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Covid-19 Prevention and Early Detection Education: Scoping Review

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Abstract

The Coronavirus disease 2019 (Covid-19) outbreak has been designated as a public health emergency that can be troubling for the world and the virus has now spread to various countries and territories. The knowledge regarding prevention of Covid-19 is still limited. The Centers for Disease Control and Prevention always recommends daily preventive measures to help prevent the spread of Covid-19. The purpose of this study was to determine prevention education and early detection of Covid-19. The method used in this research is literature study method. Data was conducted through database searches of Google Scholar, PubMed, Google and Science Direct. The results of this scoping review, education on the prevention and detection of Covid-19 can be done in various ways, one way is to increase public knowledge about Covid-19 transmission such as online counseling using google form, questionnaire link sent via email, whatsapp and social media and using zoom media and also always use a mask every time you travel, keep your distance from other people and always wash your hands. Early detection of Covid-19 by carrying out a Rapid Test and also a Swab and measuring body temperature. Thus, early detection of Covid-19 can be detected quickly.

Key Words: *Education, Prevention, Early Detection, Covid-19*

Introduction

Coronavirus is a virus that causes illness that can cause symptoms from mild to severe. There are two types of Coronavirus that are known to cause disease with severe symptoms such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS) (Ministry of Health, 2020). The World Health Organization (WHO) named the new virus Severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) and the name of the disease as Coronavirus disease 2019 (Covid-19) (Yuliana, 2020).

The outbreak of Coronavirus disease 2019 (Covid-19) has been declared a public health emergency that can be troubling to the world and the virus has now spread to various countries and territories (WHO, 2020). Covid-19 as a new type of virus was first identified in Wuhan, China in December 2019. This viral infection then spread throughout China and various other countries around the world which were designated as a pandemic by the World Health Organization (WHO) (Swastika). , 2020).

The global situation is that the total confirmed cases of Covid-19 as of October 3, 2020 are 34,396,222 cases with 1,024,675 deaths (CFR 3.0%) in 215 infected countries including Indonesia. Meanwhile, in the situation in Indonesia, there were total confirmed cases of Covid- 19 as of October 3, 2020, which was 299,506 cases with 11,055 deaths (CFR 3.7%) in 34 provinces, there were 497 regencies/cities affected by positive confirmed cases of Covid-19 (Kemenkes RI). , 2020).

There are two main ways of transmitting COVID-19, namely through respiratory droplets and contact. Respiratory droplets or droplets are obtained when a person coughs or sneezes. Everyone who is in close contact (within a radius of 1 m) with a person who has symptoms of respiratory distress such as coughing or sneezing will be at risk of exposure to respiratory droplets which may cause infection (infectious). very easy to experience the symptoms of Covid-19. Droplets can also fall onto surfaces where the virus remains active. Therefore, the immediate environment of an infected person can be a source of transmission (contact transmission) (WHO, 2020).

The initial symptoms of Covid-19 are body heat accompanied by a dry cough to shortness of breath which eventually leads to Acute Respiratory Distress Syndrome (ARDS) or respiratory failure until death. Symptoms can quickly depend on the patient's level of immunity (Setiawan, 2018).

The diagnosis of Covid-19 can be made using real-time reverse-transcriptase polymerase chain reaction (RT-PCR). Based on a report from the China WHO joint committee, ideally in early detection it is done by RT-PCR examination in all patients with diseases such as influenza and severe acute respiratory infections. However, this method is not widely available because when carrying out the rRT-PCR procedure in diagnosing Covid- 19 requires laboratory security with biosafety level III (BSL 3) specifications (Arif and Muchtar, 2020).

Detection of Covid-19 in Indonesia uses Rapid Antibody Tests and Antigen Rapid Tests on OTG which are contact cases from Covid-19 confirmed patients. In addition, this test can also be used to detect cases of ODP and PDP in areas that do not have facilities for RT-PCR examination or do not have specimen collection media. Antibody Rapid Test and Antigen Rapid Test are initial screening, therefore the results of these tests must be confirmed using RT-PCR (Respati and Rathomi, 2020).

