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Prevalence of multidrug-resistant *Escherichia coli* isolated from Jember hospital food handler in Indonesia



Enny Suswati^{1*}, Supangat², Laksmi Indreswari³,
Farhatina Nur U'alifa⁴, Faiza Nabila⁴, Inas Gama Putri Hertian⁴

ABSTRACT

Introduction: Foodborne illness is a significant global public health issue. Improper food handling and personal cleanliness can result in a few ailments. Over 400 food-related infections have been found by the CDC, of which food handlers cause 20%. *Escherichia coli* is often found in hospital food handler hand and nasal swabs. This study aimed to ascertain the prevalence of *E. coli* and the antibiotic susceptibility profile of food handlers working in hospitals in Jember City, Indonesia.

Method: A cross-sectional investigation uses a total sampling method held between October and November 2022. Inclusion criteria are asymptomatic food handlers that have not taken antibiotics for the last three months and have already given informed consent. Exclusion criteria are food handlers who's sick or with incomplete questionnaires. We performed hand and nasal swabs and continued with bacteria identification, culture, and antibiotic sensitivity tests.

Result: Ten food workers (14.71%) and fourteen (20.59%) of the 68 who underwent hand and nasal swab culture screenings for *E. coli* were positive. All *E. coli* hand swab isolates were susceptible to levofloxacin and azithromycin antibiotics. Still, of the 10 *E. coli* hand swab isolates, 90% were resistant to the antibiotics; penicillin, Cefotaxime, and ceftriaxone, while 70% were resistant to erythromycin. For *E. coli* isolates originating from nasal swabs, 85.71% were resistant to Cefotaxime, 71.43% to Penicillin and Cefepime, and 57.14% were resistant to Ceftriaxone and Erythromycin. *E. coli* Multiple Antibiotic Resistance (MAR) index for hand and nasal swab specimens is 0.18 – 0.82. Most of the hand swab specimens (90%) are Multidrug Resistant (MDR), while nasal swab specimen shows 78.57% Multidrug Resistant (MDR).

Conclusion: The predominance of multidrug-resistant *E. coli* among hospital food handlers makes it imperative to implement infection control measures, including better biosecurity, to ensure that they do not enter the food supply and limit alternatives to inpatient therapy.

Keywords: *E. coli*, Multidrug-Resistant, Hospital, Food handlers.

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INTRODUCTION

Foodborne illness (FBI) is still a significant global public health issue. Numerous studies have demonstrated that improper food handling and personal cleanliness can result in a few ailments. More than 400 food-related infections have been found by the Centers for Disease Control and Prevention (CDC), of which 20% are caused by food handlers.¹ Worldwide, there are more than 250 different foodborne illnesses. Most of these illnesses are contagious and are brought on by various bacteria, viruses, and parasites. Other foodborne illnesses may be poisonings brought on by dangerous compounds or toxins, such as toxic mushrooms and some bacteria's enterotoxins. Salmonella,

Campylobacter, Listeria, pathogenic *Escherichia coli* (*E. coli*), Yersinia, Shigella, Enterobacter, and Citrobacter are potential culprits.²

Food handlers, people working in the food industry, people with parasitic gastrointestinal diseases, and those with poor personal hygiene are all risky sources of *E. coli* transmission to the general population. Food handlers with *E. coli* infections have subclinical symptoms and are asymptomatic carriers; as a result, they are unaware of their potential role in infection transmission, making control and eradication more challenging.³

It is a persistent issue everywhere that people who handle food can spread dangerous diseases. Food handlers from

places like restaurants, hotels, factories, canteens, schools, hospitals, and prisons who may introduce viruses into the food during production, processing, distribution, and handling could be potential infection sources. Because most food workers have undiagnosed ailments, they are important healthy reservoirs of contagious viruses in society.⁴

Hospital food services should be given extra consideration since they can act as carriers of infection and spread outbreaks of foodborne illness among the most vulnerable patients. Healthcare personnel can spread infections through direct touch, the air, or patient-given food.⁵ Contamination occurs anytime throughout food manufacturing,

processing, distribution, and preparation. The risk of food contamination is significantly influenced by the health of the individuals handling the food, their hygiene, and their knowledge of and adherence to food hygiene.⁶

