

Effectiveness of the school nurse role in increasing the vaccination coverage rate: a narrative review

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Parole chiave: Infermiere scolastico, vaccinazioni, copertura vaccinale

Abstract

Introduction. Vaccinations are recognized as the best primary prevention strategy to counteract infectious diseases. However, in recent years, there has been a decrease in the immunization rate, particularly among children and teenagers. Several strategies have been tested to circumvent the issue. Among them, there was the re-introduction of vaccination practices in schools.

The literature shows that introducing immunization projects in schools has increased vaccination rates in children and teenagers, but the role of the school nurse in these settings has never been evaluated.

AIM. To determine whether the role of the school nurse, within the school vaccination projects, does have a positive impact on the rate of immunization's compliance.

Methods. Narrative review. Studies of primary, secondary and gray literature were included, researched on Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, CINAHL, Science Citation Index and Web of Science. Nine articles based on studies conducted in different educational institutions (from kindergarten to high school) were included in the review.

Results. All the articles included in the review showed that the interventions conducted by the school nurse, aimed at increasing the rate of adhesion to vaccinations, are effective.

Discussion and Conclusions. The literature related to the topic of the present study shows that the school nurse plays a key role in increasing the rate of adhesion to immunization for school-age children / adolescents. The figure of the school nurse plays a crucial role in increasing the rate of adhesion to immunization's programme for school-age children. However, in several countries, including Italy, this figure was present in the past but does not exist now. The lack of the school nurse's role in these countries does not allow the activation of programs focused on this figure's capacity.

Introduction

The Centers for Disease Control and Prevention (CDC) have indicated vaccinations as one of the ten most important public health achievements of the century. However, the rates of vaccination coverage for some of the recommended vaccines for children and adolescents is far lower than that aimed as a goal by the Healthy People 2020 project (1).

The low rate of adherence to vaccinations and the consequent return of some epidemic infectious diseases has led some States to introduce in recent years new laws to force parents to vaccinate their children (2). However, improving teenagers' immunization rates requires support from all health professionals (3).

The majority of vaccines are administered between two months to two years of age and interventions aimed to sensitize the population

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are mostly focused on this age group. On the contrary, the school-age boosters are less monitored and the consequence is a lowering of the level of adhesion to vaccinations for those children who are expected to receive booster doses (4).

Many studies have shown that projects involving the administration of vaccines within the school environment increase the rate of adherence to the vaccination calendar for adolescents and preadolescents (5-7). In 2012, out of the 174 States worldwide for which data on immunization in school-age children were available, 95 used school's support for vaccinations, with a limit in those areas with reduced school attendance (8).

Several factors that commonly influence the implementation of vaccination programs have been identified in the literature. Among these there are: leadership and organizational models; institutional relations; work expertise and roles, in particular concerning the school nurses; communication with students and parents, including the method to obtain the informed consent; clinical organization; perception of the advantages of the school setting; confidence; and parental presence (7, 9).

In 1902, in New York City, an innovative project was launched. The project saw the introduction of the figure of the school nurse, starting with the Henry Street Settlement. The work was started back in 1893 by Lillian Wald, a progressive nurse who first introduced nursing care into schools (10). Today the school nurse is a figure who stands at the crossroads between the world of care and the school community, so that she can be considered an opinion leader in providing health advice to students and parents (11). In this context, the National Association of School Nurses indicates in its position statement the central role of the school nurse in influencing vaccination decisions (12).

Purpose of this systematic review is, to determine whether the presence of the school nurse actually produces an increase in the

rate of vaccination compliance in school-age children (starting from kindergarten and up to secondary school).

Methods

Systematic review of the literature

Registration of the protocol on the PROSPERO 2018 platform: CRD42018088881. Available at the link: http://www.crd.york.ac.uk/PROSPERO/display_record.php?ID=CRD42018088881

Both qualitative and quantitative studies of primary and secondary literature were included to evaluate the effectiveness of the school's nurse role in increasing the rate of vaccination coverage in school age (from 3 to 17 years).

Studies that focused generically on vaccination projects located in the school environment without explicit reference to the role of the school nurse were excluded.

