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Implementation of Home Care Services by Community Health Centers (Puskesmas) in Makassar City, Indonesia

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Abstract

Home care services by health professionals, such as doctors, nurses, and other health care professionals, target to provide health care services, including health education, physical examination, or other treatments such as physical therapy or medication. This study aimed to evaluate the implementation of home care (nursing care and home care services) in Makassar City in accordance with government guidelines. A qualitative descriptive study was conducted by interviewing nurses (15 participants) from several community health centers (Puskesmas) in Makassar City, Indonesia who have implemented a home care program for at least a year. Four main themes had emerged, namely, management of home care services, nurses' roles in home care services, perceived barriers, and community benefits. Despite some barriers, the home care programs delivered by health care professionals including nurses in Puskesmas in Makassar City have been well implemented in accordance with the guidelines. On the basis of the obstacles faced by the nurses, one recommendation is for the government to provide specific guidelines on the types of patients to be included in these services. The government also needs to ensure that the community knows the types of patients' condition who can avail these services.

Keywords: community health centers, home care service, nurses' roles

Abstrak

Implementasi Pelayanan Perawatan di Rumah* (Home Care) *oleh Puskesmas di Kota Makassar, Indonesia*. Pelayanan perawatan di rumah* (home care) *oleh petugas kesehatan seperti dokter, perawat, dan petugas kesehatan lainnya bertujuan untuk memberikan pelayanan kesehatan meliputi pendidikan kesehatan, pengkajian fisik, atau memberikan terapi fisik ataupun pengobatan. Penelitian ini bertujuan untuk mengevaluasi kesesuaian antara implementasi pelaksanaan pelayanan* home care *di kota Makassar dengan petunjuk teknis pelaksanaan* home care *dari pemerintah. Penelitian ini adalah penelitian deskriptif kualitatif dengan melakukan wawancara mendalam kepada 15 orang perawat dari beberapa Puskesmas di kota Makassar, Indonesia, yang terlibat dalam kegiatan pelayanan* home care *minimal selama satu tahun. Terdapat empat tema utama yang ditemukan dalam penelitian ini antara lain, pengelolaan* home care*, peran perawat dalam pelaksanaan* home care*, hambatan dalam pelaksanaan* home care*, dan manfaat dari pelaksanaan* home care *di kota Makassar. Secara umum, pelaksanaan kegiatan* home care *sudah dilaksanakan sesuai petunjuk teknis dengan baik oleh perawat di Puskesmas kota Makassar walaupun masih ada beberapa hambatan dalam pelaksanaan kegiatan ini. Pemerintah diharapkan membuat petunjuk pelaksanaan (SOP) yang lebih jelas terkait pelaksanaan kegiatan ini atau melakukan pembaharuan regulasi terkait program ini.*

Kata Kunci: home care*, peran perawat, puskesmas*

Introduction

Life expectancy has risen substantially, and socio-demographic changes in the last decades have affected home care needs (Genet et al., 2012; World Health Organization, 2021). Most health care systems in many countries underwent significant transformation (Braun & Cony-beare, 2017; Genet et al., 2012). Home care has been implemented worldwide as a comprehensive system of community health care services (Braun & Conybeare, 2017; Genet et al., 2012; Shahsavari et al., 2018) where health professionals provide a form of care at patients' homes. In an ideal situation, community health care should be a multidisciplinary team effort in

which nurses play an important role alongside general practitioners, psychologists, physiotherapists, nutritionists, midwives, and other specialists (Feltner et al., 2014).

Home care services in most countries included hospital-based home nursing services, customized visiting health services, and long-term care insurance-based nursing services (Zeng et al., 2015). Home care is an ongoing program that focuses on long-term care to improve patient care, minimize treatment costs, and reduce hospitalization period and queuing at the hospital (Wojtak & Stark, 2016).

In many countries, home care services are a WHO recommendation. Home care services in the form of home visits by health professionals, such as doctors, nurses, and pharmacists, aim to provide health care services, including health education, physical examination, or other treatments such as physical therapy or medication (Zeng et al., 2015). In Australia, for example, home care is one of the fastest-growing health program and is supported by the Australian Federal Government, which also establishes home care specifically for the elderly above 65 years old or for indigenous Australians aged 50 years or above with chronic illness and disability (Palesy et al., 2018). However, the implementation of home care services is challenging and effortful due to the variety of services delivered and the lack of human resource (Shahsavari et al., 2018). As a developing country in Southeast Asia, Indonesia also has implemented home care services as one of the solutions to anticipate the number of patients who cannot be accommodated in the hospital but do not need hospital equipment (Putra et al., 2018). In Indonesia, home care service is a part or continuation of sustainable and comprehensive health services provided to individuals and families in their homes and aims to improve, maintain, or restore health or maximize the level of independence and minimize the effect of the disease (Ministry of Health Republic of Indonesia, 2014). In Indonesia, home care services are provided by hospitals, community health centers (Pus-

kesmas), and private healthcare providers (not affiliated with hospitals or Puskesmas). However, this program is not provided by all hospitals and Puskesmas in Indonesia and is mostly conducted only in large cities and province's capital. Various level of health care services are delivered to the community in accordance with the government policy in each province (Ministry of Health Republic of Indonesia, 2019). In Makassar City, home care services are mostly provided by Puskesmas. Only one hospital provides home care services, in which the program is optional but not covered by Indonesian health insurance (BPJS). The hospital mainly focused on follow-up home care services, and the patients should pay for these services.

In Indonesia, the population has rapidly grown with around 262 million people in 2017, and the morbidity rate has also increased due to tropical and degenerative diseases (Ministry of Health Republic of Indonesia, 2018). This situation is a challenge for the government towards public services in Indonesia. To date, communities complained of government programs because they neither meet the interests of the community nor provide essential benefits in terms of health, especially for the poor or lower middle class (Putra et al., 2018).

South Sulawesi, one of the provinces in Indonesia, has realized the innovation of health care and has developed home care services since 2015 (Jaringan Inovasi Pelayanan Publik Sulsel, 2019). This innovation is important especially in Makassar City because of its uneven public health services that require improvement by improving facilities and infrastructure and increasing community access to health services (Putra et al., 2018). As stated in the Makassar City government regulation, Puskesmas is the coordinator of home care service and is responsible for its management in Makassar City (Health Office South Sulawesi, 2017; Jaringan Inovasi Pelayanan Publik Sulsel, 2019). Home care services are provided by a team consisting of doctors, nurses, other health workers, and a case coordinator that is usually a nurse from Pus-

kesmas (Putra et al., 2018; Suprapto, 2018).