Additionally, they can spread illnesses through food, water, nails, and fingers; in places where food is prepared and served to a large number of people, such as restaurants, hotels, factories, canteens, schools, hospitals, and prisons, the impact of food handlers on the spread of *E. coli* is significant.⁷ The most prevalent makers of these antibiotic-resistance enzymes and the ones posing treatment difficulties in nosocomial and community-acquired illnesses have been identified as *E. coli* strains. Due to the need for costly medications and extended hospital stays for management and care, these infections are to blame for higher morbidity and mortality rates.⁸

Food handlers have the most crucial role in food safety because, if they are unwell, their hands, hair, skin, respiratory tracts, and digestive systems may operate as transfer sites of microbial pathogens for food contamination. Additionally, food workers' hazardous food handling techniques can result in foodborne illnesses. Food handlers' hands can potentially spread infections to their mouths, eyes, noses, and skin, as well as indirectly by handling food or water. One of the most crucial factors in obtaining safe food is food handlers' hand cleanliness. There has yet to be any investigation about the resistance pattern of *E. coli* taken from hand and a nasal swab from food handlers in Indonesia, especially in East Java. The current study's objective was to assess the antimicrobial susceptibility profile and prevalence of *E. coli* among food handlers working in restaurants in Jember City, Indonesia.

MATERIAL AND METHODS

A cross-sectional investigation was conducted on the asymptomatic food handlers that have not taken antibiotics for the last three months between October and November 2022. This research uses a total sampling method involving all asymptomatic food handlers (those involved in food preparation, dispatch,

and storage) working in all hospitals in the Jember region. There was a total of 68 food handlers that participated in this study. Inclusion criteria are asymptomatic food handlers that have not taken antibiotics for the last three months and have already given informed consent. Exclusion criteria are food handlers who's sick or with incomplete questionnaires. Ethical approval was granted with the registered number 1640/H25.1.11/KE/2022 by the Ethical Committee of the Medical Faculty University of Jember. All the enrolled food handlers signed or left their fingerprints as proof of their written informed consent.

The sterile standard saline wet swab was used to collect a nasal specimen. The tips were rotated six times after placing 1-2 cm inside the anterior nares of both nostrils. The swabs were immediately put into sterile screw-capped tubes with 5 ml of regular saline. The samples from their palm, between their fingernails, and at the tips/under their nails of both hands were collected using a different sterile cotton tip applicator and then sent to the Jember University Microbiology Laboratory for cultivation.

Escherichia coli isolation and identification: Salmonella Chromogenic Agar was inoculated with samples from the nasal and hand swab (Oxoid, Hampshire, England). All plates underwent a 24-hour aerobic incubation period at 37°C. Gram staining was used to confirm further *E. coli* colonies that were first suspected to be present in the media.

Antimicrobial Sensitivity Pattern of *E. coli*: On Muller Hinton agar (Oxoid Ltd, Hampshire, UK), susceptibility testing was carried out using the Kirby Bauer-recommended agar disc diffusion technique. The following antibiotics were employed in the appropriate concentrations: Ten grams of each of the following: Penicillin (P, 10 grams), Amoxicillin-Clavulanic Acid (AMC, 30 ig), Ceftriaxone (CRO, 30 ig), Levofloxacin (CIP, 5 g), Amikacin (AK, 30 ig), Erythromycin (E, 15 ig), Gentamicin (CN, 10 ig), Azithromycin (AZM, 30 ig), Cefotaxime (CTX, 30 ig) (P 10 units), Cefepime (FEP, ig), Sulfamethoxazole (SXT, 23.75/1.25 ig). For the antimicrobial susceptibility test, quality control strains of *S. aureus* ATCC 25923 and *E. coli*

ATCC 25922 were employed. According to the Clinical and Laboratory Standards Institute methodology, the findings of the resistance and sensitivity tests were interpreted.⁹

RESULT

Prevalence of *E. coli* from hospital food handler in Jember, Indonesia

Nasal and hand carriage of *E. coli*: 24 (41.37%) of the 58 food handlers working in the hospital in Jember were colonized with *E. coli*. The frequency of *E. coli* isolation from hands, noses, and both (hands and noses) were 9 (13.23%), 13 (19.11%), and 2 (2.94%), respectively (Table 1).

