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Fostering Flu Vaccination in Healthcare Workers: Forum Theatre in a University Hospital

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Background: The World Health Organization recommends flu vaccination as the most effective way to prevent the disease and its severe outcomes and has established the minimum vaccination coverage for people at risk at 75%. Even though healthcare workers (HCWs) represent a strongly recommended target group for flu vaccination campaigns, the average coverage among them is still inadequate. In flu season 2015/2016, our University Hospital tested Forum Theatre (FT) as a new participative strategy to foster HCWs engagement regarding flu vaccination. The aim of this study was to evaluate HCWs' satisfaction with and perceived utility of FT.





Material/Methods: In 2015, five FT sessions were organized in hospital units which were considered at risk for flu based on the type of admitted patients. After each session, participants were asked to complete an assessment questionnaire. The χ^2 test or the *t*-test was used to compare the proportion of participants who were satisfied with the FT and considered it useful (utility score). Data was analyzed according to gender, profession, and age.

Results: In all, 16.5% of HCWs who worked in four out of five of the units identified, participated in the FT sessions. Questionnaire results indicated that 74% of spectators were satisfied with their experience and 70% considered this methodology a useful approach for other health issues. Gender, age, and profession did not influence satisfaction or utility scores.

Conclusions: Participative strategies such as FT represent an innovative solution to increasing HCWs' awareness of the importance of flu vaccination and could positively impact their adherence to vaccination recommendations. FT can also be a meaningful HCW teaching tool for learning about and changing attitudes toward other clinic and public health issues.

MeSH Keywords: **Immunization • Infectious Disease Transmission, Professional-to-Patient • Influenza Vaccines • Power (Psychology)**

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Background

Every year, epidemic influenza affects approximately 5–10% of the general adult population, leading to about 3–5 million cases of severe illness and 250,000–500,000 deaths worldwide [1]. In Italy, during flu season 2015/2016, the cumulative incidence was 82 cases/1,000 people with 32 reported laboratory-confirmed deaths [2]; the total economic burden of the disease, including direct and indirect costs was around 2.86 billion euros [3].

The World Health Organization (WHO), in addition to the Italian National Plan of Prevention 2016-2018, recommend flu vaccination as the most effective way to prevent the disease and its severe complications and outcomes, and has established a minimum vaccination coverage of 75% for some categories of people considered at risk, such as pregnant women, children aged six months to five years, the elderly (≥ 65 years of age), individuals with chronic medical conditions, and health-care workers (HCWs) [3,4].

In particular, HCWs are a critical target for flu vaccination campaigns as they have a relevant role in spreading influenza virus to vulnerable patients (e.g., the elderly, people with congenital or acquired immunodeficiency, patients on steroid therapy, patients with cancer, and patients recently transplanted); in addition, their absence at work can negatively impact health system responsiveness during periods with an increased assistance demand [4–6].

Despite these recommendations, the European average coverage of flu vaccination among HCWs is inadequate (28%) and the Italian average coverage is even substantially lower (15%) [7]. Recently, international and national health organizations have called for new tailored and engaging approaches to improve flu vaccination coverage among the general population and especially among HCWs [8].

For this reason, during the flu season of 2015/2016, the Public Health Institute of the Università Cattolica del Sacro Cuore, in collaboration with the Hospital Health Management of the Gemelli Teaching Hospital Foundation, tested Forum Theatre (FT) as a new strategy to foster HCWs engagement and empowerment regarding vaccination against the flu.

FT was introduced in the 1970s by Brazilian playwright and director Augusto Boal as a means of dialogue and problem solving designed to promote social and political change. This theatre model is a component of a larger dramatic system called Theatre of the Oppressed [10].

The distinctive feature of FT is active participation of the audience, called “spect-actors”, where participants are involved in the plot and encouraged to suggest different resolution for the play, and even encouraged to directly come on stage and act [9].

FT and other theatrical methods have recently been used in health promotion [10,11], health management [12], ethical discussion [13,14], health education [15], and nurse and medical education [16–19], both in communities and hospital settings. Nevertheless, to our knowledge FT has never been applied to health promotion tailored to HCWs in the field of immunization, especially flu vaccinations among health personnel.

The aim of our intervention was to increase HCWs’ awareness about the importance of flu vaccinations, empower them regarding their role in prevention of nosocomial influenza, and finally to improve immunization coverage. This study presents data on HCWs’ satisfaction and perceived utility of FT sessions.

Material and Methods

According to the FT methodology, a preliminary cause analysis of low vaccination coverage among HCWs was performed by a working staff composed by six resident doctors of the Public Health Institute and two nurses of the Hospital Health Management Office in Gemelli Teaching Hospital Foundation; the same staff also played the role of actors in the FT sessions.