Home care in Makassar has been well implemented since 2015 by 46 health centers throughout the city (Putra et al., 2018) as evidenced by the number of home care service innovation users in 2016 (around 3,379 patients) (Jaringan Inovasi Pelayanan Publik Sulsel, 2019). The implementation of home care is inseparable from the help and support of the local government in the form of a mini ambulance, namely, *Dottoro'ta* (Our Doctor), ECG equipment, and Telemedicine (Putra et al., 2018). However, home care is not necessarily implemented as per the definition set by the Makassar City government. The annually growing number of home care users confirmed that this program has spread widely and is growing rapidly in Makassar City. However, the number of users does not guarantee that the quality and accuracy of the services provided follow the concept of home care and the role of health workers in providing services. A previous study described the home care program in Makassar City but did not explore the specific roles of nurses and the implementation of this program (Suprapto, 2018). Thus, evaluating the implementation of home care services provided by Puskesmas in Makassar City from the nurses' perspectives is important.

Methods

Design and participants. A qualitative, exploratory, and descriptive study was conducted by selecting 15 nurses involved in home care service using purposive sampling and subjecting them to semi-structured interviews (McKenna & Copnell, 2020). The research team consisted of nursing lecturers who have experiences in qualitative nursing research and nursing students (all females) who have conducted interviews in the community. Prior to the interview, the nursing students were trained by the team leader (Doctoral in Community Health Nursing) on how to conduct interview and underwent an interview practice (pilot test of two participants who were previously involved in the program but were moved to another service and were not

included in the data collection analysis) prior to do the interview. This study was conducted from September to October 2019 in several Puskesmas in Makassar City that implement home care service. A letter was sent to the Makassar City Health Office to ask permission and determine which Puskesmas implement home care service. From 23 Puskesmas in Makassar City, only 15 implement home care programs. Letters were then sent to the heads of the 15 Puskesmas to ask the list of nurses who provide home care service and can participate in this study. A meeting was arranged to conduct interview with the participants.

Interview process and data analysis. All the nurses from 15 Puskesmas agreed to join the study, and the face-to-face interview was conducted for around 40–60 minutes by the researcher mostly in the Puskesmas where the nurses work. No relationship existed between the research team and the participants prior to the study, and their formed relations were merely limited to the research context. This interview was conducted in Bahasa Indonesia and recorded with permission from the participants. Field notes were also taken during the interview. Data were transcribed to verbatim in Bahasa Indonesia after each interview and analyzed using Open Code 4.03 software (ICT Services and System Development and Division of Epidemiology and Global Health, 2015) to obtain an overview of the experience conducting home care for later comparison with literature (Holloway, 2017). The data were treated with qualitative narrative using thematic analysis derived from data coding (McKenna & Copnell, 2020; Speziale, 2011).

Rigor. The transcribed text of the interviews was read and reread to capture the experience of the nurses participating in this study. Process data were simultaneously collected and analyzed (Holloway, 2017). To ensure rigor, Creswell and Poth (2018) suggested that the researcher should at least use two methods for trustworthiness in a qualitative study. Rigor in the present study was obtained by researcher triangulation and member checking methods

(Miles et al., 2014). In researcher triangulation, different investigators compare the collected data or the conclusions reached by different analysts looking at the same body of data (Miles et al., 2014). In the current study, three research team members independently analyzed the data and then compared the results together to draw conclusions. The researchers then sent the brief summary of the finding to the participants for member checking. Six participants were randomly selected to check for accuracy and resonance with their experiences (Birt et al., 2016).

Ethical consideration. Ethics approval was obtained from the Faculty of Medicine Ethics Committee Universitas Hasanuddin (Ethic no: 895/UH4.6.4.5.31/PP36/2019). The participants also received an explanation of the research and provided informed consent prior to the interview. Codes were used in reporting data to ensure that no participant can be identified and maintain the confidentiality of their names (Holloway, 2017).

Results

Face-to-face interview was conducted with 15 nurses (13 females and 2 males) who provide home care services. All the participants were aged between 33 and 50 years and have been working for over 5 years in the Puskesmas. Table 1 shows the participants' characteristics. After analysis, the data were grouped into four themes each consisting of some sub-themes (Table 2).

Management of home care services. In this study, we aim to evaluate whether home care service were implemented in accordance with the guidelines issued by the Makassar City government. The Makassar City government has decided that all home care services provided are free to the community who live in the Puskesmas working area. These services are based on patients' call to the call center and are divided into three categories of services, including emergency home care service, home care visits for patients who are sick but cannot go to Puskesmas for treatment, and home care follow-up vi-

sit for patients who need follow-up care after being hospitalized. The healthcare teams generally consist of one doctor, one nurse, and one other healthcare staff. The government has regulated that the rewards for the team should come from the Makassar City revenue and expenditure budget. Data analysis showed that home care management was implemented in accordance with the government regulation. This first theme included three sub-themes, namely, *providing service based on patients' call, government policy of the type services,* and *specific reward for the home care team members.* The participants described that home care will be delivered on the basis of the patient's call. A patient who needs home care services could call the service center (112) as indicated in the home care guidelines from the Makassar City government. The participants are aware of the flow and mechanism of the services as mentioned by one of them:

> *".... mechanism of services is the patient should call center 112, then the call center will forward it (the information) to the team of home care and report that there are patients who need service, after that, we will visit the patient's home."* (P2)

Data analysis showed that the type of services offered were in line with the government policy. All the participants said that based on the government policy, the three types of services offered were emergency, home visit, and follow-up visit. Nevertheless, no limitation was set on home care services, and all types of diseases were handled. In this regard, a nurse who has worked for over 13 years stated that,

> *"Now the concept of home care in Makassar city is a home visit, emergency care, and follow-up, almost all cases are served in this home care program, and it is the government's policy to treat all diseases…"* (P1)

The reward for home care staff has already been set as per the government regulation. This issue is important and directly influences home care