Prevention of Covid-19 in knowledge related to its prevention is still limited. The Centers for Disease Control and Prevention always recommends daily preventive measures to help prevent the spread of Covid-19 (MD, 2020). Efforts to prevent the spread of Covid-19 are to maintain routine hand hygiene before touching the mouth, nose and eyes. Then, wash your hands with water and soap, if there are no hand washing facilities, you can use 70- 80% alcohol hand sanitizer, good and correct cough and sneeze etiquette. If you have respiratory symptoms, you can use a mask and go to health facilities and

maintain a distance of at least one meter. When outside the home, the World Health Organization (WHO) says it is important to avoid shaking hands and wearing a mask (Supriatun et al., 2020).

Based on the description above, researchers are interested in conducting research to review education on prevention and early detection of Covid-19 so as to minimize the potential for the spread of Covid-19 during the current pandemic.

Resaecrh Methods

The research method used in this research is literature study in the form of Scoping review. Scoping review is a relatively new approach to evidence synthesis and its aim is to provide an overview of research evidence.

A. Article Criteria

The inclusion and exclusion criteria for articles used in this scoping review are as follows:

1. Inclusion Criteria

a. Articles used in the last 10 years (2011-2020).
b. The articles used are only related to education on prevention and early detection of Covid-19.
a. c. The articles were obtained through the sites https://scholar.google.co.id/, https://pubmed.ncbi.nlm.nih.gov/, https://www.sciencedirect.com/ and https://www.google .com.
c. Articles that can be accessed full text.

2. Exclusion Criteria

a. Articles contained abstract only.
b. Double article.
c. Theses, dissertations, and theses.

B. Source of Information

The sources of information used are bibliographic searching (searching through electronic databases), gray literature, and hand searching. Bibliographic searching is searching for articles through digital/electronic databases. The electronic database used by the literature is the type of document that includes reports, conference abstracts or proceedings, and white papers. Hand searching is a manual search on a bibliography of articles that have passed the article selection process (Gasparyan et al., 2013).

C. Search Strategy

The article search strategy in this scoping review will apply the recommendations from the Joana Briggs Institute (JBI) to identify articles that match the topic of the scoping review (The Joanna Briggs Institute, 2015). The search strategy based on the Joana Briggs Institute (JBI) consists of three stages, as follows:

1. Initial keyword search in the PubMed and Science Direct databases based on the PICO component (Problem, Intervention, Comparison, and Outcome). Keywords that represent P (Covid-19), I (Education prevention), C (Early detection), O (Covid-19 prevention) and use the Boolean "OR" and "AND". Next, an analysis was carried out on the words contained in the article (title, abstract, and keywords) that were found previously to find the final keywords and queries.

2. Search articles using final keywords and queries in two databases, namely PubMed and Science Direct.

3. Search for additional studies from the reference list or bibliography on previously found articles (hand searching). The author will also search for gray literature using Google Scholar and Google.

D. Article Selection Process

Scoping this review using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines is an evidence-based minimum set of items intended to help authors report various systematic reviews and meta- analyses assessing the benefits and harms of health care interventions. PRISMA focuses on ways in which authors can ensure transparent and complete reporting of this type of research (Liberati et al., 2009).

The article selection process aims to identify studies that will be included in the scoping review (Ahmad et al., 2020). The article selection process consists of two stages (Djasri et al., 2019).

1. Articles will be screened based on title, abstract, and inclusion and exclusion criteria using filters from the database.

2. Articles that pass the first stage of the article selection process will be subject to a full-text review of the article.