In order to identify the principal issues to address and to build the structure of the FT plot, 10 HCWs belonging to six different healthcare units were interviewed between June 2015 and July 2015. Interview questions concerned topics such as trust in health authorities, general relationship with vaccinations, opinions about mandatory or recommended vaccinations, and the perceived influence of media on personal opinions. In addition, images analogically associated with terms like “influence” or “immunity”, as well as risk perception and perceived responsibility as a cause of spreading of the virus among weaker patients were reviewed.

Five training sessions occurred between September 2015 and October 2015. In the first two training sessions, the staff collaborated in developing FT plots, shaping characters, and establishing the storyline. Most of the viewpoints and opinions that emerged during the interviews were taken into account to develop the final scenario. The other three sessions were used to train actors, using different structured exercises like warm-up exercises, team-building games, and “image theatre”, a series of introspective exercise for breaking the mind-body dichotomy [20].

At the end of this process, the plot concerned flu nosocomial infection and issues related to missed prevention and had the following storyline: “A resident doctor unconcerned with his/her initial flu symptoms, carried on with his/her hospital activity and infected an older immunocompromised patient resulting in serious consequences to the patient’s health. A debate

Table 1. Participation rate, satisfaction and perceived utility for each involved care unit.

	N	Participation rate	Mean age	Gender	% Physicians	Participants declaring high satisfaction	Participants declaring "useful" or "extremely useful" the FT approach
Unit 1	86	11 (12.8%)	37.4	F 72.7%	54.5%	9 (81.8%)	9 (81.8%)
Unit 2	86	9 (10.5%)	52.5	F 88.9%	11.1%	4 (44.4%)	3 (33.3%)
Unit 3	29	4 (13.8%)	39.7	F 100%	75.0%	4 (100%)	4 (100%)
Unit 4	102	26 (25.5%)	34.4	F 53.8%	80.8%	20 (79.9%)	19 (73.1%)

ensued between the head physician, resident doctors, and nurses of the hospital unit concerning the importance of vaccination as a mean of disease prevention, and the different opinions and reasons of the medical staff were presented."

Each FT session was planned to last about 60 minutes and to be composed of different learning moments. First, a sort of facilitator, called Jolly, had the task of introducing the FT to the audience by describing the rules and session length, and proposing some warm-up exercises, as described by Augusto Boal [20]. After the first 10 minutes of performance, Jolly guided the audience to a collective analysis of the scene asking them what the major concern was, if it seemed like a real everyday challenge, and what were other possible HCW choices to consider. Then the scene was repeated a second time. During the second time "spect-actors" could stop the scene at various moments and ask for suggestions to replace a character or propose a new solution to the problem. This second play could thus change at any time with many possible endings, depending on suggestions from the audience.

The whole FT process was designed to be dialectic rather than didactic, following the concept that people always have something to teach others or learn from each other in a democratic process of collective learning [21].

Between October 2015 and December 2015, the Hospital Health Management organized FT sessions involving HCWs belonging to five units randomly selected among those considered at risk because of the type of patients admitted (at higher risk of acquiring influenza and developing complications).

HCWs were invited by means of posters, email reminders, and advertisings from the A. Gemelli Foundation press office.

After every session, participants received an anonymous questionnaire concerning age, gender, department, profession, level of satisfaction about participating at the FT (satisfaction) and perception concerning the possible use of this methodology in order to address further health issues (utility). The last two

questions were assessed using a 5 points Likert Scale (not at all; slightly; moderately; very; extremely).

Data analysis

Baseline descriptive statistics (absolute and relative frequencies or mean and standard deviations as appropriate) for each variable were presented.

Outcome variables, i.e., satisfaction and utility, were dichotomized as "no" (not at all; slightly; moderately) and "yes" (very; extremely). The χ^2 test was used to compare satisfaction and perceived utility between gender and among professions. Age differences in the same variables were evaluated by the mean of unpaired *t*-test.

Statistical significance was defined as $p < 0.05$. Statistical analysis was performed using IC Stata 14 for Mac (StataCorp, College Station, TX, USA).

Results

The FT attracted four out of five selected units, with a participation rate ranging from 10% to 25.5% (Table 1). One of the invited units did not participate at all.

A total of 50 HCWs, 16.5% of the working staff of the four involved units, participated in the FT sessions. In particular, 31 of them (62%) were physicians (including 17 resident doctors), 15 (30%) were nurses, 4 (8%) were other health assistants (social health workers, technical assistance operators); the mean age was 38.8 ± 11.8 years old and 68% were women (Table 1.)