Antimicrobial sensitivity pattern

The antimicrobial susceptibility of *E. coli* from hospital food handler samples is shown in Table 2. From Table 2, *E. coli* of hospital food handlers' hand swabs were highly resistant to penicillin, Cefotaxime, ceftriaxone, erythromycin (90%), and amoxiclav (70%). Between 60% and 90%, susceptibility was observed for levofloxacin, azithromycin, gentamicin, and amikacin. Intermediate resistance between 30% and 40% for cefepime, cotrimoxazole, and levofloxacin.

Escherichia coli isolates from hospital food handler nasal swabs were also highly resistant to Cefotaxime (85.71%), penicillin and cefepime (71.43%), erythromycin and ceftriaxone (57.14%) but susceptible to gentamicin (85.71%). Intermediate resistances of 35.71%, 21.43%, and 21.43% were observed for erythromycin, amoxiclav, and ceftriaxone, respectively.

The antimicrobial resistance profile and MAR index of the *E. coli* isolates are shown in Tables 2 and 3. All *E. coli* isolates from hand and nasal swabs were resistant to at least two antibiotics. The resistant patterns (MAR index = 0.33), PAmcFepCtxCroE (MAR index = 0.55), and PAmcFepCtxCroECn (MAR index = 0.64) were the commonest among the hand swab *E. coli* isolates. These patterns were exhibited by two isolates each. Regarding nasal swabs, *E. coli* isolates, the resistant pattern PE (MAR index = 0.18) and PAmcCtxE with MAR index of 0.36 was the commonest. This pattern was

exhibited by two isolates each. One isolate from a nasal swab source was resistant to as many as nine different antibiotics (PFepCtxCroAzmECnAkSxt; MAR index of 0.82).

DISCUSSION

Food handlers who handle food improperly run the danger of exposing the public or consumers to foodborne illnesses and pollution.¹⁰ Therefore, this study was undertaken to assess the prevalence of *E. coli* among food handlers and the antibiotic susceptibility profile of the isolated bacteria in Jember hospital, Indonesia. The hospital environment may facilitate pathogen spread. Polluted environments include those inhabited by colonized and sick patients. Foodborne illnesses are more common in older people, young children, babies, and those with particular illnesses, including cancer, diabetes, HIV infection, and patients undergoing organ transplants.¹¹ Food

handlers are one of the major sources of food contamination, according to studies from various nations.^{12,13}

Escherichia coli is one of many different types of bacteria. Most *E. coli* strains are benign, but others have developed traits, like the ability to produce toxins, that render them hazardous to humans. *E. coli* pathogenic variations, also known as pathovars or pathotypes, are a significant source of illness and mortality worldwide. Many of these pathotypes severely threaten public health due to their low infectious doses and widespread transmission routes through food and water. When people or animals consume food or water contaminated with the excrement of infected humans or animals, *E. coli* is transmitted. Animal slaughter and processing frequently result in the contamination of animal products. Produce and irrigation water can become contaminated when animal dung is used as fertilizer for crops. *E. coli* has a long

lifespan in the environment and can multiply in fruits, vegetables, and other foods.²

Cross-contamination and sanitation knowledge were rated as fair (67.5%). Similar findings from other studies have demonstrated that food workers needed to understand areas of cross-contamination and sanitization. This suggests that those who handle food must be aware of the steps required for cross-contamination prevention and cleanliness. Most foodborne infections “have been related to food handling mistakes during food preparation.” Foodborne disease concerns are likely to materialize because these operations are being carried out wrong. This also points to ineffectiveness or a lack of cross-contamination training.¹⁴

According to this study, 14.71% and 20.09% of food workers in various establishments in Jember, Indonesia, had *E. coli* on their hands or in their noses. This result demonstrates that food workers are a significant source of foodborne diseases. The observed carriage rate might not differ from studies conducted in Ethiopia. (1.9%-2.7%)^{10,15} and Qatar (17.1%).¹⁶ However, it is lower than the study findings reported from Gambia (28.6%).⁸ This disparity could be explained by several things, including the workers’ hygiene practices, their level of education, the cleanliness of the tools and surroundings in which they work, and the rules in effect in each country. The gap in the carriage rate may be caused by differences in the study design, such as sample size and technique

Table 1. Prevalence of *E. coli* from hospital food handler in Jember, Indonesia.