Table 1. Demographic Characteristic

Participants Code	Age (year)	Gender	Educational background	Work Length (years)	Work station	Work Location
P1	38	M	Master's in public health	13	NCDs program	Antara
P2	35	F	Diploma in nursing	13	CH Nurse	Tamamaung
P3	42	F	Bachelor of nurse (Ners)	5	CH Nurse	Toddoppuli
P4	34	F	Diploma in nursing	9	ER Nurse	Batua
P5	48	F	Diploma in nursing	28	CH Nurse	Tamalanrea Jaya
P6	43	F	Diploma in nursing	15	CH Nurse	Sudiang Raya
P7	40	M	Bachelor in public health	10	Health promotion	Antang
P8	43	F	Bachelor of nurse (Ners)	15	CH Nurse	Antang Perumnas
P9	50	F	Bachelor of nurse (Ners)	25	ER Nurse	Tamalanrea
P10	50	F	Bachelor of nurse (Ners)	6	CH Nurse	Paccerakkang
P11	50	F	Bachelor of nurse (Ners)	12	CH Nurse	Makkasau
P12	37	F	Bachelor of nurse (Ners)	14	ER Nurse	Karuwisi
P13	50	F	Diploma in nursing	7	NCDs program	Jumpandang Baru
P14	33	F	Diploma in nursing	9	ER Nurse	Kaluku Bodoa
P15	50	F	Diploma in nursing	34	CH Nurse	Rappokalling

services. In this study, a specific reward was reported by the home care service team, that is, the reward based on the number of patients who receive services as mentioned,

"...home care as the excellent program of the government, there has been a reward set according to government policy..." (P3)

Roles of nurses in home care service. Home visit is one of the main tasks of community health nurses. The roles of nurses in regular home visits include providing care and health education. Nurses provide home visit according to the nursing care plan and during Puskesmas working hour. However, the home care service in this study differed from the regular home visit task of the nurses in Puskesmas. A special team has been created for this service that can be ava-

ilable for 24 hours via phone call. In this study, we explored the roles of the nurses in this team. This theme consisted of three sub-themes, namely, *nurses as the leader of team members, nursing care provider based on a patient problem,* and *documentation officer of the service delivered.* The findings indicated that nurses provide care according to the patients' problems. In the team, nurses would check vital signs and patient's condition and write resume reports. Some nurses provide short health education. One of the participants said:

"Well, nurses are doing everything, starting from the status, then checking vital signs, conducting assessments, providing education, making resume reports, then doctors will use the data assessment done by nurses to make diagnoses." (P6)

In conclusion, nurses play vital roles in the team. In some non-emergency cases when the doctor could not visit, the nurse would report the patient's condition via call and the doctor would give instructions as needed. As one of participants mentioned,

"*sometimes the doctor is not coming with us, especially if it's not emergency cases, so I conducted all the assessment and report it to the doctor by phone, and he/she will give the instruction…*(P3)

The majority of the participants reported the lack of specific documentation of nursing care. They use a short form provided by Puskesmas explaining patient identity, sign, and symptom, and care implementation according to patient problems. The documentation is similar to a patient care resume and not a complete nursing care report. One of the participants stated that,

"*… there is a short form for home care documentation, only resume reports included the patients' complaint, implementation, but there is no nursing diagnosis.*" (P10)

Barriers perceived. In this study, we asked about the obstacles faced by nurses in implementing home care services. Data analysis showed that some of the barriers to home care implementation based on nurses' experiences included long-hour services, lack of health staff in

Puskesmas, and community misperception of the provided services. One of the barriers to home care implementation was that the staff should be ready to provide 24-hour services.

"… so *many obstacles, we need to go to patients' homes, and usually at midnight…. we cannot refuse it (home visit), yeah… so that's the obstacle.*" (P11)

The other barrier faced by nurses during home care was the lack of human resources. Almost all the participants said that,

"*The problem is lack of human resources, home care staff also work in the emergency room at Puskesmas, if there are patients who call for a home visit and coincide with emergency patients in the ER, so usually we deliberate the priority to help.*" (P4)

In this study, an important barrier of home care was community misperception of home care services. The community appears to take advantage of this program because the Mayor of Makassar City emphasized that all patients' call should be answered and visited. However, the guideline has regulated that only certain cases can be visited. Among emergency cases, home visit is only for certain patients with chronic diseases and those who physically cannot go to healthcare facilities because of physical barriers. However, the guideline does not have a clear

Table 2. Main Themes and Sub-Themes

Main Themes	Sub-themes
Management of home care services	Providing services based on patient call
	The government policy of the type services
	The specific reward for home care team members
The roles of nurses in the home care services	Nurses as the leader of team member
	Nursing care provider based on a patient problem
	Documentation officer of the service delivered
Barriers perceived	Providing 24-hours services
	Lack of health care team number
	Community misperception of home care services
Benefits for the community	Increasing community health status
	Faster responses for health care services

regulation of what type of diseases are included in the home care service in Makassar City.

With regard to this barrier, participants stated that,

"… because the patient considers that everything that can be served with home care because they do not want to queue at the puskesmas." (P10)

"initially we were told that we only respond to a certain patient's disease and conditions, however, maybe there's miscommunication with the community, they think all condition can be served in the home care program." (P4)

With these obstacles, the nurses hoped for improvement in the socialization system of the home care services for the community. All the participants believed that the community must be given adequate information so they can have an accurate understanding and interpretation of the services, especially the criteria to qualify for home care services.

Benefits for community. Regardless of the barriers, the nurses believed that this program is good and helps people in the community to get healthcare services, especially those with specific conditions that impede them from visiting Puskesmas or hospitals. The nurses described their hopefulness related home care,

"I think this is an excellent program to increase community health status." (P3)

Other participants shared a story from one of the patients who really appreciated the home care services, especially those who have physical restrictions preventing them to go outside their homes. In addition, this home care service program is equipped with a car that has telehealth facility and important equipment required for the services. One participant mentioned,

"Regardless the current system in these ser-

vices, I think this program has helped community to get health care services faster. If we want to send the patient to the hospital, we can send the data first by telehealth facilities in Dottorotta' car" (P4)

