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Cross-sectional study on knowledge of health care workers about Ebola Virus Disease and its prevention: a pilot study in two hospitals in Rome (Italy)

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Key words: Ebola virus disease, Health care workers, Knowledge, Questionnaire
Parole chiave: Malattia da virus Ebola, Operatori sanitari, Conoscenza, Questionari

Abstract

Objectives: *To carry out a pilot study aimed: a) to define and validate a method to evaluate Health Care Workers' (HCWs') knowledge about Ebola virus disease (EVD); b) to verify if the specific training on EVD followed in Emergency Units is associated to a significant difference in knowledge.*
Methods: *A cross-sectional study was carried out using an "ad hoc" questionnaire. It included 20 statements true/false, divided into three areas: risk of transmission (T); prevention and personal protection (PPP); environmental prevention (EP). The targets were the HCWs of Emergency Unit (trained) and Internal Medicine Units (control) of two hospitals in Rome (A and B). Internal consistency was evaluated using KR-20 coefficient. A proportion of 14/20 (70%) correct answers was considered acceptable. Mean scores and acceptable scores were compared using t-Student test and chi-squared test respectively. A logistic regression was fitted to identify independent factors associated with acceptable knowledge level for the whole questionnaire and each area.*
Results: *237 HCWs were included in the pilot study, with a participation percentage of 89.1%. The reliability coefficient (KR-20) was 0.6 for the entire 20-item questionnaire. Overall proportion of respondents with acceptable score was 32.9%; the highest proportion (61.1%) was found in trained HCWs ($p<0.02$). Factors associated with an acceptable knowledge were: belonging to hospital A ($p<0.001$) and having been trained on EVD ($p=0.03$). Stratifying by area, the variables significantly related to an acceptable score were: for PPP area younger HCWs ($p<0.01$) and nurses ($p<0.01$); for EP area, belonging to hospital A ($p<0.01$) and to Internal Medicine Unit ($p=0.02$).*
Conclusions: *The high compliance and completeness of the responses indicate the validity of the method of administration adopted. In the investigated hospitals the specific training on EVD determined a significant overall improvement in knowledge. It will be appropriate to extend the study to other hospitals around the Country to evaluate the true effectiveness of the training in a larger sample of hospitals.*

Introduction

In December 2013, an Ebola Virus (EV) outbreak began in Western Africa, spreading intensely to the countries of Guinea, Liberia, and Sierra Leone. As of December 13, 2015, the number of cases of Ebola Virus Disease (EVD) (suspected, probable and

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confirmed) had risen to 28,604 with 11,300 deaths (1).

Health Care Workers (HCWs) are a crucial component of any response to EVD and in too many cases HCWs themselves became victims of this disease. Therefore efforts to ensure proper infection prevention and control measures are critical.

In the last year several investigations have been performed in order to evaluate knowledge and training needs about EVD around the world. These investigations regarded knowledge and risk perception of the general population (2-5), the pilgrims (6), the airport workers (7) and the preparedness of institutions for managing patients with EVD (8, 9).

Few studies investigated HCWs' knowledge, attitudes and practices about EVD, but most of these studies come from developing countries (10-13). A common finding in these studies is a discrepancy between knowledge on EVD and related preventive practices (10, 12); this result has also been observed in other studies in the past (14). In addition, only few of the questionnaires used are metrically evaluated regarding knowledge and preventive practices about EVD.

Recently Fazekas et al. (15) performed a similar study in England, investigating on awareness among junior doctors about EVD. This appears to be the first attempt to quantitatively evaluate the level of understanding among medical staff in England. The results showed a lack of knowledge about EVD among junior doctors. The limit of the study is the relatively small sample size, both in terms of the number of doctors involved [119] and participating hospitals [only 4]. However, the results are similar to those observed in comparable investigations with similar (16) or different targets (13, 14, 17-19) and larger sample size (17).