Hospital	Hand Swab				Nasal Swab			
	Negative		Positive		Negative		Positive	
	n	%	n	%	n	%	n	%
A	12	17.65%	0	0.00%	11	16.18%	1	1.47%
B	12	17.65%	2	2.94%	11	16.18%	3	4.41%
C	8	11.76%	0	0.00%	5	7.35%	3	4.41%
D	10	14.71%	3	4.41%	10	14.71%	3	4.41%
E	6	8.82%	2	2.94%	8	11.76%	0	0.00%
F	4	5.88%	1	1.47%	4	5.88%	1	1.47%
G	6	8.82%	2	2.94%	5	7.35%	3	4.41%
Total	58	85.29%	10	14.71%	54	79.41%	14	20.59%

Table 2. Sensitivity pattern of *E. coli* isolated from in a Jember hospital food handler’s handswab October to November 2022.

AB	Hand Swab						Nasal Swab					
	Sensitive		Intermediate		Resistance		Sensitive		Intermediate		Resistance	
	N	%	N	%	N	%	N	%	N	%	N	%
P	1	10.00%	0	0.00%	9	90.00%	3	21.43%	1	7.14%	10	71.43%
AMC	3	30.00%	0	0.00%	7	70.00%	4	28.57%	3	21.43%	7	50.00%
FEP	1	10.00%	3	30.00%	6	60.00%	4	28.57%	0	0.00%	10	71.43%
CTX	0	0.00%	1	10.00%	9	90.00%	1	7.14%	1	7.14%	12	85.71%
CRO	0	0.00%	1	10.00%	9	90.00%	3	21.43%	3	21.43%	8	57.14%
AZM	9	90.00%	1	10.00%	0	0.00%	10	71.43%	1	7.14%	3	21.43%
E	0	0.00%	1	10.00%	9	90.00%	1	7.14%	5	35.71%	8	57.14%
CN	7	70.00%	1	10.00%	2	20.00%	12	85.71%	1	7.14%	1	7.14%
AK	8	80.00%	1	10.00%	1	10.00%	11	78.57%	2	14.29%	1	7.14%
LEV	6	60.00%	4	40.00%	0	0.00%	10	71.43%	3	21.43%	1	7.14%
SXT	3	30.00%	3	30.00%	4	40.00%	9	64.29%	2	14.29%	3	21.43%

Table 3. Antibiotic resistance profile and multiple antibiotic resistance index (MAR index) of individual *E. coli* from hospital food handler hand swab.

Sample Code	Antibiotic-Resistant Profile	Number of Antibiotics	MAR Index	MDR
B 4 TT	CtxCro	2	0.18	Non-MDR
B 12 TT	PAmcFepCtxCroE	6	0.55	MDR
D 3 TT	PCtxCroESxt	5	0.45	MDR
D 4 TT	PAmcFepCtxCroE	6	0.55	MDR
D 7 TT	PAmcFepEAk	5	0.45	MDR
E 4 TT	PAmcFepCtxCroECn	7	0.64	MDR
E 5 TT	PAmcFepCtxCroECn	7	0.64	MDR
F 3 TT	PCtxCroESxt	5	0.45	MDR
G 1 TT	PAmcFepCtxCroE	6	0.55	MDR
G 5 TT	PAmcFepCtxCroESxt	7	0.64	MDR

Table 4. Antibiotic resistance profile and multiple antibiotic resistance index (MAR index) of individual *E. coli* from hospital food handler nasal swab.