Discussion

This study showed that the home care program provides services according to the patient call. Its flow and mechanism have been described in the home care program guidelines from the Makassar City government (Dinas Kesehatan Kota Makassar, 2015). The participants are aware of the flow and mechanism of the services. According to the guidelines, the patient first needs to contact the call center, which will then screen and forward the call to the appointed Puskesmas of the local health center or the Makassar City home call center (Jaringan Inovasi Pelayanan Publik Sulsel, 2019). This study described the type of home care services stated in the government policy, including home care services for patients who cannot go to Puskesmas or hospitals (home care visit services), patients with emergency condition (emergency home care), and patients who need follow-up care post-hospitalization such as wound care and physiotherapy for stroke patients (home care follow-up). Given that the home care program explored in this study is one of the innovation programs of the Makassar City Mayor in 2015, its regulation somewhat differed from the home care services in other regions of Indonesia and other countries, although the guidelines were developed based on the Indonesian government regulation (Ministry of Health Republic of Indonesia, 2014). The Indonesian Hospitals Association has formulated the concepts and mechanisms of home care services, including the collaboration between hospital and Puskesmas regarding patient selection (Widyastoeti, 2020). The doctor in the hospital will decide whether the patient needs home care service and will contact the home health care agency to perform follow-up care. This agency can be Puskesmas or any other private healthcare providers offering home health care services. This phenome-

non is one of the limitations of home care services in Indonesia. Owing to the lack of regulation, the implementation of the program can vary among the regions in Indonesia. For example, in one region in Yogyakarta, home care services are provided specifically for elderly in collaboration with healthcare providers and the community (Sumini et al., 2020). In developed countries, such as Australia, home care services focus on supportive care for patients after discharge from the hospital to maintain the health of disabled people and the elderly at home, prevent unnecessary admission, and meet the daily needs of these patients (Palesy et al., 2018). The varying implementations and focuses of home care services in different countries depend on their policy objective for home care (Palesy et al., 2018).

This study revealed that nurses have the main role in the team, and this result is supported by WHO study stating that nurses are the key member of the home care team (Genet et al., 2012). In addition, nurses perform their nursing role including assessment, implementation of nursing care according to patient problems, and documentation of nursing care using resume reports. The nurses involved in home care services team reported that their main task is to provide nursing care. They also have other tasks such as educating the patients and their family. Tóthová et al. (2014) explained that nurses use a holistic approach in providing nursing care including preventive care, health education, and health management. Nurses also provide the coordination and continuity of health care for individuals, families, and communities. However, in the current study, the nurses reported that their task is simple and short and not specific for nursing care.

Several barriers in the implementation of home care services were also perceived by the nurses. In this study, providing 24-hour services was one of the obstacles faced by the nurses. Another barrier was the lack of home care staff. Similar findings were obtained by another study, which explained an occasional delay in ho-

me care services due to this issue (Haswira et al., 2019). The lack of human resources in Puskesmas has become an issue, resulting in one nurse doing more than one task (Kadar et al., 2014). One study about innovation in health care argued that human resources are the most important element in implementing home care innovation policies (Putra et al., 2018). Another barrier faced in implementing home care was misinterpretation from the community about the service, particularly the patients' conditions included in the home care service program. One recent study confirmed this finding and recommended that the government must limit home care services to certain type of diseases to maximize the health care services provided (Haswira et al., 2019). Shahsavari et al. (2018) explained that society's understanding and interpretation of home nursing care could affect the utilization modes of home care. The present study also found that reward system was an important issue for the nurses. Given that the reward issue was not included in the barriers faced by the nurses, its impact on the nurses' work was not further explored. This condition can affect the performance of nurses: two studies explained that financial rewards have a positive impact on employees' performance (Putra et al., 2018; Shahsavari et al., 2018).

Despite the barriers perceived by the nurses, the participants agreed that this program gives benefits for the community, especially for individuals who have physical restraints to go to the hospital or Puskesmas to receive health care services. One of the goals of this home care service program is to make health care services accessible for all communities in Makassar City. Regardless the benefits, the participants hoped for the improved management of the home care program, including the development of administrative protocols and coverage of home care services. Good management is one of the key components in implementing effective public health program (Frieden, 2014), such as home care services. In addition, these home care services must be introduced to the community to gain their understanding and perception. Clear,

accurate, and timely communication among the health care community, decision-makers, and the public can prevent misunderstandings about the program (Frieden, 2014). One limitation is that this study did not include the experiences of the other members of the home care team. To maintain the generalization of the results, this study took the total sample of nurses as a team of home care at several public health centers in this city.

Conclusion

Four main themes emerged in this study, namely, management of home care services, roles of nurses in the home care service, perceived barriers, and community benefits. On the basis of nurses' experiences, the home care program delivered by health care professionals including the nurses at Puskesmas has been appropriately implemented in accordance with the guidelines. However, some barriers were perceived by the nurses. In relation to the benefits received by the community from this program, the government should provide additional technical guidelines, especially regarding the types of patients' condition that could receive these services.

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Future Anxiety and Immune Status in Nursing Students During COVID-2019 Pandemic

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Abstract

Coronavirus Disease-2019 (COVID-19) is a frightening global disease, especially because of its high contagiousness. This study aimed to identify the future anxiety regarding immunity status in nursing students who work in hospitals, especially those caring for patients with COVID-19. This study design was cross-sectional with standard translated instruments of the Future Anxiety Scale and Immune Status Questionnaire administered using a Google Form to 102 respondents. Results revealed that among the respondents, 87 experienced severe psychological anxiety (85.3%), 46 experienced moderate social anxiety (45.1%), 42 experienced moderate economic anxiety (41.2%), 38 experienced mild media anxiety (37.3%), 53 experienced mild religious anxiety (52%), 45 experienced moderate general anxiety (44.1%), and 61 had mostly good immunity status (59.8%). The relationship between psychological, social, economic, media, and general anxiety with immunity status was (p = 0.835), (p = 0.052), (p = 0.514), (p = 0.414), (p = 0.160), and (p = 0.123), respectively. In conclusion, a dominant future anxiety rate was found in the respondents but showed no relationship with immunity status. Future studies must include heterogeneous respondents and moderate variables to further improve the accuracy of the findings. The present results serve as justification for a program to address anxiety in nursing students during clinical practice in pandemic times.

