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Educational video improves the knowledge about outpatients' usage of antibiotics in hospital

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ABSTRACT
Irrational use or misuse of antibiotics, particularly by outpatients, increases antibiotic resistance. A lack of public knowledge about 'Responsible use of antibiotics' and 'How to obtain antibiotics' is a major cause of this. This study aimed to assess the effectiveness of an educational video about antibiotics and antibiotics use to increase outpatient's knowledge in two public hospitals in East Java, Indonesia. A quasi-experimental research setting was used with a one-group pretest-posttest design, carried out from November 2018 to January 2019. The study population consisted of outpatients, to whom antibiotics were prescribed, in two public hospitals in East Java, Indonesia. Participants were selected using a purposive sampling technique; 98 outpatients at MZ General Hospital in S regency and 96 at SG General Hospital in L regency were included. A questionnaire was used to measure the respondents' knowledge and consisted of five domains, i.e. definition of infections and antibiotics, obtaining the antibiotics, directions of use, storage instructions, antibiotic resistance. The knowledge test score was the total score of the Guttman scale (a dichotomy of 'yes' or 'no' answers). To determine the significance of the difference in knowledge before and after providing the educational video and in the knowledge score between hospitals, the (paired) Student's t-test was applied. The educational videos significantly improved outpatients' knowledge, which increased with 41% in MZ General Hospital and 42% in SG General Hospital. An educational video is a useful method to improve the knowledge of the outpatients regarding antibiotics.

Keywords: information media, video, patient' knowledge, antibiotic use, antibiotic resistance

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The Impact on Practice

The assumed benefits of antibiotics may cause a patient to purchase them for every symptom, even for minor ailments. Many patients are unaware that antibiotics are medicines that are only prescribed by physicians. However, there is no strict regulation that prevents patients from buying antibiotics without prescription in pharmacies in Indonesia. Patients' understanding of how to use antibiotics responsibly and how to obtain antibiotics correctly is still very poor in this country. Self-medication behavior in this respect is dangerous and may pose a serious threat to the development of microbial resistance to antibiotics. This study shows that an educational video increases patient knowledge about the responsible use of antibiotics and about procedures for obtaining antibiotics correctly. The increase in knowledge may help to reduce the risk of antibiotic resistance development.

Introduction

WHO reported that microbial resistance to antibiotics is a global health problem [1]. It is stated in the Global Surveillance of Antibiotic Resistance that the incidence of antibiotic resistance has increased rapidly in Asia, with the highest number in Southeast Asia [2,3]. The causes of antibiotic resistance comprise inappropriate (irrational) antibiotics use [4,5], the large number of prescriptions [6], the use of monotherapy broad spectrum antibiotics [7,8], massive antibiotic sales [9,10], weak distribution supervision [11], and patient-related factors [12]. The latter are the most common causes of antibiotic resistance in the community. Thus, society plays a role in generating development of antibiotic resistance. Basic Health Research (Riset Kesehatan Dasar) of the Ministry of Health of the Republic of Indonesia [13] reported that 35.2% of the Indonesians keep drugs for self-medication, and that 86.1% of the population store antibiotics obtained without prescription. Hospitals may act as a place for developing antibiotic resistant microbes which subsequently are spread over the community and the environment through outpatients [14,15].

Various measures need to be taken to prevent the development of antibiotic resistance and to reduce the spread of it [16]. An important aspect is to educate the public as to using antibiotics correctly and to convince them not to buy antibiotics without prescription [17]. The most important patient-related factor is the lack of knowledge about antibiotics and their use [18]. The people perceive that antibiotics are a ‘super drugs’ for any possible disease, and that they can cure minor ailments caused by viruses, such as flu, colds, and fever [18,19].