Due to resource limitations, only publications in English, French and Italian were included. The primary outcome was the rate of vaccine administration, regardless of whether they were single or multiple vaccines, required by law or simply recommended for a specific date or age.

The search in the databases took place between February and May 2018.

The search string in Medline was the following: ("school nurse"[All Fields] OR "school nurses"[All Fields]) AND ("Immunization Programs"[Mesh] OR "Immunization Programs"[All Fields] OR "Immunization"[Mesh] OR "Immunization"[All Fields] OR "Vaccination"[Mesh] OR "Vaccination"[All Fields] OR "Immunizations"[All Fields] OR "Vaccinations"[All Fields] OR "Immunization Program"[All Fields]) AND (English[lang] OR French[lang] OR Italian[lang]).

The keywords identified were then adapted for search in each database.

Databases used

The databases consulted were: Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, CINAHL, Science Citation Index and Web of Science. In order to identify any studies not included in the indexed literature, research was also carried out among the grey literature that included: Open Gray, Gray Literature Report, Joanna Briggs Institute, National Institute for Health and Care Excellence, ClinicalTrials.gov. Finally, the bibliography articles of all included studies were evaluated.

There were no time limits.

The screening of titles and abstracts was conducted independently by two of

the authors (MGG and LD). They also subsequently verified whether the full texts of the included articles met the criteria described above. The risk of bias of the studies was assessed using the Cochrane risk-of-bias tool for randomized trials (RoB 2) and Risk Of Bias in Non-Randomized Studies-of Interventions (ROBINS-I).

Results

The MEDLINE database returned 128 studies, while 104 more were obtained from other sources, for a total of 232. Duplicates exclusion led to 131 studies: 84 were not

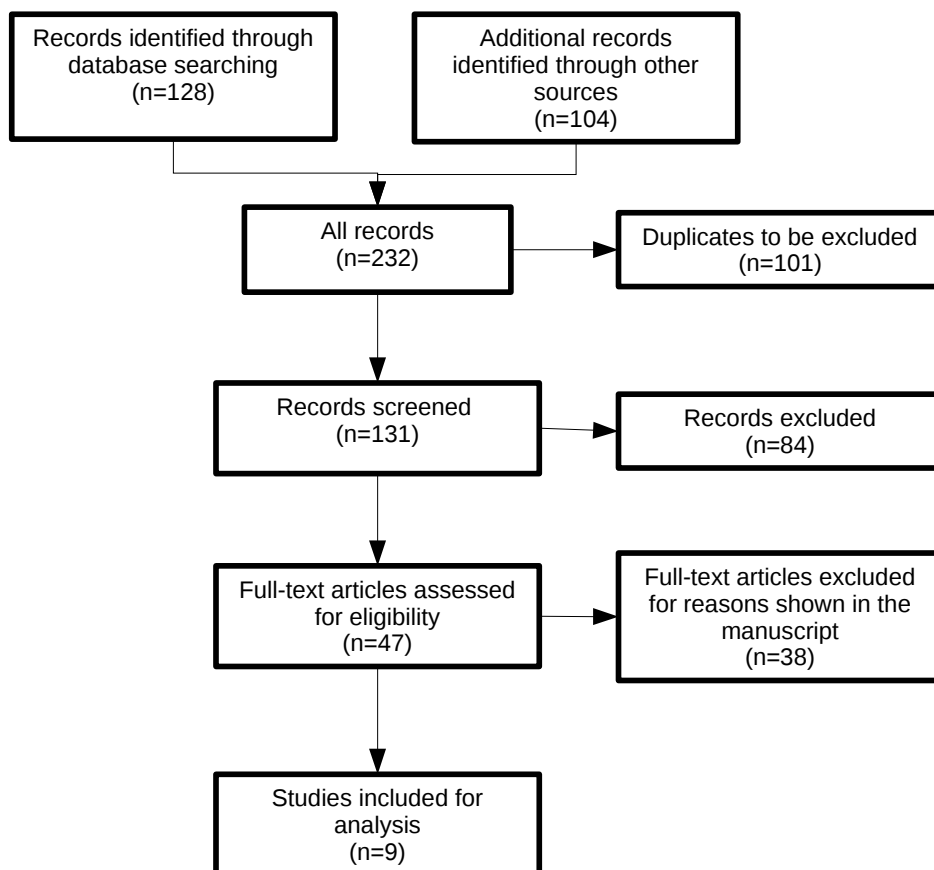


Fig. 1. Flow diagram of study inclusion.