Keywords: COVID-19, future anxiety, immunity, nurse

Abstrak

***Kecemasan Masa Depan dan Status Imun pada Mahasiswa Keperawatan Selama Pandemi* COVID-19.** Coronavirus Disease-2019 (COVID-19) *menjadi salah satu penyakit yang menakutkan di masyarakat global, terlebih karena sifat penularannya yang tinggi. Tujuan penelitian ini adalah untuk mengidentifikasi kecemasan masa depan mahasiswa keperawatan yang bekerja di rumah sakit, khususnya yang merawat pasien COVID-19, terhadap status imunitas mahasiswa itu sendiri. Penelitian ini adalah* cross-sectional*, dengan menggunakan terjemahan dari Future* Anxiety Scale (FAS) *dan* Immune Status Questionnaire (ISQ) *dengan yang difasilitasi aplikasi Google Formulir kepada 102 mahasiswa keperawatan. Hasil penelitian menunjukkan sebanyak 87 responden mengalami kecemasan psikologis berat (85,3%), kecemasan sosial sedang 46 (45,1%), kecemasan ekonomi sedang 42 (41,2%), kecemasan media ringan 38 (37,3%), kecemasan religi ringan 53 (52%), kecemasan umum sedang 45 (44,1%), status imunitas sebagian besar baik 61 (59,8%). Hubungan antara kecemasan psikologis, sosial, ekonomi, media, dan kecemasan umum dengan status imunitas yaitu (p = 0,835), (p = 0,052), (p = 0,514), (p = 0,414), (p = 0,160), dan (p = 0,123). Kesimpulan pada penelitian ini adalah terdapat angka kecemasan masa depan yang dominan pada responden tetapi tidak ditemukan hubungannya dengan status imunitas. Pada studi selanjutnya, perlu dilakukan pendekatan penelitian dengan melibatkan responden yang lebih heterogen dengan mempertimbangkan memasukkan variabel moderat untuk lebih meningkatkan akurasi penelitian yang dilakukan. Hasil penelitian ini menjadi suatu justifikasi tentang perlunya sebuah program untuk mengatasi kecemasan pada mahasiswa keperawatan selama praktik klinik di masa pandemi.*

Kata Kunci: COVID-19*, imunitas, kecemasan masa depan, perawat*

Introduction

Coronavirus (CoV) is a virus that generally attacks the respiratory systems of animals and humans and has been found decades ago in the body of animals. Most of the members of the CoV family remain in the bodies of bats and mice as natural hosts (Adachi et al., 2020). In the early

21st century, this virus has shown its ability to mutate and successfully live in humans. This zoonic (animal to human) virus transmission was first recognized by the world through the severe acute respiratory syndrome (SARS) outbreak in 2003 th at was centered in Guangdong Province, China (Adachi et al., 2020). At the end of December 2019, the world received sad news regarding a new outbreak of viral infection (Salari et al., 2020). The virus was then named SARS-CoV-2 by world taxonomists and announced by World Health Organization (2020).

Healthcare providers, including nurses, clinicians, and other allied health professionals who deal directly with patients, are part of a sub-group that is extremely vulnerable to contracting the COVID-19 virus (Chughtai et al., 2020). A previous study involving 174 other allied health professionals (pharmacists, hospital administrators, and other occupations that are not related to patients) and 296 healthcare personnel compared their risk of depression, anxiety, and stress disorders and found that 8.1% of clinicians and nurses experience depression, 10.8% experience anxiety disorders, and 6.4% experience psychological stress (Tan et al., 2020). In addition, both types of providers showed a similar prevalence of psychological disorders, and this situation is closely related to the workplace atmosphere that triggered fear of infection (Tan et al., 2020). Fear tends to increase the risk of psychological disorders. Another study found a positive correlation between fear of COVID-19 and depression and anxiety disorders (Ahorsu et al., 2020). Anxiety is of great concern, especially for healthcare providers who care for pa-tients with COVID-19 in the hospital; in particular, a nurse reported a high rate of anxiety (Huang et al., 2020; Milgrom et al., 2020).

Psychological disorders might affect a person's immune system (Huang et al., 2019). In a physically healthy individual, the immune system function could be reduced in the presence of psychological pressure (Ismail et al., 2020). During the COVID-19 pandemic, the psychological stress of nurses must be managed properly.

Lowered immune conditions during duty increase the risk of being infected with SARS-CoV2 (Taghizadeh-Hesary & Akbari, 2020). SARS-CoV2 infection massively suppresses the immune cells in the body and the production of interferon-1 (IFN-1), the main alarm that informs the body of the presence of infected cells (Taghizadeh-Hesary & Akbari, 2020). One way to maintain the immune system is to eliminate the risk of mental disorders, such as anxiety. However, Future Anxiety Scale-1 (FAS-1) and non-invasive immune status are unusually used in Indonesia. Knowing the level of future anxiety and immune status of nursing students in the face of a pandemic is important because of their role in hospital services. The pressure of work and responsibilities reduces their immunity, so their immunity status will generally be less than optimal. This measurement tool can be used to provide new information and findings related to the effect of the immune system on future anxiety. Therefore, this study was conducted to determine the effect of the future golden age on the immunity status of student nurses who treat patients with COVID-19. Nurses' concerns and feelings regarding the post-pandemic future while on duty have an influence on their immune system function.

Methods

This cross-sectional study measured several variables, namely, age, gender, recent education, nurse stress, and nurse's immune system. A total of 102 nursing students of a Post Basic Bachelor of Science Nursing Program who had a background as nurse at a COVID-19 ward participated in this study.

FAS-1 was to measure the stress level of nurses, and Immune Status Questionnaire (ISQ) was used to non-invasively measure the strength of their immune system. Both instruments were translated to Bahasa Indonesia. FAS-1 has a satisfying reliability value (Cronbach's α at 0.89) (Al Matarneh & Altrawneh, 2014) and is used to determine a person's tendency to think about the future, his/her anxiety, uncertainty, and re-

luctance, and his/her experience of fearing fail-ure. ISQ also has a satisfying reliability value (Cronbach's α at 0.80) (Versprille et al., 2019) and has been developed to validate and apply a short and cost-effective approach to measure immune status in a variety of settings, including clinical practice, research, and self-assessment. These instruments and informed consent were packaged in a google form and distributed via

online to nursing students. The data were sub-jected to univariate (age, gender, marital status, future anxiety status, and immunity status) and bivariate (the relationship between future anxi-ety and immune status) analyses. Future anxiety consisted of future social, environmental, eco-nomic, media, and religious anxieties and gen-eral future anxieties. This study was approved by the Research Ethics Committee of Universitas

Table 1. Characteristics of Respondents, Future Anxiety Status, and Immune Status