Patino-Barbosa et al. (13), in a survey on HCWs and medical students, observed a significant increase in the proportion of correct answers about EVD after they attended a symposium on this topic. Obviously, as argued by the authors, information and educational tools contribute to improve knowledge about EVD in the short term, but it is not clear whether this knowledge is retained in the longer term.

The study by Oladimeji et al. (12) in Lagos investigated knowledge and practices about EVD among various categories of HCWs. The results, obtained from 637 HCWs of 110 health facilities, showed a probability 3.7 times higher to have a good knowledge on EDV and 7.5 times higher to perform good practices in trained HCWs compared to those untrained, but, at the same time, the study showed a wide discrepancy between knowledge of EVD and practices to reduce the risk of transmission of EV in healthcare facilities.

In both studies (12, 13) training about EVD was crucial for good practices of standard health precautions and infection control.

Italy is a country at low risk for EVD, nevertheless, in the last year, 2 cases of EVD - both occurred in volunteer HCWs in Sierra Leone - have been confirmed and treated in the Country. In one of the cases, the patient, 72 hours after his return to Italy, developed symptoms and was transferred to the infectious diseases ward of the nearest hospital (Sassari, Sardinia) and, later, to the Spallanzani Hospital in Rome, one of the two officially in charge for EVD hospitalizations. The Ministry of Health, following the recommendation of the European Centre for Disease Prevention and Control (ECDC) and the World Health Organization (WHO) (20, 22) produced guidelines on EVD (23, 24) but the training of HCWs in hospitals followed different pathways in each region. The main target of the training were HCWs of the Emergency Units.

In the light of the results of previous surveys regarding knowledge about EVD

(10-12, 14) or about prevention of healthcare associated infections (25), the purpose of the present investigation was to carry out a pilot study aimed:

- to define and administrate a questionnaire to evaluate HCWs' knowledge about EVD;
- to verify if the specific training on EVD, followed by the staff of the Emergency Unit of Italian hospitals, determined a significant difference in knowledge compared to the staff of not-trained units.

Methods

Population and sample

The study design consisted of a cross-sectional study, called RIPProVES survey. In Italian language, RIPProVES is the acronym of Risk Prevention and Protection of Virus Ebola in Healthcare.

This pilot study of RIPProVES was addressed to physicians and nurses of two hospitals in Rome: a tertiary acute hospital (number of beds, including day hospital = 1,008), identified as A, and a rehabilitation hospital, labeled as B (number of beds, including day hospital = 320). We included the Emergency Unit (EU) at hospital A and, as control, two internal medicine wards (hospital A) and some rehabilitation wards (hospital B).

In order to correctly identify the size of the population to be included in the survey, for each ward we used the list of physicians and nurses at work during the survey period. All HCWs (doctors and nurses) serving in these wards have been included.

Questionnaire: structure and administration

We prepared a true/false questionnaire according to the guidelines of ECDC and WHO (20-22) and to the recommendations on EVD management of the Italian Ministry of Health (23, 24); in case of discrepancies between guidelines, we referred to those of the Italian Ministry of Health. In order to protect HCWs' privacy and to increase the participation compliance, the questionnaire was anonymous.

The questionnaire was divided in two sections; the first one included the following informations: hospital, ward, age, sex, title of the interviewed, his previous participation in specific courses on EVD, sources of information on EVD (none, media/internet, colleagues, other). The second part included 20 statements on EVD grouped in 3 subject areas: Transmission (T), Personal Prevention and Protection (PPP), Environmental Prevention (EP). Statements were distributed as follows: 9 in T, 6 in PPP and 5 in EP areas.

Acceptable knowledge was arbitrarily considered to be 70% or more of the right answers. Therefore, the acceptable score was assumed to be 14 overall (on a total of 20), 6.3 (on a total of 9) for T, 4.2 (on a total of 6) for PPP and 3.5 (on a total of 5) for EP.

After receiving Health Direction's authorization, internal tutors were identified in both hospitals to facilitate the compliance with the survey. The questionnaire administration was performed by a trained external surveyor at hospital A and by a trained internal surveyor at hospital B. Before the administration, surveyors explained the aims of survey and gave instructions on how to answer statements; the questionnaire was completed in the presence of the surveyor in a quiet room of the ward, free of distractions or external/internal assistance, during a working shift. The survey was conducted in February 2015 and lasted about a week for each hospital.

