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DEVELOPMENT AND IMPLEMENTATION OF NURSING DOCUMENTATION ON CORONAVIRUS INFECTION (COVID-19) AT THE NURSING LEVEL

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Abstract

Introduction: The coronavirus infection COVID-19 caused by SARS-CoV-2 continues to spread rapidly around the world. On March 11, 2020, the WHO declared an outbreak of coronavirus infection a pandemic. The first case in Kazakhstan was registered on March 13, 2020. On March 16, a state of emergency was declared in Kazakhstan. Since March 19, quarantine has been introduced in Nur-Sultan and Almaty. From March 20, confirmed cases of COVID-19 began to be registered in other regions of the country. Since March 30, quarantine has been introduced in other cities of the country. Therefore, the maintenance of nursing documentation on coronavirus infection at the nursing level plays an important role.

Aim: Increase the level of care at the nursing level in the context of the global coronavirus infection (COVID-19) pandemic by introducing nursing documentation.

Methods: Within the framework of this study, international and domestic experience in the fight against COVID-19 was studied. The incidence and mortality of COVID-19 in the world and in Kazakhstan has been studied. The nursing documentation form (checklist) was developed using the adapted Clinical Care Classification of the International Nursing Practice Classifier.

Results: As of January 18, 2021, a total of 171,232 cases were detected in the Republic of Kazakhstan, of which 155,397 patients recovered, 2,403 cases with a lethal outcome were registered. To improve the provision of care to patients at the nursing level, a form for nursing documentation has been developed "Nursing reception and nursing care during the initial visit of the patient to the out-patient department/filter with signs of SARS, including COVID-19". According to the survey on a 10-point scale, 70.7% of the survey participants rated this form at 6-10 points, including 37.6% at 10 points.

Conclusion: The analysis made it possible to identify the nature of the epidemiological situation for coronavirus infection COVID-19 in the world, which served as the basis for the development of nursing documentation to improve preventive measures to combat coronavirus infection at the nursing process level.

Keywords: *COVID-19, pandemic, epidemiology, Kazakhstan, nursing documentation*

Резюме

РАЗРАБОТКА И ВНЕДРЕНИЕ СЕСТРИНСКОЙ ДОКУМЕНТАЦИИ ПО КОРОНАВИРУСНОЙ ИНФЕКЦИИ (COVID-19) НА УРОВНЕ СЕСТРИНСКОГО ПРОЦЕССА

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Введение: Коронавирусная инфекция COVID-19 вызванная SARS-CoV-2 продолжает быстро распространяться по всему миру. 11 марта 2020 года Всемирной организацией здравоохранения вспышка коронавирусной инфекцией объявлена пандемией. Первый случай в Казахстане был зарегистрирован 13 марта 2020 года. 16 марта в Казахстане введено чрезвычайное положение. С 19 марта карантин введен в г.Нур-Султан и Алматы. С 20 марта подтвержденные случаи COVID-19 начали регистрировать в других регионах страны. С 30 марта карантин введен и в других городах страны. Поэтому немаловажную роль играет ведение сестринской документации по коронавирусной инфекции на уровне сестринского процесса.

Цель: повысить уровень оказания медицинской помощи на уровне сестринского процесса в условиях глобальной пандемии коронавирусной инфекции (COVID -19) путем внедрения сестринской документации.

Методы: В рамках данного исследования изучен международный и отечественный опыт в борьбе с коронавирусной инфекцией (КВИ). Изучена заболеваемость и смертность COVID-19 в мире и Казахстане. Форма сестринской документации (чек-лист) была разработана с использованием адаптированного Международного классификатора сестринской практики Clinical Care Classification.

Результаты: По состоянию на 18 января 2021 года всего в Республике Казахстан выявлено 171232 заболевших, из них выздоровели 155397 пациентов, зарегистрировано 2403 случая с летальным исходом. С целью улучшения оказания помощи пациентам на сестринском уровне, разработана форма сестринской документации «Сестринский прием и сестринский уход при первичном обращении пациента в поликлинику/фильтр с признаками ОРВИ, в том числе COVID-19». Согласно опросу по 10-бальной шкале 70,7% участников анкетирования оценили данную форму на 6-10 баллов, в том числе 37,6% на 10 баллов.