considered relevant after reading the title and the abstract. Of the 47 articles whose full text was evaluated, 38 were excluded because they were inconsistent with the inclusion criteria. The full text of the remaining nine studies was critically evaluated. Figure 1 shows the study selection process.

Following the screening process described above, nine studies published between 1976 and 2016 were examined (Tab 1). Most of the projects have been carried out in the United States, one in Sweden and one in Australia, while the vaccines involved were in most cases the booster doses administered in the period between kindergarten and secondary school. Two studies, instead, focused on the HPV vaccine in adolescents. Two studies were Randomized Controlled Trials, while the others were quasi-experimental studies.

Vernon et al (1976) (13) evaluated three techniques aimed at increasing the rate of adherence to vaccines due in school age. The project was implemented in Denver and enrolled nine schools. Method A consisted in a more significant amount of time dedicated by the school nurse to verify the vaccination card of each student, to exclude those that did not need the vaccinations and to prepare a reminder for the parents about those who lacked one or more vaccines (required by law). The notification required the parents to sign the vaccination consent. The nurse then carried out a telephone follow-up of the parents who did not give their consent. Method B consisted of delivering notice to all students (without prior verification of their vaccination's state) and without further follow-up. Method C focused mainly on the health education program organized by the school nurse during science classes as well as in a newsletter sent to parents. Three months after the interventions, a formal letter was sent to the parents requesting the child's vaccination certificate.

This study demonstrated that, focusing on verifying the vaccination records of students

and urging the adherence of those who are not regular, the rate of adherence to vaccinations shows a significant increase.

The study by Ferson et al (1995) (14), set in some kindergartens of the New South Wales (Australia), compared two interventions used by the school nurses aimed at increasing vaccination for measles-mumps, and/or for the booster dose of diphtheria-tetanus and OPV vaccines in children who first attended school. Parents belonging to the control group received a letter of invitation and an information leaflet encouraging vaccination. The parents belonging to the intervention group received a telephone call from the school nurse in addition to the aforementioned information material. Both groups were evaluated in order to monitor the outcome of vaccine adherence.

Of the 817 children, 239 (29.3%) had missed the booster and/or measles vaccination: 143 had missed only the booster, 23 had missed only measles vaccination and 73 had missed both. Of the 239 children, 119 were randomized into the passive intervention group and 120 into the active group. The intervention group received an invitation letter, an information booklet encouraging vaccination and a phone call from the nursing school; the control team received only the letter and the package leaflet.

Excluding the children missing at the follow-up (41 in the control group and 31 in the intervention group) and those already immunized for both booster dose and MM after a control at the start of the study (24 in the control group and 40 in the intervention group), 21 children out of 55 (37%) were vaccinated in the control group and 35 out of 49 (71%) in the intervention group ($P = 0.001$). Receiving the letter and the leaflet was associated with an increase in the adherence to the booster vaccination ($P = 0.036$). The passive intervention produced an increase in the rate of immunization at a

Table 1 - Summary of characteristics of the single studies.