Variables	Frequency	Percentage
Age		
Adolescents	4	3.9
Adults	93	91.2
Elderly	5	4.9
Gender		
Female	71	69.6
Male	31	30.4
Marital Status		
Married	87	85.3
Single	15	14.7
Future Anxiety		
Psychology Future Anxiety		
Mild Anxiety	1	1.0
Moderate Anxiety	14	13.7
Severe Anxiety	87	85.3
Social Future Anxiety		
Mild Anxiety	29	28.4
Moderate Anxiety	46	45.1
Severe Anxiety	27	26.5
Environmental Future Anxiety		
Mild Anxiety	18	17.6
Moderate Anxiety	54	52.9
Severe Anxiety	30	29.4
Economic Future Anxiety		
Mild Anxiety	37	36.3
Moderate Anxiety	42	41.2
Severe Anxiety	23	22.5
Media Future Anxiety		
Mild Anxiety	38	37.3
Moderate Anxiety	35	34.3
Severe Anxiety	29	28.4
Religion Future Anxiety		
Mild Anxiety	53	52.0
Moderate Anxiety	43	42.2
Severe Anxiety	6	5.9
General Future Anxiety		
Mild Anxiety	27	26.5
Moderate Anxiety	45	44.1
Severe Anxiety	30	29.4
Status Immunity		
Good	61	59.8
Moderate	26	25.5
Poor	15	14.7
Total	102	100

Table 2. Relationship between Future Anxiety and Immunity Status

Variable	Immunity Status			
	Good	Medium	Bad	p
General Future Anxiety				
Mild Anxiety	21 (77.8%)	5 (18.5%)	1 (3.7%)	0.123
Moderate Anxiety	25 (55.6%)	13 (28.9%)	7 (3.7%)	
Severe Anxiety	15 (50%)	8 (26.7%)	7 (23.4%)	
Psychology Future Anxiety				
Mild anxiety	1 (100%)	0 (0%)	0 (0%)	0.835
Moderate anxiety	9 (64.3%)	4 (28.6%)	1 (7.1%)	
Severe anxiety	51 (58.6%)	22 (25.3%)	14 (16.1%)	
Social Future Anxiety				
Mild anxiety	20 (69%)	7 (24.1%)	2 (6.9%)	0.052
Moderate anxiety	29 (63%)	13 (28.3%)	4 (8.7%)	
Severe anxiety	12 (44.4 %)	6 (22.2%)	9 (33.3%)	
Environment Future Anxiety				
Mild anxiety	13 (72.2%)	4 (22.2%)	1 (5.6%)	0.514
Moderate anxiety	30 (55.6%)	16 (29.6%)	8 (14.8%)	
Severe anxiety	18 (60%)	6 (20%)	6 (20%)	
Economy Future Anxiety				
Mild anxiety	26 (70.3%)	8 (21.6%)	3 (8.1%)	0.414
Moderate anxiety	21 (50%)	13 (31%)	8 (19%)	
severe anxiety	14 (60.9%)	5 (21.7%)	4 (17.4%)	
Media Future Anxiety				
Mild anxiety	27 (71.1%)	9 (23.7%)	2 (5.3%)	0.160
Moderate anxiety	21 (60%)	8 (22.9%)	6 (17.1%)	
Severe anxiety	13 (44,8%)	9 (31%)	7 (24.1%)	
Religion Future Anxiety				
Low Anxiety	37 (69.8%)	12 (22.6%)	4 (7.5%)	0.067
Moderate Anxiety	22 (51.2%)	13 (30.2%)	8 (18.6%)	
Severe Anxiety	2 (33.3%)	1 (16.7%)	3 (50%)	

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Results

The respondents were characterized by age, gender, and marital status. Most of them were adults (91.2%), females (69.6%), and married (85.3%). Future psychological, environmental, and religious future anxieties prevailed in more than half of the respondents, with 85.3% for future psychological anxiety, 52.9% for future environmental anxiety, and 52% for future religious anxiety. Meanwhile, the majority of respondents had a good immune system (59.8%). Detailed results are shown in Table 1.

Table 2 shows that future psychological, social, environmental, economic, media, and religious anxieties were not related to immunity status with a p-value > α. The same results were obtained from the analysis of future anxiety and immunity status in nursing students during the COVID-19 pandemic.

Discussion

In this study, the respondents were mostly adults, females, and married. These characteristics must be considered as other factors that can trigger future anxiety. Many studies reported that nursing students are mostly females that are currently in adolescence to adulthood (Cheraghi et

al., 2019; Karasu et al., 2022). In addition, the nursing profession in hospitals is dominated by women and married adults (Stevanin et al., 2018) This study also measured the future anxiety status of the respondents using FAS-1.

The results showed that nurses in charge of caring for patients with COVID-19 experienced future psychological, environmental, economic, and media anxieties. Most of the respondents experienced moderate anxiety. For future religious anxiety, most of the respondents experienced a mild level. In general, the respondents experienced moderate future anxiety. This finding is like a previous study in Poland reporting the increase in anxiety during the COVID-19 pandemic. Apart from anxiety, other mental health disorders, such as fear, depressive symptoms, and low sleep quality, have been reported during the pandemic (Duplaga & Grysztar, 2021). Excessive anxiety reduces the quality of nursing service to the patients. The present research also showed that poor mental health decreases cognitive performance, such as an individual's ability to process information, thus leading to poor work performance (Maharaj et al., 2019). Future anxiety that arises in nurses is one of the impacts of COVID-19, which is extremely life-threatening for healthcare providers (Duplaga & Grysztar, 2021).

In contrast to the mild level of future psychological anxiety in the respondents with a good immunity status, no respondent had moderate future psychological anxiety and poor immunity status. Changes in a person's health status greatly affect his/her anxiety level (Bestari & Wati, 2016). This finding suggested that future psychological anxiety had the most influence on a person's immune status. From an immunological perspective, people who experience anxiety generally have increased levels of cytokines in their body. This finding was confirmed in a study that measured the levels of cytokines in the blood serum of respondents who experienced anxiety and compared them with a control group (without anxiety). The results showed that the group experiencing anxiety had sub-

stantially higher ratios of TNF-α/IL10, TNF-α/IL4, IFN-γ/IL10, and IFN-γ/IL4 than the control group (Hou et al., 2017).