Statistical analyses

Collected data were entered into a database prepared using Microsoft Office Excel 2007. Before entering data we encoded all variables of the questionnaire's first part (exposure variables) by dichotomous values; for age we used the mean overall score as cut-off.

In the study the metric evaluation included investigation of reliability (internal consistency) by the use of the Kuder-Richardson 20 (KR-20) test, in order to assess how well the individual items correlated with the overall test score.

HCWs' knowledge mean scores and proportions of respondents with acceptable score were calculated for the whole questionnaire and every single subject area; these measures were compared to each exposure variable using t-Student test and chi-squared test respectively.

A logistic regression was fitted to identify independent factors associated with acceptable knowledge level for the whole questionnaire and each area. Variables introduced into the logistic regression were: hospital (A=1), ward (EU=1), sex (male=1), age (≥42 years=1), title (physician=1), specific training on EVD (training=1).

Statistical analyses were performed using the Statistical Package for Social Science (SPSS v. 20). A *p value* less than 0.05 was considered significant.

Results

Overall, 237 HCWs (128 at hospital A and 109 at hospital B) were included in the pilot study, with a participation percentage of 89.1% (85.3% and 94.0% respectively). The proportion of missing answers to 20 statements was 3.8% (range 0.4 - 9.7); the area with the highest percentage of missing answers was EP (6.4%) followed by T (3.0%) and PPP (2.8%).

The reliability coefficient (KR-20), used as measure the internal consistency of the questionnaire, was 0.6 for the entire 20-item questionnaire.

The mean overall age (±SD) was 42 ± 10 years (46 ± 8 years at hospital A and 37 ± 10 years at hospital B, $p < 0.001$). The male to female ratio was 0.5; at hospital A this ratio was higher (0.6) than at hospital B (0.3). The physician to nurse ratio was 0.2 with a higher value at hospital A (0.3) than at hospital B (0.2). Only eighteen (7.6%) HCWs (16, all at hospital A) had followed specific training on EVD. The respondent HCWs' characteristics are described in table 1.

Table 1 - Respondent HCWs' characteristics

Features	Total		Hospital A		Hospital B	
	N	**%**	**N**	**%**	**N**	**%**
Sex (n=235)						
Male	74	*31.5*	49	*38.9*	25	*22.9*
Female	161	*68.5*	77	*61.1*	84	*77.1*
Age (n=214)						
< 42 years	106	*49.5*	33	*31.4*	73	*67.0*
≥42 years	108	*50.5*	72	*68.6*	36	*33.0*
Title (n=237)						
Physician	45	*19.0*	30	*23.4*	15	*13.8*
Nurse	192	*81.0*	98	*76.6*	94	*86.2*
Ward (n=237)						
Emergency Unit	75	*31.6*	75	*58.6*	0	*0*
Other wards	162	*68.4*	53	*41.4*	109	*100*
Training (n=237)						
Yes	18	*7.6*	16	*12.5*	2	*1.8*
No	219	*92.4*	112	*87.5*	107	*98.2*

Table 2 reports the proportion of correct answers by area and statement. The worst results were observed in the T area, with an overall proportion of correct answers of 45.1%. In this area the largest number of wrong answers refers to the statement on high contagiousness of EVD (only 2.5% of correct answers). The PPP area obtained the best results (78.4% of correct answers) and the statement on how to doff the gown showed the highest proportion of correct answers (94.5%).

Tables 3 shows the average scores of respondents by categories and investigated area. Mean overall score (±SD) achieved by HCWs was 12.1 (±2.5) on an overall perfect score of 20. In no cases mean values achieved overall acceptable scores. Considering upper limit of confidence interval, the overall acceptable score (14.0) was reached only by trained HCWs, who also showed a significant difference in knowledge mean, compared to untrained ($p < 0.001$). Stratifying by area, the average score (±SD) was 4.1 (±1.4) for T area, 4.7 (±1.1) for PPP, 3.3 (±1.2) for EP.