It is thus necessary to increase the patients’ knowledge by providing reliable information and education about antibiotics and their use [17,20]. It is also important to not only to consider the required content of the information to be delivered, but also the information media used for conveying the message [21]. Various types of information media exist, including visual, auditory, and visual-auditory media. Video as a digital media shows an arrangement of images that are seen and read sequentially at certain times to provide illusions, images, and fantasies associated with the moving images. The eyes and ears will capture these to synthesize the information in the brain. Learning outcomes given by auditory media only comprise 11% of the received information, while visual media reach levels as high as 83%. The memory of what we see, read and hear are account for 60% of the received information [22]. A scoping review methodology reported positive results of video-based educational interventions (animated presentations, professionals in practice, and patient narratives); the effect differences with printed material or verbal education were statistically significant. Animated video formats had advantages because it is relatively easy to add, remove, or modify content and its flexibility to accommodate clinical practices. Patients also tend to be more receptive to animated videos, and in several studies, animated videos consistently show improvement in short-term outcomes such as knowledge and comprehension of the information provided by the healthcare team [23]. A review of patient education effectiveness of bowel preparation for colonoscopy reported that print material (a cartoon visual aid) or educational videos were more effective than written instructions or instructional videos, but there is one out seven studies showed that there is a relatively high rate of treatment contamination in the treatment group (a visual aid depicting adequate and inadequate bowel preparations) than in the control group [24]. Furthermore, a study at 245 women with osteoporosis showed no significant differences in knowledge and decisional conflict scores changes between adding a multimedia patient education tool involving video modeling and a printed educational booklet [25].

Aim of the Study

This study aimed to assess the effect of providing information in the form of animated video containing information about antibiotics to improve outpatients’ knowledge.

Ethics Statements

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments

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or comparable ethical standards. Written consent to participate was obtained from all study participants. This study has obtained ethical approval issued by the Health Research Ethics Commission of the Surabaya Ministry of Health Office with a letter number 025/5/KEPK/V/2017.

Materials & Methods

Study Design

A one-group pretest–posttest design in quasi-experimental research was conducted to determine the effect of the intervention on the research subjects. All participants who gave consent completed a pre-test to acquire their initial condition. All subjects were requested to answer the similar questionnaire before (pre) and after (post) watching the educational video from a laptop. The participants watch video in the waiting room, one participant for every session, privately. The length of the video was 4 minutes and 40 seconds. It started with an opening section, introduction, information about infections, antibiotics definition, procedure to obtain antibiotics, antibiotic administration, antibiotic storage, antibiotic resistance definition and prevention, infection transmission prevention, and ended with a riveting visual that ties to a take-home message at a closing section. The video can be watched via the link: https://youtu.be/UFa3YS5xhAQ. The study population consisted of outpatients in MZ General Hospital and SG General Hospital that met the inclusion criteria, visit the hospital for infectious disease, and had an antibiotic prescription. The study was done within the period of November 2018 to January 2019. Both the MZ General Hospital and SG General Hospital are the largest hospitals in S regency and L regencies, located 22 km and 43 km respectively, from Surabaya, the capital city of East Java Province. S (1233 km2) and L (1782 km2) regency were chosen as they possess a similar shape and features of land surfaces (topography), are categorized as a small town and possess a comparable population density as well as an equal social-economic scale.

The questionnaire consisted of 19 questions categorized in five domains: five items under “Definition of Infections and Antibiotics”, three items under “Obtaining the Antibiotics”, four items under “Directions for Use”, three items under “Storage Instructions”, and four items under “Antibiotic Resistance”. The reliability of the research questionnaire is considered to be good, the Cronbach alpha value was more than 0.6 for 10 items question in MZ General Hospital, and 14 items question in SG General Hospital [26]. In this study, the Cronbach's alpha was 0.742 (MZ General Hospital) and 0.762 (SG General Hospital). The face to face interview, data collection method was used before and after watching the video, The following formula was used for calculating the adequate sample size in the prevalence study, wherein n is the sample size, Z is the standard normal variate at 5% type I error, $p<0.05$ (1.96), P is the expected prevalence (0.5), and d is the precision of the effect size (0.1) [27]. There were 98 outpatients at MZ General Hospital, and 96 outpatients at SG General Hospital participated in the study.

$$n = \frac{Z^2 P\,(1-P)}{d^2}$$

Statistical analysis

The total knowledge test score was a cumulative score at the Guttman scale where the respondents selected a “yes” or “no” answer for each individual item question. The answers were analyzed descriptively. The percentage of the correct answers is reported in tables. To determine the significance of difference in knowledge before and after providing the educational video, the paired Student’s t-test was applied. To examine the difference in the knowledge score between hospitals, Student t-test was applied.

Results

The study on the effect of educational video was carried out to improve patients’ knowledge on responsible use of antibiotics and procedures for obtaining antibiotics. The characteristics of respondents of MZ General Hospital and SG General Hospital are provided in Table 1. The number of females visiting the two hospitals was higher than of males (52% in MZ General Hospital and 74% in SG General Hospital). The age distribution of the outpatients in the range of 18-45 years was 97% for MZ General Hospital and 59% for SG General Hospital.