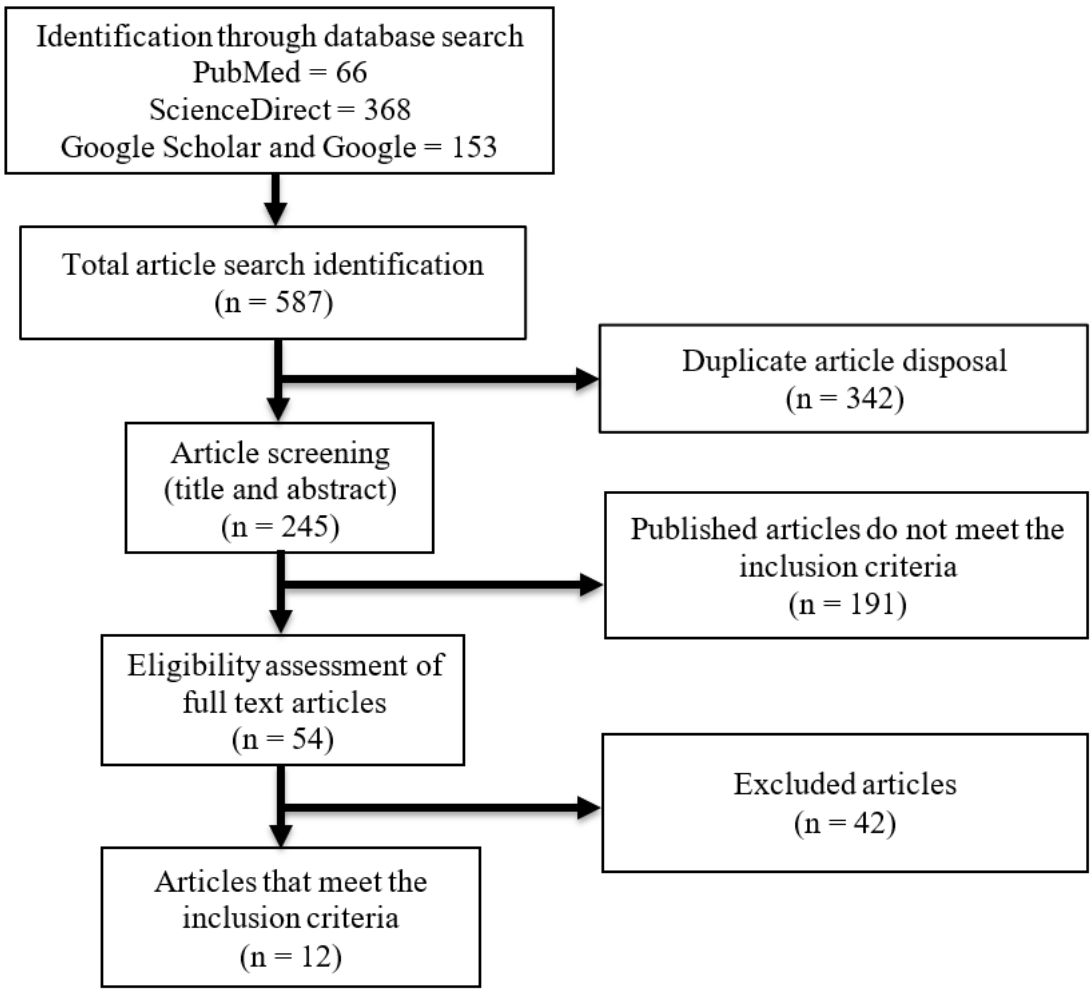

Diagram 2. PRISMA (Preferred Reporting Items for Systematic Reviews and Meta- Analyses)

E. Data Extraction

Extraction of article data by entering several variables, such as author, year of publication, article title, type of article source (original paper or gray literature), research methods, and conclusions, which will be summarized in a table.

F. Data Items

Data items are lists and definitions of research variables whose data are taken from each reviewed article.

Results

A. Results of Selection of Evidence Sources

The keyword search results using the Google Scholar, PubMed, Google and Science Direct databases based on keywords found 587 articles. All articles were screened to obtain 342 duplicate articles. The results of the duplicate filtering of articles left 245 articles, the articles were re-filtered by filtering titles and abstracts that matched the topic and year of publication, 191 articles that did not meet the inclusion criteria were obtained, from the results of abstract screening and titles, 54 articles remained. The remaining articles were screened for full-text eligibility and 42 inaccessible articles were obtained, and the final results that matched the inclusion criteria were 12 articles. Articles selected according to the inclusion criteria will be reviewed for each article.

B. Characteristics of Sources of Evidence

There were 12 articles that were included in the inclusion criteria that would be reviewed. The articles were published within the last 10 years and all in 2020 (100%). Shows that research on Covid-19 is all in the latest journals because the Covid-19 incident only occurred this year. Of the 12 articles, 11 articles were conducted in foreign countries such as China, India, Pakistan, Ethiopia, Switzerland and all articles published in English with a percentage of 91.7% and 1 article or (8.3%) from Indonesia. The research method is generally a cross-sectional study. The characteristics of the sources of evidence in the articles that fall into the inclusion criteria are presented in table 2.