In particular, for T area (acceptable score = 6.3) no category achieved a satisfactory

Table 2 – Correct answers by statement

Statement	Total (n = 237)	
	N. correct answers	%
First Area – Transmission		
High contagiousness of Ebola virus disease (EVD)	6	*2.5*
Able to transmit EVD viral load	125	52.7
Contagiousness during incubation period	61	*25.7*
Ebola virus persistence in semen	110	*46.4*
Risk transmission via direct contact with a corpse of a person who died of EVD without appropriate personal protective equipment (PPE)	206	*86.9*
Contagiousness after symptomatic period	63	*26.6*
Case definition according to Italian Ministry of Health	13	*5.5*
Incubation period and import risk in Europe	192	*81.0*
Transmission risk in Europe by waste from EVD-infected patient	187	*78.9*
Total	**963**	***45.1***
Second Area – Personal Prevention and Protection		
Hand rubbing before direct contact with EVD-infected patient	135	*57.0*
Isolation of EVD-infected patients in single room	213	*89.9*
PPE of eyes, nose and mouth doffing	181	*76.4*
Use of sterile gloves	152	*64.1*
Gown doffing	224	*94.5*
Particulate respirator and aerosol generating procedures	210	*88.6*
Total	**1115**	***78.4***
Third Area –Environmental Prevention		
Ebola virus inactivation by sodium hypochlorite solutions	130	*54.9*
Ebola virus inactivation by drying	92	*38.8*
Surfaces' disinfection by sodium hypochlorite solutions	163	*68.8*
Great body fluid spill management	182	*76.8*
Reusable bedding from EVD-infected patient management	209	*88.2*
Total	**776**	***65.5***

Table 3 - Average score by categories and areas – Univariate analysis

	TOTAL				Trasmission				Personal Prevention Protection				Environmental Prevention			
	Score	±SD	95% CI	*p value*	Score	±SD	95% CI	*p value*	Score	±SD	95% CI	*p value*	Score	±SD	95% CI	*p value*
Hospital (n=237)																
- A	12.2	2.9	11.7-12-7	*0.36*	4.3	1.5	4.0-4-6	*<0.01*	4.6	1.2	4.4-4.8	*0.04*	3.4	1.2	3.2-3.6	*0.185*
- B	11.9	1.9	11.5-12.3		3.8	1.1	3.6-4-0		4.9	1.0	4.7-5.1		3.2	1.1	3.0-3.4	
Ward (n=237)																
- Emergency Unit	12.2	2.9	11.5-12.9	*0.39*	4.2	1.6	3.8-4.6	*0.31*	4.7	1.2	4.4-5.0	*1.00*	3.3	1.2	3.0-3.6	*0.55*
- Other wards	11.9	2.3	11.5-12-3		4.0	1.3	3.8-4.2		4.7	1.0	4.5-4.9		3.2	1.2	3.0-3.4	
Sex (n=235)																
- Male	12.1	2.5	11.5-12.7	*0.78*	4.2	1.3	3.9-4.5	*0.30*	4.6	1.2	4.3-4.9	*0.53*	3.3	1.2	3.0-3.6	*1.00*
- Female	12.0	2.6	11.6-12-4		4.0	1.4	3.8-4.2		4.7	1.1	4.5-4.9		3.3	1.2	3.1-3.5	
Age (n=214)																
- <42 years	12.0	2.2	11.6-12.4	*0.38*	3.8	1.3	3.5-4.1	*0.01*	5.0	0.9	4.8-5.2	*<0.01*	3.4	1.1	3.0-3.4	*0.06*
- ≥42 years	12.3	2.8	11.8-12.8		4.3	1.5	4.0-4.6		4.5	1.2	4.3-4.7		3.5	1.2	3.3-3.7	
Title (n= 237)																
- Physician	11.6	2.7	10.9-12.5	*0.34*	4.1	1.3	3.7-4.5	*1.00*	4.3	1.1	4.0-4.6	*0.01*	3.3	1.3	2.9-3.7	*1.00*
- Nurse	12.1	2.5	11.7-12.5		4.1	1.4	3.9-4.3		4.8	1.1	4.6-5.0		3.3	1.2	3.1-3.5	
Training (n= 237)																
- Yes	13.6	2.6	12.3-14.9	*<0.001*	4.9	1.1	4.5-5.4	*<0.001*	5.3	0.9	4.9-5.7	*0.03*	3.4	1.4	2.7-3-7	*0.74*
- No	11.9	1.5	11.7-12.1		4.0	1.4	3.8-4.2		4.7	1.1	4.6-4.8		3.3	1.2	3.1-3.5	