Sample Code	Antibiotic-Resistant Profile	Number of Antibiotics	MAR Index	MDR
KW 10 NS	CtxAzmElev	4	0.36	MDR
BL 3 NS	PE	2	0.18	Non-MDR
BL 7 NS	AmcFepCtx	3	0.27	MDR
BL 11 NS	PAmcFepCtx	4	0.36	MDR
JK 3 NS	PFepCtxCro	4	0.36	MDR
JK 5 NS	AmcFepCtxCro	4	0.36	MDR
JK 7 NS	PAmcFepCtxCro	5	0.45	MDR
SB 2 NS	PAmcCtxE	4	0.36	MDR
SB 3 NS	FepE	2	0.18	Non-MDR
SB 5 NS	PAmcFepCtxCroE	6	0.55	MDR
DK 1 NS	PFepCtxCroAzmESxt	7	0.64	MDR
DK 6 NS	PAmcFepCtxCroSxt	7	0.64	MDR
DK 7 NS	PFepCtxCroAzmECnAkSxt	9	0.82	MDR
KL 2 NS	PE	2	0.18	Non-MDR

of *E. coli* identification. The study participants' low personal cleanliness, the localities' inadequate sanitation, and different sample methodologies may also have an impact on carrier rates.⁸

The present study's antibiotic resistance of *E. coli* isolates of hand and nasal swabs is comparable. The overall resistance (50.91% vs 41.56%), intermediate resistance (14.55% vs 14.29%), and susceptibility (34.55% vs 44.16%) for hand swabs and nasal swabs, respectively, were similar. Intermediate resistance indicated associated with an uncertain therapeutic effect.¹⁷ *E. coli* from both sources displayed great resistance to erythromycin, a macrolide, and cephem (Cefotaxime), but showed vulnerability to erythromycin (azithromycin). The

E. coli hand and nasal isolates shared similarities in their susceptibility to the antibiotics cephalosporin (ceftriaxone), aminoglycoside (gentamicin), and sulfonamide (sulphamethoxazole/trimethoprim).¹⁷

All *E. coli* isolates from hand and nasal samples were resistant to at least two different antibiotics. Those were 90% multidrug-resistant hand swab isolates and 78.575 nasal swab isolates. This is higher than the report from Gondar, Ethiopia (41.2%).¹⁵ Furthermore, hand-swab *E. coli* isolates were resistant to seven (30%), six (30%), and five (30%) different antibiotics. In comparison, nasal swab *E. coli* isolates were resistant to nine (7.14%), seven (14.29%), six and five (7.14%), and four (35.71%) different antibiotics.¹⁵

Foodborne infections have evolved in their resistance to antibiotics throughout time. Foodborne isolates from the exact or other origins can have different or similar resistance patterns. According to reports, these variances are widely attributable to variations in geographical regions, the types of bacteria involved, the methods used to produce the animals, the usage of antibiotics, sample methods, and the period used for sampling.¹⁵

The strength of this study is that there has not been any investigation about the resistance pattern of *E. coli* taken from hand and a nasal swab from food handlers in Indonesia, especially in East Java. We have several limitations in this study; among others, we did not examine other factors that could affect *E. coli* contamination in food handlers, such as the cleanliness of cooking utensils, level of knowledge, facilities, and infrastructure in the hospital and the process of preparing food ingredients.

CONCLUSION

In conclusion, these findings highlight the urgent need for preventative measures, such as intensified public awareness campaigns, ongoing testing of food handlers for foodborne viruses, and in-depth instruction in hygiene and primary healthcare. Finally, the current research demonstrates the need to implement effective quality control systems in locations where guests and restaurant patrons have direct access to food as a regulatory measure to safeguard the public. Future research on efficient strategies for the long-term eradication of *E. coli* hand and nasal carrier is unquestionably necessary to lower the significant risk of recurrent infections.

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CONFLICT OF INTEREST

The authors declare that they have no competing interests.

ETHICAL STATEMENT

Ethical approval was granted with the registered number 1640/H25.1.11/KE/2022 by the Ethical Committee of the Medical Faculty University of Jember.