Article Characteristics	Jumlah Artikel (n= 12)	Persentase
Publication Year:2020	12	100%
Study Location :Ethiopia Croatia		
India China Pakistan	1	8,3%
Japan	1	8,3%
SwitzerlandIndonesia	1	8,3%
	5	41,7%
	1	8,3%
	1	8,3%
	1	8,3%
	1	8,3%
Language :		
English Indonesia	11	91,7%
	1	8,3%
Research methods :Cross Sectional		
ExperimentQualitative	10	83,4%
	1	8,3%
	1	8,3%
Research Sample:		
1) TraditionalCleric and Physician	1	8,3%
2) Student	2	16,7%
3) Covid-19	5	41,7%
patients	2	16,7%
4) Elementary school students	1	8,3%
5) Adults	1	8,3%
6) Campus community		
Publication Type:		
1) Journal article	6	50%
2) Scientific publications	6	50%

Table 2. Characteristics of Evidence Sources

C. Synthesis of Results

Based on the table of results from sources of evidence from journals on education on prevention and early detection of Covid-19, a description of the results of the journals in research conducted by Asmelash et al (2020) regarding knowledge, attitudes and practices towards the prevention and early detection of Covid-19 is obtained. and related factors among Religious Scholars and Traditional Physicians in Gondar City, Northwest Ethiopia: A community-based study. The research method was conducted through face-to-face interviews using a structured questionnaire. Interviews were completed according to WHO standards for Covid-19 prevention. The results obtained were 410

religious scholars and traditional healers were included in this study with a response rate of 97.1%. Of the total participants, 60.7% had good knowledge, 34.1% had a positive attitude and 15.6% had good practices towards the prevention and early detection of Covid- 19. Less than a third of the participants practiced physical distancing (28%) and used face masks (17.8%). In multivariate logistic regression, age, educational status and marital status were significantly associated with knowledge scores. Likewise, age and marital status were significantly associated with positive attitude scores. In addition, age, educational status, and presence of underlying disease were significantly associated with good exercise scores.

The results of research conducted by Praveenha et al (2020) on the effectiveness of e-learning among students about knowledge about Covid-19 using a research method using an online semi- structured questionnaire developed using a google form, questionnaire links sent via email, whatsapp and other social media to the sample obtained the results of this study indicate that in the pre-test 48 (96%) universities have knowledge and only 2 (4%) have adequate knowledge. This knowledge was obtained mainly through mass media, and the post-test revealed that 41 (82%) had adequate knowledge and only 9 (18%) had moderate knowledge. It is also evident that participants' knowledge has increased significantly after the e- learning program about Covid-19.

The results of research conducted by Yudha et al (2020) regarding increasing knowledge of campus communities through online education about the Covid- 19 mechanism using online education methods, where respondents have filled out the instrument and evaluation of activities and remain in the Zoom meeting room, the results of the socialization show that most of the participants understand about the mechanism of Covid-19; knowledge (good) 67.1% and attitude (positive) 59.5%. The results of the FGD showed that participants discussed the dangers of the virus (mechanism of transmission, virus resistance, working methods) (52.4%), prevention efforts (23.8%), infected subjects (14.3%) and symptoms of Covid- 19 (9.5%). A total of 92.0% stated that they understood and made efforts for prevention based on the information provided. This activity can increase knowledge about the mechanism of Covid- 19 in an effort to prevent transmission by (24.9%). Thus, it is important to carry out educational activities, especially with online methods regularly and periodically in an effort to increase knowledge of conditions during the pandemic.

Results of research conducted by Chen et al (2020) on hand hygiene, mask wearing behavior and related factors during the Covid-19 epidemic a cross- sectional study among elementary school students in Wuhan, China using an online questionnaire research method forwarded to students' parents by teachers and filled in by students uniformly, parents are required to supervise and explain the

questionnaire, the results obtained are 42.05% of elementary school students showing good hand washing behavior, while 51.60% have good mask wearing behavior.

Results of research conducted by Ikeda et al (2020) on clinical evaluation of self- collected saliva by Reverse Transcription- PCR (RT-qPCR), loop-mediated isothermal amplification, and Rapid Antigen Test for diagnosing Covid-19 using the all-patient study method. examined for SARS-CoV-2 by RT-qPCR using pharyngeal and nasopharyngeal swabs collected at public health institutions or hospitals according to Japan's recommended national method. Asymptomatic patients were tested by RT- qPCR due to mass screening due to outbreaks. Patient information was retrospectively collected from hospital electronic medical records. On the day of admission, patients were given a sterile tube, and they were asked to collect a saliva specimen (500 l) themselves by spitting into the tube.