Заключение: Проведенный анализ позволяет выявить характер эпидемиологической ситуации по коронавирусной инфекции COVID-19 в мире, что послужил основой для разработки сестринской документации с целью улучшения превентивных мероприятий по борьбе с коронавирусной инфекцией на уровне сестринского процесса.

***Ключевые слова**: COVID-19, пандемия, эпидемиология, Казахстан, сестринская документация*

Түйіндеме

МЕЙІРГЕРЛІК ДЕҢГЕЙДЕ КОРОНАВИРУСТЫҚ ИНФЕКЦИЯ (COVID-19) БОЙЫНША МЕЙІРГЕРЛІК ҚҰЖАТТАМАНЫ ӘЗІРЛЕУ ЖӘНЕ ЕНГІЗУ

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Кіріспе: SARS-CoV-2 туындатқан коронавирустық COVID-19 инфекциясы бүкіл әлемге тез таралуда. 2020 жылы 11 наурызда Дүниежүзілік денсаулық сақтау ұйымы коронавирустық инфекцияның эпидемиясын пандемия деп жариялады. Қазақстанда алғашқы жағдай 2020 жылы 13 наурызда тіркелді. 16 наурызда Қазақстанда төтенше жағдай жарияланды. 19 наурыздан бастап карантин Нур-Сұлтан мен Алматыда енгізілді. 20 наурыздан бастап COVID-19 расталған жағдайлары республиканың басқа аймақтарында тіркеле бастады. 30 наурыздан бастап карантин еліміздің басқа қалаларында да енгізілді. Сондықтан мейіргерлік деңгейде коронавирустық инфекция бойынша мейіргерлік құжаттаманы жүргізу маңызды рөл атқарады.

Мақсаты: Жаһандық коронавирустық инфекция (COVID-19) пандемиясы аясында мейіргерлік деңгейдегі күтімнің деңгейін мейіргерлік құжаттаманы енгізу арқылы жақсарту.

Әдістер: Осы зерттеу аясында коронавирустық инфекциямен күресудің халықаралық және отандық тәжірибесі зерттелді. Әлемде және Қазақстанда COVID-19 ауруының жиілігі мен өлімі зерттелді. Мейіргерлік құжаттама нысаны (бақылау тізімі) бейімделген Халықаралық мейіргердік практика классификаторы Clinical Care Classification көмегімен жасалған.

Нәтижелер: 2021 жылғы 18 қаңтардағы жағдай бойынша Қазақстан Республикасында барлығы 171 232 жағдай тіркелді, оның 155 397 науқас сауығып кетті, өліммен аяқталған 2403 жағдай тіркелді. Мейіргерлік деңгейінде пациенттерге көмек көрсетуді жақсарту мақсатында «Науқасты поликлиникаға/фильтрге алғашқы қабылдау кезіндегі ЖРВИ белгілері бар, оның ішінде COVID-19 мейіргерлік қабылдау және мейіргерлік күтім» мейіргерлік құжаттама формасы әзірленді. 10 баллдық шкала бойынша жүргізілген сауалнамаға сәйкес, сауалнамаға қатысушылардың 70,7% -ы бұл форманы 6-10 баллмен бағалады, оның ішінде 10 балл бойынша 37,6%.

Қорытынды: Талдау әлемдегі коронавирустық инфекцияның эпидемиологиялық жағдайының сипатын анықтауға мүмкіндік берді, бұл мейіргерлік деңгейде коронавирустық инфекциямен күресудің профилактикалық шараларын жетілдіру мақсатында мейіргерлік құжаттаманы жасауға негіз болды.

