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Evaluation of an Educational Intervention Program Designed to Increase Vaccination Attitude in Prison Setting: Results from the RISE-Vac Project

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INTRODUCTION

Prison population is particularly vulnerable to communicable diseases, including vaccine-preventable infections [1], due to various factors such as low social distancing, high turnover rates, and a high proportion of migrants [2]. However, vaccination coverage among people living in prison (PLP) remains low, largely due to limited access to healthcare services, low levels of vaccine literacy and general health literacy [3]. Additional challenges include persistent vaccine hesitancy and widespread distrust in institutions.

OBJECTIVES

As part of the RISE-Vac project—co-funded by the 3rd EU Health Program—we developed and implemented an evidence-based educational program aimed at boosting vaccination rates in both PLP and prison staff (PS) and evaluated the effect of the intervention on vaccine hesitancy, vaccine literacy and vaccine attitude.

METHODS

We conducted a cross-sectional non-randomised study in 24 prisons of 6 European countries. The sample included 782 PLP and 717 PS members. In participant prisons, an educational program about vaccination for preventable infection diseases was implemented; for PLP, the program consisted in the distribution of educational material (leaflet and a short video) and/or an educational event; for PS, it consisted in a 4-hours online course. Within the study sample, 387 from PLP (49%) and 285 from PS (40%) undertook the intervention.

Vaccine hesitancy was measured through a scale previously validated in a sub-cohort of participants – in the following referred to as pre-test [4]. A structured questionnaire was administered to measure vaccine literacy, general health literacy and socio-demographic characteristics of participants. Vaccine attitude was determined as the willingness to accept a vaccine if offered. Linear regression model was applied to assess the effect of the intervention and pre-test on vaccine and general health literacy and vaccine hesitancy. Logistic regression was applied to assess the association between the intervention and pre-test on vaccine attitude. All analyses were stratified by group (PLP and PS) and adjusted for socio-demographic variables. Mediation analysis was conducted to quantify the proportion of the effect of the intervention on vaccine attitude mediated by vaccine hesitancy, adjusting for pre-test and socio-demographic variables.

RESULTS

In both PLP and PS, the intervention was associated with higher levels of vaccine literacy and stronger associations were observed among those who undertook the pre-test (PLP: interaction between pre-test and intervention, p=0.03; intervention, p=0.005 and p<0.001 in the non-pre-test and pre-test group respectively; PS: interaction, p<0.001; intervention, p=0.02 and p<0.001 in the non-pre-test and pre-test group respectively).

In PLP, the intervention was inversely associated with vaccine hesitancy only in those who did not take part of the pre-test but not in the others (interaction, p=0.02; intervention, p<0.001 and p=0.22 in the non-pre-test and pre-test group respectively). In PS, no significant interaction was observed between the intervention and pre-test (p=0.11); the intervention was significantly associated with lower vaccine hesitancy (p=0.002).

In both PLP and PS, the intervention was significantly as-

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sociated with a positive vaccine attitude toward vaccination with no significant interaction with pre-test: in PLP, OR=5.21 (95% CI: 2.74 to 9.91); in PS OR=2.52 (95% CI: 1.54 to 4.13).

Finally, mediation analysis showed that less than 30% of the effect of the intervention on vaccination attitude was mediated by a reduction in vaccine hesitancy (24% with p<0.001 and 28% with p=0.002 in PLP and PS respectively).

CONCLUSION

Evidence-based educational interventions are effective in improving vaccine hesitancy and vaccine literacy among PLP and PS. Also, they enhance the willingness of participants to be vaccinated, through a mechanism that is only partially explained by their effect on vaccine hesitancy. Further research should be conducted to quantify the real impact of this kind of intervention on vaccine uptake in prison population.

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