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Table 1. Respondents' demographic characteristics

Characteristic	MZ General Hospital (N=98) n (%)	SG General Hospital (N=96) n (%)
Gender		
• Male	47 (48.0)	25 (26.0)
• Female	51 (52.0)	71 (74.0)
Age (years old)		
• 18-25	12 (12.2)	8 (8.3)
• 26-35	36 (36.7)	12 (12.5)
• 36-45	47 (48.0)	37 (38.5)
• 46-60	3 (3.1)	38 (39.6)
• >60	0 (0)	1 (1.0)

Table 2 shows that the total score of patient's knowledge about antibiotics before the intervention (pre-test) was 58.8 in MZ General Hospital and 62.6 in SG General Hospital, while after the intervention the score was 82.7 at MZ and 88.8 at SG. Knowledge improvement was significant ($p<0.05$) in both hospitals.

Table 2. Knowledge score test difference between hospitals

	Questions	MZ General Hospital			SG General Hospital			Δ *p*-value
		pre	post	Δ	pre	post	Δ	
Domain: Definition of Infections and Antibiotics		63.3	83.2	19.9	60.4	84.9	24.5	0.278
Q1	Antibiotics are medicines used to treat diseases caused by bacterial infections.	95.9	98.0	2.0	50.0	90.6	40.6	0.000
Q2	Antibiotics are remedies for diseases with symptoms of fever, running nose, and sore throat.	29.6	68.4	38.8	56.3	78.1	21.9	0.049
Q3	Amoxicillin/ ampicillin/ ciprofloxacin/ cefixime / chloramphenicol / rifampicin/ tetracycline / erythromycin are antibiotics.	N/A	N/A	N/A	68.8	88.5	19.8	-
Q4	Constant use of hand sanitizer or soap before doing an activity can prevent infection transmission.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Q5	Wearing a face mask when suffering cough, cold or flu, will prevent infection transmission.	N/A	N/A	N/A	66.7	82.3	15.6	-
Domain: Obtaining the Antibiotics		44.9	77.6	32.4	53.1	95.8	42.7	0.125
Q6	Antibiotics are medicines that can be purchased without a doctor's prescription.	40.8	81.6	40.8	N/A	N/A	N/A	-
Q7	If the disease has the same symptoms as the relative or a friend has, the patient can use the antibiotics left over by the relative or friend.	59.2	78.6	19.4	53.1	95.8	42.7	0.004
Q8	Antibiotics can be purchased from supermarkets or drug stores.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Domain: Directions for Use		64.3	81.6	17.3	63.9	91.5	27.2	0.042
Q9	If the condition has improved, the amount or dose of antibiotics to be taken must remain the same until the entire course of antibiotics is complete.	35.7	73.5	37.8	67.7	100	32.3	0.474
Q10	Antibiotics must be taken every day following the schedule directed by the doctor	73.5	91.8	18.4	60.4	83.3	22.9	0.577

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	or the pharmacist until the course of antibiotics finished.							
Q11	Failure to comply with the antibiotics' directions used as suggested by the doctor or pharmacist leads to an incomplete or no recovery from the disease.	N/A	N/A	N/A	64.6	91.7	27.1	-
Q12	Consumption of food or beverage that the doctor or pharmacist recommends to avoi during antibiotics can reduce the efficacy of the drugs.	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Domain: Storage Instructions		68.4	83.7	15.3	63.9	86.6	22.3	0.288
Q13	The remaining antibiotics tablet or syrup can be stored and used again if the same disease occurs.	55.1	71.4	16.3	58.3	90.6	32.3	0.056
Q14	Antibiotics will be ineffective when stored in a place exposed to sunlight.	68.4	83.7	15.3	70.8	88.5	17.7	0.770
Q15	Antibiotics can be stored in a freezer.	N/A	N/A	N/A	63,54	81,25	17.71	-
Domain: Antibiotic Resistance		65.3	90.8	25.5	65.2	91.2	25.5	0.998
Q16	Stopping the use of antibiotics before completing the course of treatment recommended by the doctor can cause the bacteria to become resistant.	69.4	86.7	17.4	59.4	86.5	27.1	0.245
Q17	When bacteria become resistant to antibiotics, the duration of the antibiotic course will not be affected.	54.1	93.9	39.8	N/A	N/A	N/A	-
Q18	Being infected with antibiotic-resistant bacteria can result in higher costs of treatment.	N/A	N/A	N/A	70.8	93.8	22.9	-
Q19	Being infected with antibiotic-resistant bacteria can have a deadly outcome.	N/A	N/A	N/A	66.7	92.7	26.0	-
Total		58.8	82.7	23.9	62.6	88.8	26.2	-