***Түйін сөздер**: COVID-19, пандемия, эпидемиология, Қазақстан,* мейіргерлік *құжаттама.*

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Introduction

The recent outbreak of COVID-19 in Wuhan has become a public health emergency of international concern. In the absence of antiviral drugs and vaccines and the presence of asymptomatic carriers, traditional public health interventions are significantly less effective [10]. Pneumonia caused by Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) originated in Wuhan City, Hubei Province, China in December 2019. By February 11, 2020, the World Health Organization (WHO) has officially designated the disease resulting from infection with SARS-CoV-2 as the coronavirus disease 2019 (COVID-19). COVID-19 is a spectrum of clinical manifestations that usually include fever, dry cough, and fatigue, often involving the lungs. SARS-CoV-2 is highly contagious and most people are generally susceptible to infection. Wild animal hosts and infected patients are currently the main sources of the disease, which is transmitted through the respiratory tract and direct contact [9]. WHO issued a warning that while the new coronavirus infection COVID-19 from Wuhan, China is not a pandemic, it must be contained to prevent global spread [4]. On March 11, 2020, WHO declared an outbreak of coronavirus infection a pandemic [3]. Currently, COVID-19 patients are the main source of infection, and severe patients are considered more infectious than mild patients. The presence of symptoms of a respiratory infection has been associated with the release of the virus into the environment. However, asymptomatic individuals or patients in the incubation period who do not show signs or symptoms of respiratory infection can also be potential sources of infection [1]. 34.07% of cases of coronavirus infection COVID-19 were detected in asymptomatic individuals. Oran et al. Concluded that asymptomatic patients account for 40% to 45% of confirmed cases of SARS-CoV-2 [12]. At the same time, Yanes-Lane et al. indicated that the proportion of asymptomatic infections at initial screening ranged from 20% to 75% of the general population [7]. Also, samples from COVID-19 patients consistently show a positive RT-PCR (reverse transcription-polymerase chain reaction) test [5], which has never been the case in the history of human infectious diseases. In other words, asymptomatically infected people and patients who are incubating or recovering from COVID-19 can pose major challenges to disease prevention and control [3].

The first cases of COVID-19 in Kazakhstan were detected on March 13 in Almaty and Nur-Sultan. On March 16, a state of emergency was declared in Kazakhstan. All schools were closed, and student education was transferred online. Since March 19, quarantine has been introduced in Nur-Sultan and Almaty. From March 20, confirmed cases of COVID-19 began to be registered in other regions of the country. On March 26, the first two patients were discharged in Nur-Sultan and Almaty, on the same day the first death from COVID-19 was registered in Nur-Sultan (64-year-old woman). Since March 30, quarantine has been introduced in other cities of the country [6]. The highest incidence rate in Kazakhstan was noted in the two largest cities - Nur-Sultan and Almaty. It should be noted that the first patients in the country were identified in these cities. In these cities, there are a high proportion of specialized medical institutions, where critically ill patients from neighboring regions are referred. The lowest incidence rate was noted in the East Kazakhstan and North Kazakhstan regions [8]. In connection with the current situation with COVID - 19 both in the world and in Kazakhstan, the role of medical workers, including nursing specialists, is increasing

in terms of their action in specific situations: work in infectious diseases and provisional hospitals, a polyclinic, as part of mobile teams, home hospital, in post-discharge rehabilitation, etc. So, an important role is played by the maintenance of nursing documentation on COVID-19 at the nursing level.

This study aims to improve the quality of care at the nursing level in the context of the global coronavirus infection (COVID-19) pandemic by introducing nursing documentation.

Materials and methods. The research design is descriptive. Within the framework of this study, international and domestic experience in the fight against COVID-19 was studied. Publications with a depth of 1 year, regulatory legal acts of the Republic of Kazakhstan were analyzed. The incidence and mortality of COVID-19 in the world and Kazakhstan have been studied. Statistical data on morbidity and mortality from COVID-19 in the world and Kazakhstan were analyzed from the start of the pandemic to February 14, 2021.

The nursing documentation form (checklist) "Nursing reception and nursing care during the patient's initial admission to the out-patient department/filter with signs of SARS, including COVID-19" was developed using the adapted Clinical Care Classification of the International Nursing Practice Classifier. The form was rated on a 10-point scale by conducting an online survey among 180 nurses.

Results. Globally, as of February 16, 2021, 108,684,743 confirmed cases of COVID-19 were reported by the WHO, including 2,399,103 deaths. The highest incidence of COVID-19 is registered in the USA, India, and Brazil (Table 1).

Table 1.

Morbidity and mortality from COVID-19 by country according to WHO.

