue, and H1N1 influenza. This study evaluates the impact of a planned teaching program on the knowledge of swine flu among high school students. A quasi-experimental design was utilized, involving a pre-test, the implementation of a teaching program, and a post-test conducted on the eighth day following the intervention. Sampling Sixty high school students were randomly selected for the study. A structured questionnaire was developed to assess students' knowledge about swine flu. Demographic analysis showed that 41.7% of participants were 14 years old, with an equal distribution of male and female students (50% each). Most students were Hindu (73.3%), lived in rural areas (58.3%), and resided in nuclear families (73.3%). None had been vaccinated against swine flu, and 31.7% received information about it from family members. The mean knowledge score improved from 53.12% in the pre-test to 77.75% in the post-test. Mean scores increased from 21.25 to 31.10. Statistical analysis using the Paired-'t' test confirmed significant knowledge gains ($p < 0.05$). Chi-square tests showed no significant associations between demographic variables and mean knowledge scores, except for gender in the pre-test and religion in the post-test. The study demonstrates that the planned teaching program significantly enhanced students' knowledge of H1N1 (swine flu), underscoring its effectiveness in educational interventions.

Keywords: Communicable Diseases, Swine Flu, H1N1 Influenza, High School Students Planned Teaching Program, Public Health Education

1. Introduction

Communicable diseases, caused by specific pathogens, can spread from reservoirs to susceptible hosts through direct or indirect transmission, including via vectors or the environment. Notable examples include typhoid, cholera, malaria, and tuberculosis. Recently, diseases like chikungunya, dengue, and H1N1 influenza have also posed significant public health concerns. H1N1 influenza, commonly known as swine flu, emerged as a severe respiratory illness in 2009. Initially identified in the U.S., Mexico, and Canada, it is transmitted through respiratory droplets from coughing and sneezing, and it can spread from person to person. Unlike typical seasonal flu, H1N1 can cause more severe symptoms, including vomiting and diarrhea. The outbreak of this virus quickly escalated into a global pandemic, prompting the World Health Organization to declare it as the first pandemic of the 21st century. Despite its severity, H1N1 does not spread through food, and proper cooking of pork is safe. Vaccination remains a key measure to control the spread, but preparedness and awareness are crucial. In India, the pandemic has highlighted gaps in public knowledge and health infrastructure, emphasizing the need for enhanced educational efforts to address these challenges.

2. Methods

This study employed an evaluative approach with a quasi-experimental design, featuring a pre-test, a planned teaching

program, and a post-test conducted on the 8th day. Conducted in selected high schools, the study involved a sample of 60 students chosen through simple random sampling.

Table 1: Component-Wise Comparison of Pre-Test and Post-Test Knowledge Scores with Percentage Enhancement, N=60

Component	Pre-Test Mean Score	Post-Test Mean Score	Percentage Enhancement
Meaning, Definition & Types	2.91 (58.20%)	4.10 (82.00%)	32.8%
Incidences Risk Group & Epidemiological Features	4.51 (56.37%)	6.28 (78.50%)	22.13%
Clinical Features & Diagnosis	2.58 (51.60%)	3.80 (76.00%)	24.4%
Medications & Vaccines	5.05 (50.50%)	7.93 (79.30%)	28.8%
Prevention & Complications	6.18 (51.50%)	8.98 (74.83%)	23.33%
Overall Knowledge	21.25 (53.12%)	31.10 (77.75%)	24.63%

3. Result

The study reveals that the participants, high school students aged 16 to 18 (mean age = 16.85 years, SD = 0.819), exhibited a range of knowledge scores in both the pre-test and post-test

assessments. Initially, their overall pre-test knowledge scores ranged from 14 to 31, with a mean of 21.25 (SD = 4.56). Post-test results demonstrated a significant improvement, with scores ranging from 23 to 40, a mean of 31.10 (SD = 4.07).

Component-Wise Pre-Test Knowledge Scores: Analysis of pre-test knowledge across different components is as follows:

1. **Meaning, Definition & Types:** The mean score was 2.91 (SD = 1.12), translating to 58.20% of the maximum score.
2. **Incidences Risk Group & Epidemiological Features:** The mean score was 4.51 (SD = 1.43), equivalent to 56.37% of the maximum score.
3. **Clinical Features & Diagnosis:** The mean score was 2.58 (SD = 0.86), representing 51.60% of the maximum score.
4. **Medications & Vaccines:** The mean score was 5.05 (SD = 1.64), which is 50.50% of the maximum score.
5. **Prevention & Complications:** The mean score was 6.18 (SD = 1.75), equating to 51.50% of the maximum score.

Overall, the pre-test mean knowledge score was 21.25 (SD = 4.56), representing 53.12% of the maximum score.

Component-Wise Post-Test Knowledge Scores: In the post-test, the knowledge scores were as follows:

1. **Meaning, Definition & Types:** The mean score increased to 4.10 (SD = 0.79), which is 82.00% of the maximum score.
2. **Incidences Risk Group & Epidemiological Features:** The mean score rose to 6.28 (SD = 1.37), equivalent to 78.50% of the maximum score.
3. **Clinical Features & Diagnosis:** The mean score improved to 3.80 (SD = 1.02), representing 76.00% of the maximum score.
4. **Medications & Vaccines:** The mean score increased to 7.93 (SD = 1.56), or 79.30% of the maximum score.
5. **Prevention & Complications:** The mean score was 8.98 (SD = 1.89), which is 74.83% of the maximum score.

The overall post-test mean knowledge score was 31.10 (SD = 4.078), reflecting 77.75% of the maximum score.

The analysis of the percentage enhancement in knowledge scores from pre-test to post-test shows:

- 1) **Meaning, Definition & Types:** An increase of 32.8%.
- 2) **Incidences Risk Group & Epidemiological Features:** An increase of 22.13%.
- 3) **Clinical Features & Diagnosis:** An increase of 24.4%.
- 4) **Medications & Vaccines:** An increase of 28.8%.
- 5) **Prevention & Complications:** An increase of 23.33%. The overall knowledge enhancement was 24.63%.

4. Conclusions

The study highlights a significant enhancement in high school students' knowledge after the intervention, with an overall increase of 24.63% in mean scores. Notable improvements were observed in "Meaning, Definition & Types" (32.8%) and "Medications & Vaccines" (28.8%), demonstrating the effectiveness of the educational program. Statistical analysis confirmed these changes as significant ($p \leq 0.05$). The results suggest that the intervention effectively increased students' understanding of the subject, indicating that similar educational strategies could be valuable for improving knowledge in other areas.

5. Recommendation

Future research should explore the long-term retention of knowledge gained from such educational interventions and its impact on health behaviors. Investigating diverse instructional methods and their effectiveness in various

educational settings could provide deeper insights. Additionally, expanding studies to include different health topics and broader populations would help assess the generalizability of the findings and refine strategies for more effective health education.

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