N/A: not available

Among the five domains, there were two showing significant improvement after intervention: 'Obtaining the Antibiotics' (MZ: from 44.9 to 77.6; SG: from 53.1 to 95.8; $p<0.05$) and the Directions for Use (MZ: from 64.3 to 81.6; SG: from 63.9 to 91.5; $p<0.05$).

The results of the pretest of question Q1 showed that respondents at MZ General Hospital already had an adequate knowledge that antibiotics are used for bacterial infections with the score of 95.9. The respondents also had good knowledge that antibiotics should be taken regularly (pre-test score of Q10 was 73.5). On the other side, the respondents at the SG General Hospital already knew that antibiotics will be ineffective when stored in a place exposed to sunlight and also understood that being infected with antibiotic-resistant bacteria may result in higher costs of treatment (pre-test scores of Q14 and Q18 were 70.8).

Video intervention significantly improved the patient's knowledge that antibiotics are medicines that can be purchase without a doctor's prescription. This is obvious from the increased score of 40.8 of question Q6 at MZ General Hospital. At SG General Hospital a significant improvement was seen on the knowledge about the fact that left-over antibiotics (e.g., from relatives) cannot used in case the patient has similar symptoms (increased score of 42.7 for Q7 question)

The respondents from both hospitals misunderstood about the indication for antibiotics. The incorrect knowledge is related to question Q1 and Q2, i.e. antibiotics are medicines used not only for diseases caused by bacterial infections, but also for diseases with symptoms of fever, running nose, and sore throat. The knowledge score before the intervention was 95.9 (Q1) and 29.6 (Q2) at MZ General Hospital; 50.0 (Q1) and 56.3 (Q2) at SG General Hospital.

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The paired t-test analysis between pre- and post-intervention in each hospital revealed that the difference in the knowledge score before and after the intervention were statistically significant (p<0.05).

Discussion

Our study to reduce irrational use of antibiotics in outpatients was done by providing information in the form of educational video prior to dispensing the medication to outpatients at two General Hospitals in two regencies in East Java Province of Indonesia followed by evaluating the effect of watching the video.

The two regencies were chosen based on the high degree of similarity in topography, population density, and on the socio-economic factors such as education, income, type of occupation, and religion. S (1233 km^2) and L (1782 km^2) regencies are included in the small-town category. The two regencies are located 22 km and 43 km away from Surabaya [28,29]. The outpatient age distribution in this study reflects an "age-sex-pyramid" population. The growth rate in the S regency population (1.10) was higher than in the L regency population (0.02). The distribution of various age groups in the S regency population forms an expansive shape of a pyramid showing that the population is growing, while an equal proportion in each age group of the L regency population points to a stationary population pyramid.

The knowledge increment about antibiotics of respondents after watching the video at S regency (23.9) was lower than of respondents at L regency (26.2). The results of the post-test of respondents at L regency were significantly higher than those of the post-test of respondents at S regency (p=0.001). Similar with Schoen's study outcome [30], but different from Hjorth-Johansen's [31], our study showed that a higher baseline knowledge produced a higher knowledge increment.

In both hospitals, the initial outpatients' knowledge about how to obtain antibiotics was low (45.2 and 53.0). They did not know that antibiotics are a prescription only medicines (POM) [32] and are only indicated for treating infectious diseases caused by bacteria. This situation is a yet unknown threat from the community because people use antibiotics heedlessly, thereby unintentionally bringing harm to themselves and others. The respondents' knowledge about obtaining antibiotics is associated with their lack of knowledge about antibiotic resistance [33].

Research showed that health education regarding the use of an assistive device is more effective than lectures because the animation video increases people's engagement and interest [34-36]. An educational video may improve the patients' knowledge to a great extent, so that people understand the content and can correctly answer when they are subsequently tested. Good knowledge provides better understanding, since regular exposure to accurate information can raise awareness and change the behavior. Accordingly, educational video material can give many benefits as a tool for health prevention and promotion programs in the community, peculiarly concerning infectious diseases [37].