№	Country	Number of COVID-19 cases, absolute number	Number of deaths, absolute number
1	USA	27 309 503	480 464
2	India	10 925 710	155 813
3	Brazil	9 834 513	239 245
4	Russian Federation	4 086 090	80 520
5	United Kingdom	4 038 082	117 166
6	France	3 406 616	81 393
7	Spain	3 041 454	64 217
8	Italy	2 721 879	93 577
9	Turkey	2 586 183	27 471
10	Germany	2 338 987	65 076
50	Kazakhstan	251 959	3 246
WHO source: https://covid19.who.int			

As of February 14, 2021, 203,259 cases of COVID-19 and 2,540 deaths were registered in Kazakhstan. Thus, Kazakhstan ranks 50th out of 237 countries in terms of morbidity. The similar situation on morbidity and death is in Georgia. Table 2 provides information on the number of cases and deaths from COVID-19 in the context of the regions of the Republic of Kazakhstan. However Kazakhstani data differs from the World Health Organization.

Table 2.

Morbidity and mortality from COVID-19 in the context of regions of the Republic of Kazakhstan.

№	Region	Morbidity, absolute number	Number of deaths, absolute number
1	Nur-Sultan city	23884	385
2	Almaty city	23745	452
3	Shymkent city	6016	94
4	Akmola region	12709	104
5	Aktobe region	4102	50
6	Almaty region	10180	114
7	Atyrau region	16736	128
8	The East Kazakhstan region	21252	332
9	Jambyl Region	5772	64
10	West-Kazakhstan region	12171	199
11	Karaganda region	14778	307
12	Kostanay region	11506	40
13	Kyzylorda Region	3731	16
14	Mangistau region	4165	58
15	Pavlodar region	16411	107
16	North-Kazakhstan region	11882	42
17	Turkestan region	4219	48
	Total	203 259	2540
Kazakhstani source: https://www.coronavirus2020.kz/			

According to the ICD-10, COVID-19 is coded by medical personnel according to Table 3. However, according to the adapted International Classifier of Nursing Practice Clinical Care Classification, if COVID-19 is detected by nurses, nursing diagnoses and nursing interventions can be coded (Table 4).

Table 3.

COVID-19 coding according to ICD-10.

U07.1	**COVID-19, virus identified** Use this code when COVID-19 has been confirmed by laboratory tests, regardless of the severity of the clinical signs or symptoms. If necessary, indicate pneumonia or other manifestations of infection, use the additional code.
U07.2	**U07.2 COVID-19, virus not identified** Use this code if COVID-19 is diagnosed clinically or epidemiologically but laboratory tests are inconclusive or not available. If necessary, indicate pneumonia or other manifestations of infection, use the additional code.

Table 4.

Nursing diagnoses and nursing interventions for COVID-19 using the adapted International Clinical Care Classification of Nursing Practice.

Nursing diagnosis	Nursing interventions (care plan)
Sleep disturbance - A01.6	Sleep monitoring – A04.0
Diarrhea - B03.3 *Increased bowel movements.* Nausea - B04.1 *Aversion to food/liquids leading to vomiting.* Vomiting - B04.2	Diarrhea care – B06.4 *Actions taken to control frequent bowel movements* Control of nausea and vomiting – B62.1 *Actions to control food aversion and vomiting.*
Change in breathing - L26.0 *Change/modification of breathing function.* Breathing disorder - L26.2 *Violation of the rhythm of breathing* Disruption of gas exchange - L26.3 *An imbalance in the transport of oxygen and carbon dioxide between the lungs and the circulatory system.* Impaired ventilation - L56.0 *Inability to enter and remove air from the respiratory tract.*	Oxygen therapy – L35.0 *Actions performed using oxygen in treatment* Caring for a patient with lung disease – L36.0 *Steps taken to maintain lung hygiene* Breathing exercises – L36.1 *Actions to be taken for therapy during respiratory or pulmonary stress* Inhalation therapy – L36.3 *Actions to be taken to ensure breathing procedures* Breathing apparatus care – L36.4 *Steps taken to control and monitor the use of mechanical ventilation.*

The form (checklist) "Nursing reception and nursing care during the initial admission of a patient to an out-patient department/filter with signs of SARS, including COVID-19" is published in the Guidelines for the development and implementation of nursing documentation in practical health care organizations and posted on the website of the Republican Center for Healthcare Development http://www.rcrz.kz/index.php/ru/2017-03-12-10-51-13/metodicheskie-rekomendatsii.

According to the survey on a 10-point scale, 70.7% of the survey participants rated this form at 6-10 points, including 37.6% at 10 points.