AUTHORS' CONTRIBUTIONS

ES was the primary researcher and conceived the idea for this study. SS participated in data collection, conducted data analysis, and drafted and finalized the manuscript for publication. LI participated in data collection, conducted data analysis, and drafted and finalized the manuscript for publication. FAU, FN, and IGPH read and approved the final manuscript.

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From: Editor Bali Medical Journal editorbalimedicaljournal@gmail.com
Subject: Revision Required (BaliMedJ) Prevalence of Multi Drug Resistance Escherichia coli Isolated from Jember Hospital Foodhandler in Indonesia
Date: 21 December 2022 18.28
To: ennysuswati.fk@unej.ac.id, drsupangat@unej.ac.id, laksmiindreswari.fk@unej.ac.id, farhatinaicha@gmail.com, Nabila_085338328535_fnabilaf6@gmail.com, inasgph@gmail.com
Cc: I Gede Putu Supadmanaba supadmanaba@gmail.com, septiawansaputra3@gmail.com



Dear Authors,

Thank you for submitting your article entitled: "Prevalence of Multi Drug Resistance Escherichia coli Isolated from Jember Hospital Foodhandler in Indonesia"

Based on our author guidelines, Your article fulfilled the minimal required structure,

<https://www.balimedicaljournal.org/index.php/bmj/pages/view/authorguidelines>

In order to have a better-structured article, we suggest you edit based on a checklist and the collection in our archive

(<https://www.balimedicaljournal.org/index.php/bmj/issue/archive>).

According to the new International regulation, please fulfill the requirements below:

1. **Ethical clearance number**/statement and/or informed consent at the end of the manuscript (**Confirmed**)
2. Please state your conflict of interest in the paper. (**Confirmed**)
3. Please state the funding (if any) in your paper. (**Unconfirmed**)
4. Please state each author's contribution. (**Confirmed**)
5. Please add the strength and limitations of this study at the of the review
6. Is there any previous study that evaluates the prevalence of E.coli in hospital food handlers? If any, please mention it in the Introduction section
7. Please add the inclusion and exclusion criteria in this study in the Method section

According to our reviewers, your article needs Minor Revision. Attached is the commentary file from our reviewers. Please read it carefully and revised your manuscript accordingly.

Please revise your article and send it back to us in **7 days (December, 28th 2022)**.

In addition, I do need to remind you that Bali Medical Journal is free to submit and Open Access for our readers. However, if your manuscript is accepted for publication, as the author, you will be charged **1,000 USD for APC**. Your article will also be subjected for proofreading and editing (Formatting, Lay outing, and Galey) which costs 100 USD.

For revising your article, we offer you editing and revising assistance which is provided by our official editing partner REVISE and according to your revision status, it will cost **150 USD**. Please confirm if you agree with this information.

Thank you for trusting us with your hard work and we are looking forward for your response.

Warm regards,

Executive Editor BaliMed

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From: enny suswati ennysuswati.fk@unej.ac.id

Subject: Re: Revision Required (BaliMedJ) Prevalence of Multi Drug Resistance Escherichia coli Isolated from Jember Hospital Foodhandler in Indonesia

Date: 3 February 2023 08.45

To: Editor Bali Medical Journal editorbalimedicaljournal@gmail.com

ES

Thanks a lot.

Best regards

Enny

On Fri, Feb 3, 2023 at 8:36 AM Editor Bali Medical Journal <editorbalimedicaljournal@gmail.com> wrote:

Dear authors,

Thank you for your confirmation

We will progress this latest version to the galley formatting process and get ready to be published

Best regards

Bali Medical Journal Editor

On Thu, Feb 2, 2023 at 9:18 PM enny suswati <ennysuswati.fk@unej.ac.id> wrote:

Dear Editor,

I sent a final revised article. Please process this further.

Best Regards

Enny S

On Thu, Feb 2, 2023 at 9:37 AM Editor Bali Medical Journal <editorbalimedicaljournal@gmail.com> wrote:

Dear Author,

We would like to inform you that the revised version of the manuscript entitled "**Prevalence of Multi Drug Resistance Escherichia coli Isolated from Jember Hospital Foodhandler in Indonesia**" [Manuscript ID: 4015]" has been well received.