Title	Authors Year of publication	Nationality	Research design	Population	Vaccine	Intervention type	Results
School based intervention for the prevention of HPV among adolescents: a cluster randomized controlled study	Grandahl, Rosenblad, Stenhammar, Tyden, et Al 2016	Sweden	RCT Cluster	Students 16 years old Participants n. 751	HPV	School nurses delivered 30 min face to face structured information about hpv. Students in the intervention and in the control groups completed questionnaires at baseline and after 3 months.	The proportion of girls vaccinated in the intervention group was 52.5% before and 59% (p = 0.02) after, while no difference was observed in the control group (60.9%).
An Evidence-Based Project Demonstrating Increased School Immunization Compliance Following a School Nurse-Initiated Vaccine Compliance Strategy	Swallow, Roberts 2016	USA	Observational	Students 14 -18 years old Participants: 2012-13 n. 1834 2013-14 n. 1760 2014-15 n. 1835 2015-16 n. 1895	HBV, TdP, Measles, Polio, MMR, Varicella	School nurse initiated efforts to increase vaccination compliance using a three-step method. first step, letters were sent home with students to notify parents that the student was not compliant with immunization laws. Students who failed to receive the necessary vaccinations were then given a second letter to take home. Students who continued to fall below immunization requirements were then given a third letter to take home and phone calls were made to the parents	2012-13 coverage rate 66% 2013-14 coverage rate 95% 2014-15 coverage rate 98.2% 2015-16 coverage rate 99.6%
Increasing Immunization Compliance by Reducing Provisional Admittance	Davis 2016	USA	Observational	Students 14 -18 years old Participants n. 4437	Various	Liaisons attended a special session at an immunization conference in October 2011, where VCHIP oriented them to the goal of the project (to reduce the provisional admittance rate) and were introduced to a list of evidence-based strategies to reduce provisional admittance rates. Liaisons were also trained in The Model for Improvement	Provisionally admitted students in April (M = 11.86, SD = 11.74) was significantly lower than in November (M = 35.71, SD = 13.15).

Title	Authors Year of publication	Nationality	Research design	Population	Vaccine	Intervention type	Results
Implementation and Evaluation of a School-Based Human Papillomavirus Vaccination Program in Rural Kentucky	Vanderpool 2015	USA	Observational	Students 14-18 years old Participants n. 955	HPV	First, the nurses recommended including HPV educational materials and parental consent forms in students' back-to-school packets. Nurses also used the high schools' "One Call" telephone reminder system to contact all parents/guardians listed in the schools' student records data-base during the first month of school to inform them about the program and encourage return of consent forms; the phone system also was used to remind parents about their child's subsequent receipt of Doses 2 and 3. Additionally, nurses delivered HPV information to students and parents through an informational booth at school orientation, classroom settings, newspaper articles, school website postings, and special events (e.g., football games). Grant-funded incentives were used to increase student participation, including T-shirts, pizza and sub sandwich parties, and prize drawings	At the end of the project received the 3 doses of HPV vaccine 84% of students included in sample.
Evaluation of an Intervention Program to Increase Immunization Compliance Among School Children	Luthy 2011	USA	Observational	Students 11-12 years old Participants n. 895	Tdap	Educational and incentive program in local elementary schools	The compliance rate went from 4% (pre-intervention) to 57% (post-intervention)
Increasing Immunization Compliance	Toole & Perry 2004	USA	Observational	Kindergarten children Participants n. 2207	MMR, DtaP, polio, HBV	The SN would give the immunizations at school at no costs	The rate rose from 64% to 97%
Meeting the Preteen Vaccine Law: A Pilot Program in Urban Middle Schools	Boyer-Chuanroong 2000	USA	Studio pilota	Studenti 11 years old Participants n. 2100	HBV MMR	Two manual-video kits on school health strategies for protecting adolescents in schools	The rate rose from 45% to 71%
School Health Nurse Interventions to Increase Immunisation Uptake in School Entrants	Ferson, Fitzsimmons, Christie, and Woollett 1995	Australia	Non randomized trial	Kindergarten children Participants n. 239	m e a s u m m e s d i p h t e r i a - t e t a n u s a n d o r a l p o l i o v a c c i n e	The active intervention group received a telephone reminder from the nurse in addition to the written materials.	In the control group 37% of the children were vaccinated, in the intervention group 71%.