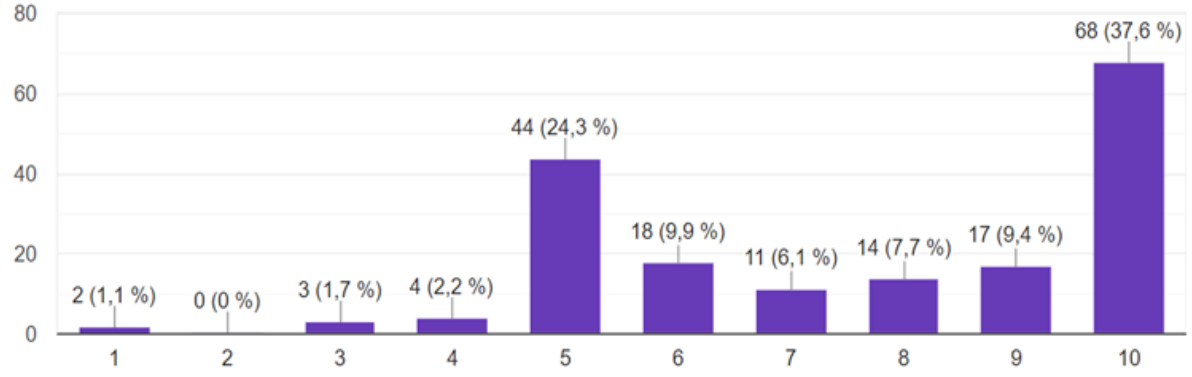

Fig. 1 - Evaluation of the nursing documentation form «Nursing reception and nursing care during the patient's initial admission to the out-patient department/filter with signs of SARS, including COVID-19»

Discussion. According to a literature review in 2007, electronic nursing records in Finland were not unified and linked to the patient's medical history. The development of national unified and standardized nursing documentation for the use of standardized nursing data enables the management and assessment of the quality of the nursing process and the integration of nursing documentation into a patient's multidisciplinary medical history [13]. Finnish nationally unified/adapted and standardized nursing documentation for the Finnish Care Classification was developed within the framework of the National Project in Finland during the period 2007-2008. Finland's electronic

health passports include information on nursing diagnosis, nursing intervention, and the outcome of nursing care, discharge [2]. In Kazakhstan, since 2018, a National project has been implemented to introduce a new model of nursing service; in 2020, the International Classifier of Nursing Practice Clinical Care Classification has been adopted but has not yet been approved at the national level.

Nursing Minimal Data Sets (NMDS) have been proposed to systematically describe nursing care. As early as 1988, Werley and Lang emphasized the need for minimal diabetes datasets that describe care in terms of nursing diagnosis, intervention, outcomes and nursing intensity. In 1991, Werley created the United States Minimum Data Sets on diabetes mellitus (US-NMDS). This was the first attempt to standardize the collection of core nursing care data to compare data on nursing care across populations, settings, geographic areas and time [11].

As the minimum data sets, checklists for various nosologies were developed for the nursing practice. One of the proposed forms "Nursing reception and nursing care during the initial visit of the patient to the out-patient department/filter with signs of SARS, including COVID-19" is currently implemented in the work of a mobile team and filters among nurses in order to reduce the burden on medical personnel. systematizing the work of nurses.

Based on the analysis of international experience, different countries have different approaches to maintaining nursing records. European countries learn from each other's experience by introducing minimal nursing data sets into the nursing process based on the Clinical Care Classification of the International Nursing Practice Classifier. Therefore, it is important in the process of reforming the nursing service in the Republic of Kazakhstan to introduce the Clinical Care Classification adapted to the conditions of the country's healthcare system.

Conclusion. Thus, the difficult situation with coronavirus infection in the world and Kazakhstan has led to the expansion of the functionality of nurses. The analysis made it possible to identify the nature of the epidemiological situation for coronavirus infection COVID-19, which served as the basis for the development of nursing documentation to improve preventive measures to combat coronavirus infection at the nursing process level.

Contribution of authors:

Smailova D.S. – scientific leadership, conceptualization, scientific support of the article, revision of the article.

Sydykova B.K. – analysis of statistical data.

Sarsenbayeva G.Z. - critical analysis, scientific support of the article.

Bolatov A.K. – analysis of international publications and article design.

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