At the end of each session, all participants responded to the questionnaire; and 74% (95% CI: 55–81%) of spectators were satisfied about the FT experience. Of those who were interviewed, 70% (95% CI: 60–85%) considered the FT methodology a useful approach for other health issues. Gender, age, and profession did not influence satisfaction or utility scores.

Participation rate, satisfaction, and utility for each involved care unit are shown in Table 1.

Discussion

To the best of our knowledge, this is the first attempt to apply the FT methodology to a health promotion intervention tailored to HCWs and aimed at increasing their awareness of the importance of flu vaccination. Most of the participants were “very satisfied” or “extremely satisfied” and the majority of them thought that FT could be useful or extremely useful for other health issues; such as those reported in other studies [22–24].

A higher proportion of “very satisfied” or “extremely satisfied” HCWs belonged to units in which some complicated hospital-acquired flu infections occurred during the last flu season. This aspect clearly emerged during the dialogical moments of the FT sessions, where HCWs declared that their previous experience with hospital-acquired flu infections increased their awareness of and sensitivity to the topic.

One limitation of this study was the participation rate for the FT sessions, and this could be related to organizational issues due to work shift schedules. This kind of engaging interventions can be considered too demanding in terms of time and involvement and thus it stands to reason that most HCWs considered it as an additional effort to their routine burden of work. Nevertheless, it should be noted that despite all HCWs of the selected units having been invited, it is reasonable to estimate that only 50% of these professionals were actually in service during the FT sessions.

In addition, even if all unit heads were involved from the beginning in organizing and distributing invitations to the FT sessions, the attendance variability could be also related to heterogeneous models of leadership, commitment, or work climate among different units.

Finally, non-formal approaches, and in particular FT, are not commonly implemented in Italian HCWs education and consequently could be perceived as less important [25]. However, this kind of approach has been demonstrated as fundamental for a comprehensive curriculum for healthcare professionals, especially in improving soft skills such as communication, team building, and empathy [16,26,27].

The dialectic and engaging approach of FT in our study created a communication channel among involved HCWs, increasing personnel awareness about vaccinations. In fact, during the discussion on organizational issues that could potentially influence vaccination coverage, HCWs proposed organizing vaccination sessions in their units during daily activities in order to fill the gap between the willingness to be vaccinated

and its enactment. The Hospital Health Management accepted this suggestion and offered on site vaccinations to operators in many departments. This process led to an organizational change based on a bottom-up approach with additional desirable positive effects on flu vaccination coverage among HCWs; as has been highlighted in other works [28].

This study has a number of limitations, but also several strengths. This is a first experience with the application of a new methodology to health promotion among HCWs. For this reason, FT was limited to few sessions in one teaching hospital. Furthermore, the lack of similar previous studies did not allow us to define shared criteria and indicators for assessment. All these things limit the generalization of our findings. The latter may also be undermined by the voluntary participation in FT that may have determined the selection of HCWs already sensitized to vaccination issues. Nevertheless, these sensitized HCWs may be a precious resource becoming “peer educators” and spreading knowledge on flu vaccination among their colleagues. Finally, the questionnaire used to evaluate the satisfaction and the utility was not validated through a rigorous process; however, it was based on the Likert scale, which is frequently used for this purpose, and represented a non-invasive way to collect the overall judgment of participants.

This study highlights the importance of new participative approaches to health promotion; the role of audience “activation” and the shift from an un-informed HCW to a conscious HCW could thus be the key component to changing a HCW’s mind set [9].

New proposals and innovating communication strategies in healthcare and health prevention are strongly recommended by national and international health authorities [7,8,28].

Considering the recent decrease in vaccination coverage in several developed countries, immunization represents one of the fields that could benefit from such approaches. This intervention can be considered one of the tools for a new strategy to strengthen HCWs’ perception of the importance of flu vaccination, and reduce the burden of hospital-acquired influenza.

Other experiences of participative practices like FT should confirm our findings, and other studies would increase the knowledge about their relevance in vaccination promotion among health professionals. To this purpose, further studies should be designed to assess, in particular, the effectiveness and the cost effectiveness of participative methods on flu vaccination coverage.

Conclusions

International recommendations ask for an improvement of flu vaccination coverage among HCWs because of their important

role in nosocomial transmission of the virus, especially among weak and immunocompromised patients [3,4].

Participative strategies can be an innovative solution to increase awareness of the entire workforce regarding the importance of flu vaccination, resulting in augmented patient safety [8]. FT, being adaptable to the specific context in which it is used, can be a meaningful teaching tool also applicable to HCWs' education and attitude changing with regards to other clinical and public health issues.

This experience can be considered a first step towards a cultural change that now more than ever is a driver for strengthening population prevention attitudes and immunization outcomes.

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Conflict of interests

The authors declare that they have no competing interests.