With regard to future social anxiety, 69% of the respondents with mild anxiety levels had a good immunity status, 7 people had a moderate immunity status, and only two people had a poor immunity status. Meanwhile, for future environmental anxiety, as many as 30 respondents with moderate anxiety levels had a good immunity status, 16 had a moderate immunity status, and 8 had a poor immunity status. This finding showed that the role of the social environment is not entirely a factor in causing future anxiety and immunity disorders in nurses (Sampaio et al., 2021). Another future anxiety subscale included the future economy, media, and religious anxieties as shown in Table 2. Media anxiety during a pandemic also contributes to the increase in future anxiety regarding income and economic well-being. This finding is in line with recent research, which stated that workers in the ward should reduce work activities and are likely to be transferred to other departments. The respondents in the present study experienced negative impacts that also affected their economy (Florin et al., 2020). Fear of recession and financial collapse can also trigger stress and anxiety regarding future sustainability in the community (Maria et al., 2020). The present results also showed the lack of a significant relationship between religiosity and mental health disorders (Saleem & Saleem, 2020). Religiosity is closely related to the interaction of thoughts that affect a person's body so that he/she is considered susceptible to experiencing anxiety disorders. However, researchers have not reached a consensus on how anxiety related to religiosity can affect the vulnerability of a person to having a poor immunity status (Mallorquí-Bagué et al., 2016).

The immune system can be characterized either by examining the biomarkers associated with inflammatory response, such as leukocytes and other inflammatory cytokines (Yuan et al., 2020), or by a non-invasive examination, such as ISQ

(Versprille et al., 2019). A study in 2020 linked the immunity status of patients with COVID-19 with and without anxiety and found a difference in the number of leukocytes between the recovered patients with COVID-19 with and without depression. The results showed that the number of leukocyte cells in the group who experienced depression was higher than in the normal group (without depression) (Yuan et al., 2020). In the present study, the respondent's immune status was measured using the ISQ. The results showed that 59.8% of the respondents were perceived to have a good immunity status, 25.5% had a moderate immunity status, and 14.7% had a poor immunity status. In this case, immune status was not statistically significant because of the p-value > 0.05 (0.123). This result differed from that of previous research that also measured the immunity status of respondents using ISQ for the last 12 months (Versprille et al., 2019). The discrepancy may be because the respondents of the previous study had a coping mechanism and an adequate knowledge of anxiety. Hence, the anxiety that occurs did not interfere with their immunity status. Another study reported that a good coping mechanism has lowered the anxiety and stress levels in nursing students during COVID-19 pandemic (Shdaifat et al., 2018). In addition, COVID-19 infection occurred more in health workers than in non-healthcare providers, but the fatality rate was higher in non-health workers than in health workers; this finding was related to the higher level of knowledge of health workers compared with non-health workers (Zheng et al., 2020). Some previous studies assumed the lack of relationship between the anxiety levels and immunity status of nursing students because they have better coping mechanisms and better levels of health knowledge than non-health students.

This study implied that nursing students are also human beings who are prone to anxiety and fear of diseases, such as COVID-19. This anxiety can hinder their studies, especially during clinical practice. Prior to clinical practice, preparation activity is important to reduce the anxiety of the student (Anim-Boamah et al., 2021).

Although no correlation was found between future anxiety and immune status, this study provides an overview of the level of anxiety that has occurred in nursing students during the COVID-19 pandemic.

The limitation of this study was that the respondents were only from one school and had a background as a nurse at a COVID-19 ward. No respondent had directly graduated from high school. In addition, this study did not examine the confounding factors that may influence the immunity status and only used a questionnaire to measure the immunity status. The correlation test showed the lack of a significant relationship between future anxiety and immune status. However, the results might have been affected by using a questionnaire to measure immunity instead of focusing on individual perceptions.

Conclusion

This study explained the level of future anxiety that has occurred in nursing students who worked in hospitals and cared for patients with COVID-19. Results showed the high levels of anxiety felt by the respondents. The worst anxiety felt by the respondents is future anxiety, which is most worrying anxiety. Future studies must employ multivariate analysis to examine the factors influencing immune status.

Acknowledgement

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Heart Failure in Lebanon: A Review of the Literature

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Abstract

This research aimed to provide a comprehensive overview of the current literature on heart failure (HF) management in Lebanon and identify the implications for policy, practice, education, and research. The design of this research was a systematic review following preferred reporting items for systematic reviews and meta-analyses (PRISMA) guidelines. Databases were searched using the search terms "heart failure" and "Lebanon" and associated MeSH terms. The abstracts of the selected articles were examined independently by two researchers; the sample characteristics, HF indices, and results of the included studies were extracted. Key findings and trends were synthesized. Eleven papers were reviewed with 2,774 participants (mean age = 57.98, SD = 13.09 years, and the majority [n = 1,494, 53.85%] were male). Over one-third reported having coronary artery disease, and half had hypertension. The mean ejection fraction was 47.28% (SD = 10.44), and the mean length of hospital stay was 7.97 days (SD = 10.28). Self-care was a common theme showing varying but low scores, especially in the self-management subscale. The findings of this study outline the unique characteristics of the population with HF in a Middle Eastern country. These characteristics should be considered when planning interventions in countries facing geopolitical instability in the context of population aging and the rise of noncommunicable diseases.

Keywords: heart failure, Lebanon, literacy, MENA region, nursing, self-care

Abstrak

***Tinjauan Pustaka tentang Gagal Jantung di* Lebanon**. *Penelitian ini bertujuan untuk menyajikan rangkuman kajian pustaka terkait manajemen gagal jantung di* Lebanon *dan mengidentifikasi implikasinya terhadap kebijakan, praktik, pendidikan, dan riset di bidang tersebut. Metode tinjauan sistematis digunakan pada penelitian ini dengan mengacu pada* preferred reporting items for systematic reviews and meta-analyses (PRISMA). *Beberapa istilah, seperti "gagal jantung" dan "*Lebanon*" serta istilah dalam* medical subject headings *(MeHS) lainnya digunakan dalam pencarian pada basis data. Kumpulan abstrak terpilih ditinjau dan diteliti dalam hal: karakteristik sampelnya, indeks gagal jantung, dan hasil penelitiannya. Poin utama temuan dan tren dipadukan. Pada sebelas manuskrip yang telah ditelaah, terdapat 2.774 partisipan (rerata umur = 57,98, SD = 13,09 tahun, dan mayoritas partisipan adalah laki-laki (n = 1.494, 53,85%). Lebih dari sepertiganya mengalami jantung coroner dan setengahnya mengalami hipertensi. Nilai mean untuk pecahan ejeksi sebesar 47,28% (SD = 10,44), dan nilai* mean *untuk lama rawat inap yang dijalani ialah 7,97 hari (SD = 10,28). Perawa-tan mandiri adalah tema yang paling sering muncul tetapi dengan variasi skor rendah, khususnya pada subskala ma-najemen mandiri. Temuan pada penelitian ini menggarisbawahi karakteristik unik pada populasi gagal jantung di negara-negara Timur Tengah. Karakteristik ini diharapkan dapat menjadi acuan dalam merencanakan intervensi pada negara yang menghadapi ketidakstabilan geopolitik, khususnya dalam konteks populasi lansia dan meningkatnya kasus penyakit tidak menular.*