Table 4 - Proportion (%) of respondents with acceptable score (AS) by categories and areas – Univariate analysis
[1] Fisher's exact test

	TOTAL			Trasmission			Personal Prevention Protection			Environmental Prevention		
	% AS	95% CI	*p value*	% AS	95% CI	*p value*	% AS	95% CI	*p value*	%AS	95% CI	*p value*
Hospital (n=237)												
- A	43.8	35.5-52.4	*<0.001*	18.8	12.9-26.4	*<0.01*	59.4	50.7-67.5	*0.05*	55.5	46.8-63.8	*<0.01*
- B	20.2	13.7-28.7		6.4	3.2-12.7		72.5	63.4-80.0		37.6	29.1-47.0	
Ward (n=237)												
- Emergency Unit	40.0	29.7-51.3	*0.15*	21.3	13.6-31.9	*0.02*	58.7	47.4-69.1	*0.15*	46.7	35.8-57.9	*0.99*
- Other wards	29.6	23.1-37.1		9.3	5.7-14.7		69.1	61.7-75.7		47.5	40.0-55.3	
Sex (n=235)												
- Male	32.4	22.9-43.7	*0.94*	13.5	7.5-23.1	*0.91*	63.5	52.1-73.6	*0.70*	50.0	38.9-61.1	*0.66*
- Female	32.9	26.1-40.5		13.0	8.7-19.1		67.1	59.5-73.9		46.0	38.5-53.7	
Age (n=214)												
- <42 years	28.3	20.6-37.5	*0.08*	7.5	3.9-14.2	*0.01*	79.2	70.6-85.9	*<0.01*	39.6	30.8-49.1	*<0.01*
- ≥42 years	40.7	32.0-50.2		20.4	13.9-28.9		56.5	47.1-65.5		59.3	49.8-68.1	
Title (n= 237)												
- Physician	28.9	17.7-43.4	*0.64*	17.8	9.3-31.3	*0.43*	40.0	27.0-54.6	*<0.001*	51.1	37.0-65.0	*0.68*
- Nurse	33.9	27.5-40.8		12.0	8.1-17.3		71.4	64.6-77.3		46.4	39.4-53.4	
Training (n= 237)												
- Yes	61.1	38.6-79.7	*0.02*	33.3	16.3-56.3	*0.02*	77.8	54.8-91.0	*0.31*[1]	55.6	33.7-75.4	*0.63*
- No	30.6	24.9-37.0		11.4	7.9-16.3		64.8	58.3-70.9		46.6	40.1-53.2	

Table 5 - Logistic regression analysis of factors associated with acceptable knowledge by area