The patient's baseline knowledge about antibiotic indications and resistance varied even in the same typical area, the difference of the respondent pre-test score in both hospitals was statistically significant. After watching the five minutes education video the patient's knowledge can increase to a great extent. Besides that, many patients do not know that antibiotics are prescription-only medicines but that there are no strict regulations for buying antibiotics without prescription in Indonesia [38]. To become a habit, we recommend that healthcare provides this type of education regularly or each time a patient receives antibiotics. Customization is a long process, and a successful strategy for the rational use of medicines in a district in Java needs a combination of activities, i.e. educational, managerial, and regulational [39].

Limitations

The study results are limited to two hospitals with their own specific characteristics in East Java and do not represent the general Indonesian population. In total, there are thirty-nine government sponsored general hospitals in East Java that cover thirty-eight regencies/cities. However, the results of our study may be seen as good practice for other hospitals.

Conclusions

Lack of knowledge about responsible antibiotics use and awareness of the risks of resistance against antibiotics are the main causes why patients self-medicate themselves with antibiotics for a minor ailment. Responsible use of antibiotics needs to be improved and maintained by providing education on an ongoing basis using a multi-media approach. The use of educational videos may increase the patient's knowledge and awareness about the appropriate use of antibiotics. An educational video will improves patients' short-term knowledge about purchase and correct use of antibiotics in order to reduce microbial resistance. However, one time education will not definitely change behavior. Education must be provided continuously until it becomes a habit to using antibiotics correctly and responsibly.

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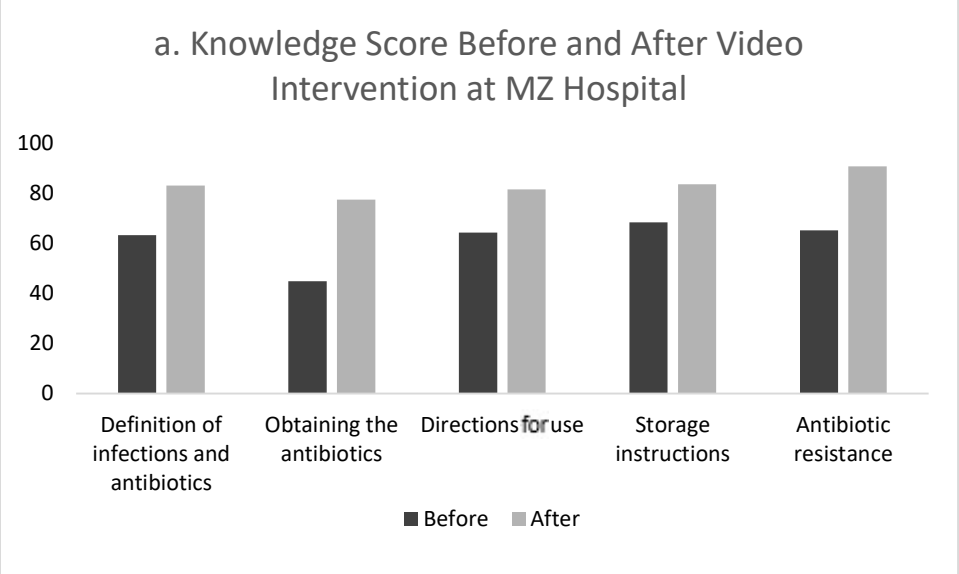
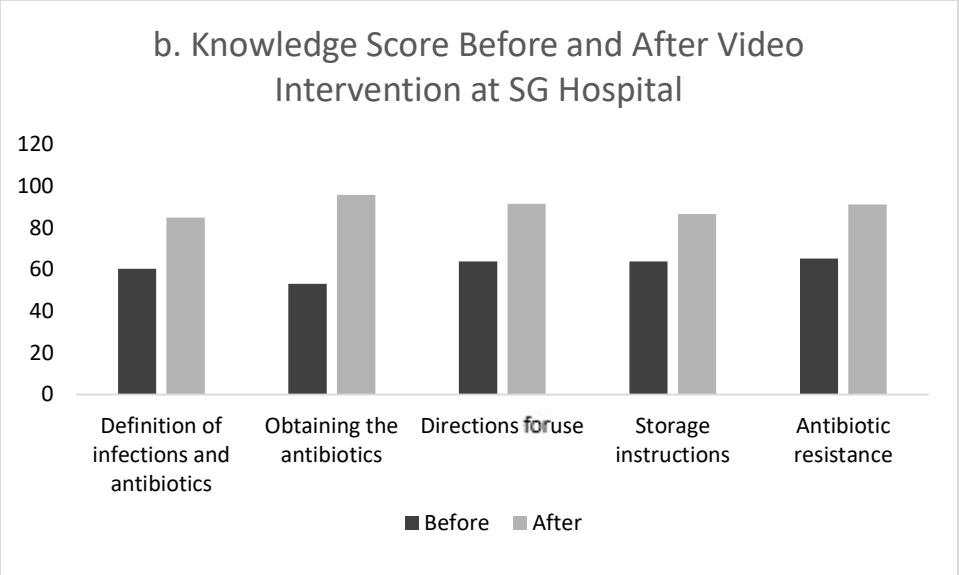
Besides that, a strict regulation is needed to avoid dispensing antibiotics without prescription. A successful strategy for advancing the rational use of antibiotics is a combination of educational, managerial, and regulation measures.