Title	Authors Year of publication	Nationa- lity	Research design	Population	Vaccine	Intervention type	Results
An evaluation of Three Techniques for improving Immunization levels in Elementary Schools	Vernon 1976	USA	Observational	Students 6-10 years old Participants n.5636	Various	<p>A: complete pre-clinic review of all available school immunization records; those children recorded as immunization-deficient were given notices to take home, listing the child's immunization deficiencies, announcing an immunization clinic, and requesting parents to update the record and to provide signed permission for the needed immunizations.</p> <p>B: permission slips were sent home to all children requesting parents to specify, and to grant permission for, to be administered at the clinic. No times was spent in follow-up of unreturned permission slips.</p> <p>C: health education program organized by the SN. Immunizations received emphasis in science classes and in school newsletters which were taken home to parents. Three months after initiation of the program a letter was sent to each parent requesting a list of the immunization received by the child since the health education program began.</p>	<p>Percentage of immunized students: method A = 67.3%; method B = 35.6%; method C = 2.4%</p>

minimal cost. However, a more significant increase in the result of the immunization was obtained from the active intervention with a telephone call from the school nurse. However, the active intervention was laborious and can only be justified if priority is given to the high immunization rates requested in this age group.

In 2000, Boyer-Chuanroong and Deaver (15) described a pilot program implemented in two schools in an urban district in California. California's requirement was established through California Law AB 381. Effective July 1, 1999, students entering seventh grade were required to have three doses of hepatitis B, a second dose of measles-containing vaccine, and a recommended tetanus-diphtheria booster (Td).

The hypothesis of the study was that collaboration between teachers and nurses increases the adherence to the vaccination calendar because of the motivational power that teachers have on students. The program included the viewing of an educational video; the delivery of a booklet using a colour code based on the immunization status of the students; and the delivery of a second brochure if the parents had not returned the consent form for the administration of the missing vaccines. Only 10 out of 676 (1.4%) students did not change their vaccination status. The study has, therefore, shown that the close collaboration between school nurse and teachers allows the achievement of a high level of adherence to vaccinations as required by law.

Toole and Perry (2004) (16) described a project aimed at removing the barriers encountered by students in accessing vaccination programs and at providing school nurses with the tools needed to achieve high adherence to vaccinations. The project took place in the Cincinnati School Department without costs, involving children under the age of 18, either belonging to the Medicaid Health Program or without insurance. According to the project, a team consisting of

a school nurse and two school health-support figures (school health clerks) was created. The team assessed the students' immune status twice a year. If they found a gap in the results for one or more doses of a booster vaccine (due to cost-related problems, lack of transportation, inability to access services, working commitments of the parents) the school nurse proposed vaccination without costs and the need for the active participation of the parents, but only through a written consent. Once administered, the vaccination was recorded in the electronic database of the Health Department. The implementation of this project meant that in the school year 1997-98 the rate of adherence to the planned vaccination calendar increased from 64% to 97%.

In 2011 Luthy et al (17) implemented a project in a school district in the State of Utah. The aim was to create a more effective system with an educational program and incentives to increase the rate of adherence to the booster dose of tetanus, diphtheria and acellular pertussis (Tdap). The project requested the students to be educated about their immune system, how vaccinations work, and where it is possible to be vaccinated. Furthermore, the students participating in the project were included in a prize competition where it was possible to win an iPod or a RipStick. The intervention lasted four weeks. During this time, the researchers had regular meetings with the nurses to answer questions, to evaluate the evolution of the intervention, and to correct unexpected problems.

Furthermore, school nurses were provided with a guide to build their interventions. Distribution of small prizes to teachers and the use of explanatory letters to parents were also included in the activities. Preceding the project, only 37 of 895 or 4% of sixth-grade students who were enrolled in the local school district had received their Tdap immunization. At the conclusion of the intervention, school nurses reported that 547

of 958 students or 57% had received their Tdap booster.

However, for the previous school year, the school district had a 54% compliance rate among seventh graders for the Tdap booster without the intervention, so the researchers concluded that the intervention did not significantly improve rates.