	TOTAL			Trasmission			Personal Prevention Protection			Environmental Prev		
	OR	95% CI	*p value*	OR	95% CI	*p value*	OR	95% CI	*p value*	OR	95% CI	
Hospital (A=1)	4.29	1.91-9.62	*<0.001*	1.88	0.59-5.90	*0.29*	0.99	0.45-2.20	*0.98*	3.14	1.50-6.70	
Ward (Em. Unit=1)	0.54	0.25-1.17	*0.12*	1.61	0.60-4.30	*0.34*	0.61	0.28-1.30	*0.22*	0.41	0.20.0.89	
Sex (M=1)	0.88	0.46-1.70	*0.70*	0.72	0.30-1.70	*0.47*	1.33	0.69-2.55	*0.39*	1.07	0.59-1.93	
Age (≥42=1)	0.84	0.42-1.70	*0.63*	1.75	0.65-4.70	*0.26*	0.38	0.19-0.76	*<0.01*	1.22	0.65-2.30	
Title (Physician=1)	0.71	0.32-1.60	*0.41*	1.27	0.50-3.40	*0.63*	0.36	0.17-0.77	*<0.01*	0.95	0.45-1.98	
Training (Yes=1)	3.18	1.10-9.10	*0.03*	2.40	0.80-7.40	*0.12*	3.34	0.99-11.25	*0.051*	1.3	0.47-3.63	

average for level of knowledge, although significant higher means were observed in hospital A ($p < 0.01$), in age groups ≥42 ($p = 0.01$) and trained HCWs ($p < 0.01$). For PPP (acceptable score = 4.2) all HCWs groups reported appropriate score levels and a significant higher knowledge was observed in hospitals B ($p = 0.04$), in age groups <42 years ($p < 0.01$), in nurses ($p = 0.01$) and trained HCWs ($p = 0.03$). Considering upper limit of confidence interval, only at hospital B, at wards other than EU and among younger HCWs professionals acceptable score (3.5) was not achieved for EP, although in this area no differences were observed.

Tables 4 shows the proportion of respondents with acceptable score by categories and investigated area.

Overall proportion of respondents with acceptable score was 32.9%; the highest proportion (61.1%) was found in trained HCWs. Stratifying by area, this proportion was 13.1% for T area (the highest, 33.3%, in trained HCWs), 65.8% for PPP (the highest, 79.2%, in younger HCWs), 47.3% for EP (the highest, 59.3%, in older HCWs) (table 4). Table 4 also shows the significant differences observed overall and stratified by area.

The logistic regression analysis (table 5) shows that the probability to achieve an acceptable total level of knowledge is 4.29 times higher in hospital A ($p<0.001$) and 3.18 in trained HCWs ($p=0.03$). Considering each area, for T no variable is associated with a significantly higher knowledge level, while for PPP variables "younger HCWs" and "nurses" resulted associated with a significantly higher knowledge level ($p<0.01$); for EP the probability to obtain an acceptable score resulted 3.14 higher for hospital A ($p<0.01$) and wards other than EU ($p=0.02$).

Conclusions

In recent years the use of questionnaires in health research has grown. These evaluation tools are an important feature, especially in educational programs, because they permit measuring the effects of teaching and learning and possible changes in attitudes toward the topic in exam (26). Since the questionnaire should be able to accurately measure what it proposed to evaluate, its reliability and validity need to be known and clarified as much as possible (27).

This pilot study shows several interesting results. First of all, it is one of the few whose questionnaires were metrically evaluated regarding HCWs' knowledge about risks and prevention of EVD. Second, the method used allowed us to obtain a very high compliance, both in terms of HCWs' participation and in completeness of answers. Actually the missing answers were only 3.8%. Therefore the instrument seems to be valid, at least in terms of face validity.

Regarding the internal consistency of the questionnaire, it reached a score of 0.6, a level of reliability not very high. Although a coefficient score higher than 0.7 is desirable (28), some authors consider scores as low as 0.5 acceptable (29, 30). In our study the low coefficient could depend on the small number of items; furthermore the questionnaire was constructed to reflect specific topics in the prevention of EVD. Therefore there was no attempt to create a single unifying scale that would link the items. In spite of these limits, we preferred to elaborate a questionnaire with few items (only 20), to obtain a higher compliance and validity, since, based on previous experiences (25, 31), those interviewed – especially HCWs - prefer shorter interviews, to reduce the time spent in this activity; a short interview also guarantees a higher level of attention when filling out the questionnaire. Therefore the instrument was aimed to require limited time to respond to, yet providing a detailed and broad description of the competence of the individuals or categories under study. Nonetheless, before applying the instrument at national level, it could be useful to perform

a quantitative content validity, as suggested by several authors (27-29).