a.



b.

Figure 1. Score of patient's knowledge (in %) before and after video intervention at a. MZ General Hospital and b. SG General Hospital

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Author Contributions
Data curation, Bustanul Arifin and Ikhwan Frasetyo; Formal analysis, Fauna Herawati, Bustanul Arifin, Ikhwan Frasetyo and Setiasih Setiasih; Funding acquisition, Rika Yulia; Methodology, Fauna Herawati, Rika Yulia, Setiasih Setiasih and Retnosari Andrajati; Project administration, Fauna Herawati, Rika Yulia and Christina Avanti; Supervision, Herman J. Woerdenbag and Retnosari Andrajati; Writing – original draft, Fauna Herawati; Writing – review & editing, Fauna Herawati, Herman J. Woerdenbag, Christina Avanti and Retnosari Andrajati.

Conflict of Interest
The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Appendix 1. The patient's knowledge questionnaire used before and after video intervention (Indonesian language version)

No.	Pertanyaan	Benar	Salah
Domain : Definisi infeksi dan antibiotik			
Q1.	Antibiotik adalah obat untuk mengatasi penyakit yang disebabkan oleh infeksi bakteri.		
Q2.	Penyakit dengan gejala demam, seperti pada flu/pilek, radang tenggorokan dapat diobati dengan antibiotik.		
Q3.	Amoksisilin/ ampisilin/ siprofloksasin/ sefixim/ kloramfenikol/ rifampisin/ tetrasiklin/ eritromisin adalah antibiotik.		
Q4.	Kebiasaan menggunakan cairan antiseptik (*hand rub)* atau sabun untuk mencuci tangan sebelum melakukan aktivitas dapat mencegah penularan infeksi.		
Q5.	Menggunakan masker ketika menderita batuk, pilek & flu adalah tindakan untuk mencegah penyebaran infeksi.		
Domain : Cara Memperoleh			
Q6.	Antibiotik adalah obat yang dapat dibeli tanpa resep dokter.		
Q7.	Jika mengalami penyakit dengan gejala yang sama dengan anggota keluarga atau teman dapat menggunakan sisa antibiotik dari keluarga atau teman yang sakit.		
Q8.	Antibiotik bisa diperoleh di swalayan/ supermarket/ toko obat.		
Domain : Aturan Pakai			
Q9.	Jika kondisi sudah membaik, jumlah atau takaran antibiotik yang diminum harus tetap sama sehingga seluruh antibiotik habis.		
Q10.	Antibiotik harus dikonsumsi setiap hari sesuai jadwal yang diinformasikan dokter atau tenaga kesehatan sampai habis.		
Q11.	Minum obat antibiotik yang tidak sesuai aturan pakai seperti anjuran dokter atau Apoteker, membuat penyakit sembuhnya tidak tuntas.		
Q12.	Mengkonsumsi makanan atau minuman yang disarankan oleh dokter atau Apoteker untuk dihindari saat saya mengkonsumsi antibiotik dapat mengurangi kemanjuran obat yang saya konsumsi		

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Domain : Cara Penyimpanan			
Q13.	Antibiotik yang tersisa dapat disimpan dan diminum kembali jika muncul sakit yang sama.		
Q14.	Antibiotik akan rusak jika disimpan pada tempat yang terkena sinr matahari.		
Q15.	Antibiotik boleh disimpan di *freezer*.		
Domain : Resistensi Antibiotik			
Q16.	Menghentikan minum antibiotik tidak sesuai waktunya yang telah disarankan dokter menyebabkan bakteri menjadi kebal (resisten).		
Q17.	Jika bakteri sudah kebal antibiotik, tidak akan mempengaruhi lama pengobatan .		
Q18.	Terinfeksi bakteri kebal antibiotik dapat mengakibatkan biaya pengobatan lebih mahal.		
Q19.	Terinfeksi bakteri kebal antibiotik dapat menyebabkan kematian.		