D. Synthesis of Results

Based on the table of results from sources of evidence from journals on education on prevention and early detection of Covid-19, a description of the results of the journals in research conducted by Asmelash et al (2020) regarding knowledge, attitudes and practices towards the prevention and early detection of Covid-19 is obtained. and related factors among Religious Scholars and Traditional Physicians in Gondar City, Northwest Ethiopia: A community-based study. The research method was conducted through face-to-face interviews using a structured questionnaire. Interviews were completed according to WHO standards for Covid-19 prevention. The results obtained were 410 religious scholars and traditional healers were included in this study with a response rate of 97.1%. Of the total participants, 60.7% had good knowledge, 34.1% had a positive attitude and 15.6% had good practices towards the prevention and early detection of Covid- 19. Less than a third of the participants practiced physical distancing (28%) and used face masks (17.8%). In multivariate logistic regression, age, educational status and marital status were significantly associated with knowledge scores. Likewise, age and marital status were significantly associated with positive attitude scores. In addition, age, educational status, and presence of underlying disease were significantly associated with good exercise scores.

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Early detection of Covid-19 assessment is very important so that the transmission of Covid-19 can be prevented. Both pharmaceutical measures and non- pharmaceutical measures are available against Covid-19. Although pharmaceutical measures are the most effective strategy, it takes a lot of time to

develop vaccines and antiviral drugs, so they cannot control outbreaks caused by pathogens at an early stage. In these circumstances, non-pharmaceutical measures such as wearing masks and washing hands are important to reduce risk by building barriers to curb aerosol spreading and protect vulnerable populations (Aiello, A.E, 2012).

Currently, the main steps being taken abroad are maintaining proper hand hygiene and physical distancing, however, wearing a mask is also recommended in China. Washing hands is suitable for everyone, but maintaining physical distancing is only suitable for adults when they go out. For children, home isolation is one of the main steps. Washing hands with soap and wearing masks as a means of preventing and controlling infectious diseases has the advantages of simple operation, strong sustainability, high health benefits, and good health economic benefits (Labrague, L.J, 2018).

Covid-19 detection with SARS-CoV-2 virus antigen detection with rapid antigen test. RAT was performed using 2 Espline SARS-CoV-2 (Fuji Rebio Inc.) according to the manufacturer's instructions. In summary, samples for 0 2 analysis were obtained by dipping the swab provided with the RAT device into the saliva specimen 0 and then into the sample preparation mixture provided by the kit. The mixture (200 l) was added to the b port of the sample from the antigen assay. Then 2 drops of buffer were added, and the results were interpreted after 30 minutes of incubation.

Quantitative reverse transcription- PCR (RT-qPCR) assay for SARS-CoV-2 using upper and lower respiratory tract specimens (nasopharyngeal swab, throat swab, and sputum) is the gold standard for diagnosing COVID-19. Laboratory- developed assays (LDT), including RT- qPCR, high-throughput RT-qPCR systems (fully automated from RNA extraction to reporting of results without the need for highly skilled laboratory technicians), and RT-free rapid direct RNA extraction RT- qPCR (using modified master mix RT- qPCR) which has been widely used worldwide. (Ikeda et al, 2020).

Concluision and Recommendations

A. Conclusion

Based on the results of a review of 12 articles, it was found that education on the prevention and detection of Covid-19 can be done in various ways, one way is to increase public knowledge about the transmission of Covid-19 such as online counseling using google forms, questionnaire links sent via email, whatsapp and media. social media and use zoom media and also always use a mask every time you go out, keep your distance from other people and always wash your hands. Early detection of Covid-19 by conducting Rapid Test and real-time reverse-transcriptase polymerase chain reaction

(RT-PCR) as well as measuring body temperature. Thus, early detection of Covid-19 can be detected quickly.

B. Suggestion

1. Socialization is needed to the public that Covid-19 can be prevented by using masks, washing hands and maintaining distance, so that the Covid-19 chain can be broken.

2. Education is needed regarding the prevention and early detection of Covid-19 using animated video media, so that it looks more attractive.

3. It is necessary to conduct further research on education on the prevention and detection of Covid-19 among students, especially young doctors who are carrying out practice.

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