In this pilot study, trained HCWs showed a probability 3.18 (95% CI 1.10-9.10, p=0.03) times higher to obtain an acceptable knowledge score. Stratifying by area, the probabilities did not reach significant differences between trained and untrained HCWs. In order to obtain more detailed results, it will be necessary to extend the investigation to a larger sample of hospitals and HCWs.

T area obtained the lowest knowledge score (45.1% of correct answers) and no investigated categories showed a significant association with higher knowledge in this area. The highest knowledge level was obtained in PPP area, with 78.4% of correct answers (Table 2). All categories obtained an acceptable score and better knowledge was significantly associated with young age and nurse title. These results are not surprising: also in a previous study we observed significant differences among age groups and curricula (25). For example, it has been demonstrated that senior physicians refer that their non compliance with hand hygiene is associated with a perceived lack of evidence about the effectiveness of this procedure in the prevention of Healthcare Associated Infections (32).

In conclusion, the developed 20-item questionnaire for the assessment of HCWs' knowledge about risks and prevention of EVD is easy to use, well accepted by HCWs and requires limited time to be filled, yet providing clear indications about the most deficient training areas and the categories with lack of knowledge.

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Declaration

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Riassunto

Studio trasversale sulle conoscenze degli operatori sanitari sulla malattia da virus Ebola e sulle relative misure di prevenzione: uno studio pilota in due ospedali di Roma (Italia)

Obiettivi: Effettuare uno studio pilota finalizzato: a) definire e validare un metodo per valutare le conoscenze degli operatori sanitari sulla malattia virus Ebola (EVD); verificare se la formazione specifica su EVD seguita nelle Unità di Emergenza si associ ad una significativa differenza nella conoscenza.

Metodi: È stato effettuato uno studio trasversale utilizzando un questionario costruito ad hoc, formato da 20 affermazioni vero /falso, suddivise in tre aree: rischio di trasmissione (T); prevenzione e protezione personale (PPP); prevenzione ambientale (EP). Lo studio ha riguardato gli operatori sanitari del Pronto Soccorso (formati specificamente) e quelli delle Unità di Medicina Interna (controllo) di due ospedali di Roma (A e B). La consistenza interna è stata valutata utilizzando il coefficiente KR-20. Una proporzione di 14/20 (70%) risposte corrette è stata considerata accettabile. I punteggi medi e i punteggi accettabili sono stati confrontati con il test t-Student e con il test chi-quadro, rispettivamente. Per identificare i fattori indipendenti associati con il livello di conoscenza accettabile per l'intero questionario e ogni area è stata utilizzata la regressione logistica.

Risultati: 237 operatori sanitari sono stati inclusi nello studio pilota, con una percentuale di partecipazione dell'89,1%. Il coefficiente di affidabilità (KR-20) è stato di 0,6 per l'intero questionario. La percentuale complessiva di intervistati con punteggio accettabile è stata del 32,9%; la percentuale più alta (61,1%) è stata osservata nel personale sanitario formato ($p < 0,02$). I fattori associati con una conoscenza accettabile sono: provenire dall'ospedale A ($p < 0,001$) e essere stato formato su EVD ($p = 0,03$). Stratificando per area, le variabili significativamente correlate ad un punteggio accettabile sono state: per l'area PPP l'età ≤42 anni ($p < 0,01$) e la categoria infermiere ($p < 0,01$); per l'area EP, appartenere all'ospedale A ($p < 0,01$) e all'Unità di Medicina Interna ($p = 0,02$).

Conclusioni: L'elevata adesione e completezza delle risposte indicano la validità del metodo adottato. Negli ospedali indagati la formazione specifica su EVD ha determinato un significativo miglioramento complessivo nelle conoscenze. Sarà opportuno estendere lo studio ad altri ospedali italiani per valutare la reale efficacia della formazione in un campione più ampio.

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