Appendix 2. The educational video script (Indonesian language version)

Narasi video edukasi antibiotik “Mengenal antibiotik dan resistensi antibiotik”

Opening :

Teks Narasi	Gambar
	Menampilkan logo ubaya dan riestekdikti

Scene 1 : Pendahuluan

Teks Narasi	Gambar
Bakteri, Virus dan Jamur dapat berada dimana saja, seperti pada bantal, alat tulis, botol minum, mobil bahkan telpon genggam, pegangan lift dan gagang pintu.	Illustrasi bakteri, bantal, alat tulis, botol minum, mobil, Hp, pegangan lift dan pegangan pintu.

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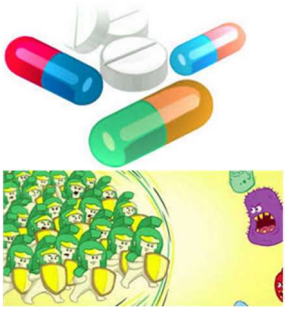
	Illustrasi obat-
Jika terinfeksi oleh bakteri, dapat diatasi dengan menggunakan antibiotik.	Illustrasi ajakan memeriksakan diri ke dokter
Untuk mengetahui adanya infeksi bakteri periksakanlah diri anda ke dokter.	Obat antibiotik 

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Scene 2 : Definisi dan cara memperoleh Antibiotik

Teks Narasi	Gambar
Antibiotik tidak dapat digunakan untuk mengatasi penyakit yang disebabkan oleh virus, contohnya batuk dan flu, demam, sakit tenggorokan, diare	Illustrasi Orang Batuk, Demam, Sakit tenggorokan, Diare 
Banyak macam antibiotik yang beredar di pasaran, beberapa contohnya adalah Amoksisilin, Siprofloksasin, Sefadroksil, Eritromisin, Tetrasiklin	Illustrasi gambar obat antibiotik (kemasan botol, kapsul, tablet) dicantumkan nama paten Amoksisilin (Amoxan), Siprofloksasin (Ciproxin), Sefadroksil (Lapicef), Eritromisin (Erysanbe) , Tetrasiklin (Doxycyline)
Antibiotik hanya dapat diperoleh dengan resep dokter	Gambar dokter dan resep, apoteker 

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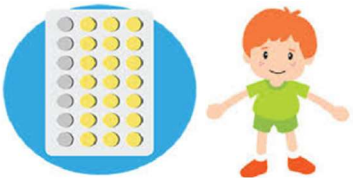
Jangan pernah menerima antibiotik dari pemberian orang lain atau tanpa menggunakan resep dokter	Illustrasi Resep dokter dan tangan menerima obat dari orang lain di Silang

Scene 3 : Aturan pakai & Penyimpanan Antibiotik

Teks Narasi	Gambar
Penggunaan antibiotik harus sesuai dengan etiket	llustrasi obat dan Label Etiket obat
Antibiotik yang masih dalam masa konsumsi harus disimpan dengan baik dan benar seperti : Kemasan harus tertutup rapat Simpan di tempat yang kering Hindari paparan sinar matahari langsung Jauhkan dari jangkauan anakanak Sirup kering antibiotik yang telah dicampur dengan air tidak boleh digunakan lebih dari 7 hari Puyer antibiotik sebaiknya disimpan di tempat yang kering, seperti di rak atau di kotak obat	Illustrasi Si Orang minum antibiotik Illustrasi Obat Botol/Ziplock Illustrasi Obat disimpan di lemari/kotak tertutup Illustrasi Obat yg terhindar dari Sinar Matahari Illustrasi anak kecil menggapai obat dan obatnya di silang Ilustrasi sirup kering antibiotik yang sudah ditambahkan air sisimpan di kulkas dan penyimpanan lebih dari 7 hari di gambarnya (ditumpahkan/dituangkan di luar) Ilustrasi obat puyer diletakkan di rak (tempat kering)
Antibiotik harus diminum sampai habis sesuai dengan resep dokter	Illustrasi obat antibiotik harus diminum sampai habis walaupun sudah merasa dirinya sembuh. Illustrasi etiket obat dengan tulisan harus dihabiskan 
Menghentikan penggunaan antibiotik di tengah terapi pengobatan dapat menyebabkan bakteri penginfeksi yang belum mati menjadi resisten/kebal	Illustrasi obat antibiotik yang telah dibuka (Hanya diminum 1-2 hari) dapat menyebabkan bakteri resitensi = bakterinya kebal