The project described in the article of Vanderpool et al (18) intended to implement and evaluate the effects of a HPV vaccination program carried out in two high schools in a rural area of south-central Kentucky. The involvement of the school nurse was to distribute information material on the Papilloma virus and the form for the informed consent to be signed by the parents and sent back to the school. The nurse was also requested to phone the parents during the first month of lessons to inform them about the project and encourage the return of the completed and signed consent. The phone call system was also used later to remind parents the appointment for the second and third dose of the vaccine. Besides, the nurse provided information about HPV to parents and students in informal stalls like the classroom, through articles in the school newspaper, posts on the website and speeches during special events. Incentives were also used to encourage students' membership, for example, T-shirts, pizza and sandwich-based parties, and lotteries. At the end of the project, the rate of vaccinated students rose from 14% to 45% (cycle of three doses concluded).

Reducing the rate of "provisional" enrolments at school, pending regularization with the vaccination cycle, was the aim of the project implemented in 10 schools in Vermont, described in the article by Davis et al (19), through the introduction of a list of actions based on scientific evidence. School nurses had the opportunity to choose, among the list of actions, which strategy they could use to implement and complete a vaccination registration system, developed for this

project. School nurses who participated in the project observed a reduction in students enrolled with a "provisional" formula, although this decrease was not significantly different from that observed in the schools that did not participate in the intervention. Despite the not significantly different results, the outcome of the project led the researchers to confirm the fundamental role played by school nurses in improving health outcomes in the school-age population.

In 2016 Swallow and Roberts (20) described a project in which the school nurse used a three-tier method to increase students' compliance. The first level was to send a home communication to high school students in Northern Indiana, to inform parents that the child was not regular with mandatory vaccinations. Following this step, a second letter was delivered to all the students who did not comply with the vaccination calendar. Finally, those who had again remained silent, received a third letter and a phone call was made to their parents. At the end of the three stages of the project, the adherence to vaccinations was 99.6%, a level exceeding both the national and the State average.

Finally, the article by Grandahl et al., (2016) (21), described a randomized cluster-controlled trial aimed at improving primary prevention of Papilloma virus by promoting immunization. The intervention was based on the model of health belief. School nurses devoted 30 minutes to give structured information on the papilloma virus in a face-to-face contact. The students, divided into intervention and control groups, completed a test at time 0 and one after 3 months. The results indicated that a specific educational intervention held by health professionals, in this case by the school nurse, is a feasible and highly effective method to increase the attitudes of the adolescent and their behaviours towards the primary prevention of HPV, beyond socio-economic status, ethnic background or cultural level.

Discussion and Conclusions

Discussions following a drop in the rate of adherence to the planned vaccinations (22), observed in Italy, as in other countries, convinced the National Health Authorities that a law had to be approved obliging parents to have their children vaccinated under penalty of exclusion from nests and nursery schools (2). This decision was followed by an increase in coverage rates (22), but many studies have shown that there are more effective alternatives to the legal enforcement to increase vaccination rates. Examples are the vaccination projects successfully implemented abroad in schools (3-6).

Coercive measures should only be justified in a situation where the benefits obtained outweigh the social damage produced (23). Understanding the processes that influence vaccination programs is a crucial element to define health strategies and policies. The identification of the success factors of these programs can support the design and implementation of more effective systems and the elimination of barriers that impact on the vaccination coverage of the population (7).

The literature analysed here was aimed at verifying whether the presence of school nurses in these projects could represent a significant experience in increasing the rate of adherence to vaccinations in the school environment.

All the available literature shows that the school nurse plays a key role in vaccination projects carried on in the school environment (13-21), although three articles (14, 17, 19) assessed that the cost of the efforts made by this healthcare worker is very high.

Despite the strong evidence in favour of the role of the school nurse, the absence of such role from some country (like Italy) and the high workload they have where this figure is present, is the limit that does not allow the school nurse to fully achieve his/

her goal. However, the analysed literature makes it possible to operate some reflections on the possibility of following alternative routes to the constraint, aimed at increasing the necessary vaccination coverage. In particular, the activities that included the evaluation of the vaccination status of students through a computerized system (13, 16), the involvement of parents (13, 14, 16, 18, 20) and teachers (15) and health education projects (17, 18, 21) are the most successful.