Final Decision: Accepted with minor revision

With this email attached several documents of your submitted article "**Prevalence of Multi Drug Resistance Escherichia coli Isolated from Jember Hospital Foodhandler in Indonesia**":

- Plagiarism reports of the original manuscript
- Final commentary
- The revised manuscript

The plagiarism reports of your original manuscript is 20%, which has already fulfilled the originality criteria.

The commentary file is a summary of the reviews of your manuscript. Our editor has fixed some sections in your manuscript according to the reviewer's suggestion.

If there is any further revision that you would like to make yourself, please send the revised version of your manuscript as soon as possible.

Otherwise, **please let us know if you are already satisfied** with the current revised manuscript. Inaccuracy in sending the revised manuscript will affect the time of publication.

Warm regards,

Executive Editor BaliMedJ

On Sun, Jan 29, 2023 at 5:37 PM enny suswati <ennysuswati.fk@unej.ac.id> wrote:

Dear Editor,

I sent a revised article.

Best Regards

Enny S

On Tue, Jan 24, 2023 at 2:43 AM enny suswati <ennysuswati.fk@unej.ac.id> wrote:

Thank you, I will do that.

On Mon, Jan 23, 2023 at 10:34 PM Editor Bali Medical Journal <editorbalimedicaljournal@gmail.com> wrote:

Dear authors,

Thank you for your confirmation we have received your payment

Regarding your manuscript, we still have some suggestions to fulfill the minimum requirement of our journal Please take a look at the Commentary files attached below, and revise accordingly

Please send us the revised version of the manuscript in **7 days (30th January, 2023) (directly edit in the file named 4015-BMJ-Final Edit REV1)**

Best regards
Bali Medical Journal Editor

On Fri, Jan 20, 2023 at 10:36 AM enny suswati <ennysuswati.fk@unej.ac.id> wrote:
Dear Editor,
I paid for APC. Transfer proof is attached.

Best Regards

Enny S

On Thu, Jan 19, 2023 at 9:47 PM Editor Bali Medical Journal <editorbalimedicaljournal@gmail.com> wrote:
Dear Authors,

Thank you for your confirmation.

After considering the suggestion from reviewers and also the quality of your revision (assisted by REVISE), we decided to accept your manuscript for publication

Attached below is the invoice for your article and please use the rate from your bank when you want to pay in IDR.

Also please send us the proof of your payment through this email, so we can process your article for publication.

Your LoA will send 1 or 2 days after we confirm your payment

Congratulations on the acceptance of your article. We are looking for your future publication.

On Tue, Jan 17, 2023 at 2:24 PM enny suswati <ennysuswati.fk@unej.ac.id> wrote:

Dear editor,

Thank you for the reduction. Please continue with the procedure.

Regards,

Enny

On Mon, Jan 16, 2023 at 9:57 PM Editor Bali Medical Journal <editorbalimedicaljournal@gmail.com> wrote:
Dear Author

Regarding your request for a discount on the APC, we can clarify that our journal is Open Access and free for submission. According to our regulation, the accepted article must pay the Article Processing Charge and Proofread with a total of 1,100 USD without considering the author's origin.

Therefore, after considering your article and its importance in the medical field, we have a discount policy for both of your articles, so you only have to pay **800 USD** for the Article Processing Charge and **100 USD** for Proofread (a total of **900 USD**) for each article

Thank you for your consideration

Warm regards

Executive Editor BaliMedJ

On Tue, Dec 27, 2022 at 10:12 PM enny suswati <ennysuswati.fk@unej.ac.id> wrote:
Dear Editor,

I sent a revised article and a letter from the vice dean for a waiver of APC. Because until now, I couldn't log in to this link (<https://www.balimedicaljournal.org/index.php/bmj/pages/view/authorguidelines>). I tried to reset my password, but no email confirmation was received. I would appreciate your help.