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terhadap penggunaan antibiotik dimasa mendatang	
Gunakanlah antibiotik secara baik dan benar, agar tidak menimbulkan resistensi antibiotik	Ilustrasi Teks baik dan benar dan gambar orang sehat 
Antibiotik seperti tetrasiklin atau siprofloksasin (kemasan tetrasiklin dan siproflokasasin diberi logo obat keras) tidak boleh dikonsumsi bersamaan dengan susu, ataupun obat maag seperti mylanta dan vitamin yang mengandung zat besi dan kalsium	Ilustrasi orang meminum obat dan kemudian muncul gambar susu, telur dan obaat maag Mylanta, vitamin yang mengandung Fe dan Ca kemudian diberi tanda silang merah 

Scene 4 : Resistensi Antibiotik

Teks Narasi	Gambar
Resistensi antibiotik adalah kondisi dimana antibiotik tidak dapat membunuh bakteri yang menyerang tubuh manusia	Ilustrasi antibiotik menyerang bakteri, tapi bakteri punya tameng sehingga antibiotiknya tidak mampu bunuh bakterinya Ilustrasi bakteri diberi tulisan “bakteri menjadi kebal”

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	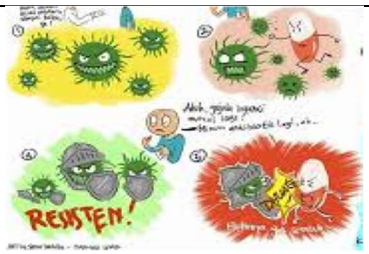

Scene 5 : Pencegahan Resistensi

Teks Narasi	Gambar
Beberapa faktor yang dapat menyebabkan resistensi antara lain : Penggunaan antibiotik yang tidak teratur Menghentikan penggunaan antibiotik secara tiba-tiba Penggunaan antibiotik yang tidak sesuai dengan pentunjuk dan rekomendasi dokter	Illustrasi tulisan dengan tambahan bubbletext 
Penggunaan antibiotik secara tidak rasional bisa menyebabkan terjadinya resistensi. resistensi antibiotik dapat menyebabkan: Penyakit yang lebih kuat dan sulit diobati Biaya pengobatan semakin mahal hingga kematian	Illustrasi Orang terbaring lemas dikasur  Illustrasi Uang  Illustrasi Kematian 
INGAT! Jangan pernah membeli antibiotik tanpa menggunakan resep dokter dan jangan menerima antibiotik dari pemberian orang lain	
Yuk mari gunakan antibiotik dengan baik dan benar agar dapat mencegah terjadinya resistensi antibiotik dan membuat kita lebih sehat!	

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Karena antibiotik adalah aset berharga untuk anak cucu kita	

Scene 6 : Pencegahan Penularan Infeksi

Teks Narasi	Gambar
OLEH KARENA ITU... Kita harus menjaga kebersihan agar terhindar dari infeksi dengan cara : 1. Mencuci tangan sebelum dan setelah melakukan berbagai macam aktifitas Berikut 6 langkah mencuci tangan menurut who Selain itu kita dapat memakai masker saat batuk, dan flu	Illustrasi Mencuci tangan Illustrasi wajah Si Orang menggunakan masker  

Scene 7 : Penutup

Teks Narasi	Gambar
Scene Penutup : Pembimbing : Fauna Herawati, S.Si., M.Farm-Klin., Apt Dr. Rika Yulia, S.Si., Sp.FRS., Apt. Disampaikan oleh : Patricia Valery R Ayu Amalia Putri Zakiya Bastiani Nur Sulthan	

Ismatul Hidayah Marzuki Bustanul Arifin Ikhwan Prasetyo	

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