Despite the absence of the school nurse in our country, the analysed literature highlights how interventions could also be carried out in Italy. In particular, the studies described above show that educational activities, even those carried out by teachers, and the commitment to solicit parents through repeated invitations and phone calls, produce positive outcomes in the coverage rate. Recently, the use of apps on smartphones in rural areas, where it is difficult to involve the population using other means, has also been introduced to promote vaccination and monitor adherence to the program (24). The use of a technology called "new media" (smartphone applications and websites) in high and medium-income contexts can support the spread of vaccination culture, through communication, information sharing, networking, support, and the definition of goals and personal progress (25).

It is to be hoped that the States where the school nurse already exists, but the vaccination coverage rates among students do not reach a satisfactory percentage, concentrate further efforts to increase the involvement of the nurse.

It is necessary that, in Italy and in the other countries where the school nurse does not exist, the barriers and obstacles that determine the failure of vaccination programs should become clear and well known, to facilitate the structuring of targeted interventions. It is also of fundamental

importance to design studies that thoroughly analyse the reasons that push parents not to follow the vaccination schedule, in order to readjust efforts to the most appropriate direction.

Understanding the reasons that push parents not to respect for their children the regular vaccination schedule, a phenomenon in the literature known as “vaccine hesitancy” (delaying their administration), is the first step necessary to find appropriate answers to the phenomenon. Although there is an instrument aimed at measuring this parent's attitude (25), little work has been done to understand how to better formulate the countermoves. The “vaccine hesitancy” phenomenon is a complex concept that includes a large number of motivations which, starting from fears, leads to the extreme position of anti-vaccines activists. It is a sort of decision-making process that depends on numerous factors (cultural level, trust in institutions, relationship between health care and parents, etc) (26).

In Italy, the issue of vaccination is at the center of the debate in the political, scientific and social communities. The above literature shows that obligation to adhere is only one possible choice. The data highlight the possibility that campaigns to promote health literacy growth could drive the population to understand the importance of immunization and accept it spontaneously.

Riassunto

Efficacia dell'attività dell'infermiere nella scuola per aumentare il tasso di copertura vaccinale: revisione narrativa della letteratura

Introduzione. Sebbene le vaccinazioni siano riconosciute come migliore arma di prevenzione primaria per sconfiggere le malattie infettive negli ultimi anni si è assistito a una flessione nel tasso di adesione all'immunizzazione, in particolare tra bambini e adolescenti. Tra le strategie implementate vi è stata l'introduzione delle vaccinazioni in ambiente scolastico.

La letteratura ha dimostrato come i progetti di immunizzazione in ambiente scolastico abbiano aumentato i tassi di adesione alle vaccinazioni nei bambini e adolescenti, tuttavia non è mai stato verificato il ruolo dell'infermiere scolastico in questi percorsi.

Obiettivo. Determinare se la presenza dell'infermiere scolastico, all'interno dei progetti vaccinali in età scolare produca un aumento nel tasso di compliance alle vaccinazioni.

Metodo. Revisione sistematica che ha incluso studi di letteratura primaria e secondaria. Sono state incluse nella ricerca le banche dati Cochrane Central Register of Controlled Trials, MEDLINE, EMBASE, CINAHL, Science Citation Index and Web of Science; anche letteratura grigia è stata indagata. La ricerca è avvenuta nel periodo tra febbraio e maggio 2018.

Risultati. Sono stati inclusi nella revisione nove articoli basati su studi condotti prevalentemente negli Stati Uniti in diversi livelli di istituti scolastici (dall'asilo sino alle scuole superiori). Due delle nove ricerche erano RCT, gli altri studi di tipo quasi-sperimentale. Tutti gli articoli inclusi nella revisione hanno mostrato che gli interventi condotti dall'infermiere scolastico, finalizzati all'incremento del tasso di adesione alle vaccinazioni, hanno efficacia.

Discussione e conclusioni. La letteratura relativa all'argomento mostra che l'infermiere scolastico può giocare un ruolo chiave nell'aumento del tasso di adesione alle vaccinazioni. In Italia e negli altri paesi in cui non esiste l'infermiere scolastico, è necessario implementare strategie che emergono dai presenti studi quali l'introduzione di progetti educativi nelle scuole e maggiore attenzione a solleciti scritti e telefonici ai genitori.

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