Best regards,
Enny Suswati
Lab. Microbiology
Faculty of Medicine, University of Jember
HP. +62 8123482238

On Tue, Dec 27, 2022 at 7:09 AM enny suswati <ennysuswati.fk@unej.ac.id> wrote:
Dear Editor,

Thank you for the information. But until now, I couldn't log in to this link (<https://www.balimedicaljournal.org/index.php/bmj/pages/view/authorguidelines>). I tried to reset my password, but no email confirmation was received. And I want to apply for a waiver. I would appreciate your help.

Best regards,
Enny Suswati

On Wed, Dec 21, 2022 at 6:28 PM Editor Bali Medical Journal <editorbalimedicaljournal@gmail.com> wrote:

Dear Authors,

Thank you for submitting your article entitled: "**Prevalence of Multi Drug Resistance Escherichia coli Isolated from Jember Hospital Foodhandler in Indonesia**"

Based on our author guidelines, Your article fulfilled the minimal required structure,

<https://www.balimedicaljournal.org/index.php/bmj/pages/view/authorguidelines>

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According to the new International regulation, please fulfill the requirements below:

1. **Ethical clearance number**/statement and/or informed consent at the end of the manuscript (**Confirmed**)
2. Please state your conflict of interest in the paper. (**Confirmed**)
3. Please state the funding (if any) in your paper. (**Unconfirmed**)
4. Please state each author's contribution. (**Confirmed**)
5. Please add the strength and limitations of this study at the of the review
6. Is there any previous study that evaluates the prevalence of E.coli in hospital food handlers? If any, please mention it in the Introduction section
7. Please add the inclusion and exclusion criteria in this study in the Method section

According to our reviewers, your article needs Minor Revision. Attached is the commentary file from our reviewers. Please read it carefully and revised your manuscript accordingly.

Please revise your article and send it back to us in **7 days** (**December, 28th 2022**).

In addition, I do need to remind you that Bali Medical Journal is free to submit and Open Access for our readers. However, if your manuscript is accepted for publication, as the author, you will be charged **1,000 USD for APC**. Your article will also be subjected for proofreading and editing (Formatting, Lay outing, and Galey) which costs 100 USD.

For revising your article, we offer you editing and revising assistance which is provided by our official editing partner REVISE and according to your revision status, it will cost **150 USD**. Please confirm if you agree with this information.

Thank you for trusting us with your hard work and we are looking forward for your response.

Warm regards,

EXECUTIVE EDITOR BaliMedJ

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Letter of Acceptance

24 January 2023

**Dear: Enny Suswati^{1*}, Supangat Supangat², Laksmi Indreswari³, Farhatina Nur U'alifa⁴,
Faiza Nabila⁴, Inas Gama Putri Hertian⁴**

¹Microbiology Lab., Medical Faculty, Universitas Jember, Indonesia

²Pharmacology Lab., Medical Faculty, Universitas Jember, Indonesia

³Anatomy Lab., Medical Faculty, Universitas Jember, Indonesia

⁴Graduate student, Medical Faculty, Universitas Jember, Indonesia

*Corresponding: Enny Suswati. email: ennysuswati.fk@unej.ac.id

I am very excited to accept your paper entitled:

“Prevalence of multidrug-resistant Escherichia coli isolated from Jember hospital food handler in Indonesia”

Your paper will be published in the issue of of Vol. 12 Number 1, 2023.

<http://dx.doi.org/10.15562/bmj.v12i1.4015>

(Online Link: <http://balimedicaljournal.org/index.php/bmj/article/view/4015>).


And it usually takes 2 to 4 months for your journal to show up at Google Scholar, but if you need it fast, you may add it up manually using your google scholar account. The CrossRef and DOI number usually activate in 3 until 6 months.


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23. Science Impact Factor (SIF)
24. Genamics
25. ASEAN Citation Index (ACI)
26. UDL-Edge (Malaysia)

Please do not hesitate to contact us if you need anything. It has been a pleasure for us to proofread and edit your work, and we are looking forward to your colleagues and your other papers in the near future.

Agreed/Menyetujui by:

Menyetujui,
Bali Medical Journal

Prof. Dr. dr Sri Maliawan, SpBS (K)
Editor in Chief

Menyetujui,
Bali Medical Journal

Prof. Dr. Ir. Ida Bagus Putra Manuaba, MPhil
Associate Editor