Kata Kunci: *gagal jantung, keperawatan,* Lebanon*, literasi,* MENA region*, perawatan mandiri*

Introduction

Heart failure (HF) is a global pandemic affecting at least 26 million people worldwide (Savarese & Lund, 2017). This prevalence is expected to rise globally in the next 20 years regardless of trends in coronary disease morbidity and mortality due to improved survival after cardi-

ovascular events, rising HF incidence, and/or an increasingly aging population (Heidenreich et al., 2013). Consequently, HF is a global clinical and public health problem associated with substantial mortality and morbidity and subsequent increased healthcare expenditure. This phenomenon is an increasing concern in low- and middle-income countries, particularly when models of care do not follow a traditional Western paradigm (Koirala et al., 2019). Epidemiological studies evaluating the prevalence of HF and associated mortality in the Middle East and North Africa (MENA) region, including Lebanon, are lacking. A range of factors, including climate change, civil unrest, and increased refugee populations, have placed additional pressures on an already stretched healthcare system (Anholt, 2020).

Lebanon, previously known as the pearl of the Middle East, is a small country located on the eastern shore of the Mediterranean Sea. Despite its size, Lebanon is home to more than 5.8 million people due to the high growth rate and the soaring migration rates to the country (United States Central Intelligence Agency, 2014). The continuous geopolitical conflicts have put the country in a state of political, social, and financial instability, causing burden on all sectors, including the health sector (World Health Organization-Regional Office for the Eastern Mediterranean, 2010). The burden on the healthcare sector is manifested through the high annual expenditure on the Lebanese Ministry of Public Health (MoPH) for more than 40% of the Lebanese population (United States Central Intelligence Agency, 2014).

Lebanon remains in a state of epidemiological transition where communicable diseases remain endemic and is paired with an increase in the prevalence of noncommunicable and degenerative diseases (Bassatne et al., 2020). Noncommunicable diseases are a rising healthcare problem in Lebanon and are projected to increase markedly over the coming few decades. This situation is exacerbated by geopolitical instability, economic disruption, and, more recently,

the impact of the COVID-19 pandemic (Deek, 2020). In view of the current changes in Lebanon to be comparable to those of the surrounding countries, understanding the current state on HF will enable researchers in Lebanon and the MENA region to set priorities for research and health systems planning. Therefore, this review aimed to provide a comprehensive overview of the current literature on HF from Lebanon.

Methods

This research used the design of a literature search that was conducted for studies on HF in Lebanon, following the PRISMA statement criteria (Sarkis-Onofre et al., 2021). The search was conducted independently by two researchers (HD and AM), and any conflict was resolved by a third researcher (PMD). A bibliographic search of English language publications indexed in Medline, CINAHL, Academic Search Complete, and Scopus computerized databases was conducted. The search strategy adopted for this review with all the MeSH terms is presented in Table 1. The search was also complemented by a search via Google Scholar for further references that were identified through tracking citations from key articles. Further search was conducted for published works in the following websites: MoPH, Google Search, World Health Organization, Central Intelligence Agency of Lebanon, and Statista, in addition to the gray literature websites: Agency for Healthcare Research and Quality, Gray Literature Report, and Open Gray using the search term "HF in Lebanon." The search was completed in August 2020. The following MeSH terms were used: HF, cardiac failure, CHF, chronic HF, congestive HF, or cardiomyopathy, and Lebanon or Lebanese. The terms were used in all possible combinations with mappings to headings wherever possible. Limits were set for English language and availability of full text. Sociodemographic, medical, and clinical data of the study participants were retrieved using a data extraction tool. Descriptive statistics were undertaken. Standard deviations were calculated for unavailable data using the following formula: SD

= range/6 (Hozo et al., 2005).

All abstracts were reviewed independently, and papers were included for full review if the authors reported data on the incidence, treatment modalities, readmission rates, interventions, and cost related to HF. Studies that reported findings on cardiovascular diseases without referring to HF in specific were excluded. The PRISMA flowchart of the search strategy is shown in Figure 1.

The abstracts of the selected articles were examined independently by two researchers. The study characteristics (author, year, study title, study design, setting, sample size, and study outcome), sample characteristics (age, gender, level of education, employment, social status, and comorbidities), HF indices (length of stay, New York Heart Association (NYHA) functional class, medications, cause of HF, and ejection fraction), and results of the included studies were extracted. Next, data were assembled from the sources and arranged to identify themes and their relationships. The final sample of 11 articles for this review comprised cross-sectional, correlational, interventional, and descriptive quantitative designs.

Results

Description of Studies. All the eleven studies on HF in Lebanon reported sociodemographic characteristics of the study participants; eight studies reported select clinical and medical characteristics. Excluded papers reported the development of a culturally appropriate intervention in the Lebanese context (Deek & Noureddine et al., 2016), a suggestion for an HF toolbox (Kabbani et al., 2019), and an article that discussed electrocardiogram determinants (Khalil et al., 2016) without details on HF. Matta et al.'s (2016) study reported a single case with limited findings and was thus excluded.

All the studies were conducted in the capital city of Beirut, with the exception of one study conducted in the North Lebanese (Kossaify &

Nicolas, 2013). Nine of the eleven studies were descriptive, four used a retrospective chart review design (Abou Dagher et al., 2018; Deek & Skouri et al., 2016; Mansour et al., 2020; Moukarbel & Arnaout, 2003), and two studies used a randomized controlled intervention design (Deek et al., 2017; Sadek et al., 2020). Two studies measured self-care in patients living with HF (Deek et al., 2017; Massouh et al., 2020). Two studies addressed quality of life using the Minnesota Living with Heart Failure (MLW HF) questionnaire (Sadek et al., 2020; Zahwe et al., 2020). The same study by Sadek et al. (2020) linked inspiratory muscle function to exercise capacity and quality of life. Three studies addressed diastolic dysfunction. Mansour et al. (2020) studied the link between diastolic dysfunction and coronary artery calcium scoring, whereas another study addressed the effect of physical inactivity on diastolic dysfunction (Matta et al., 2016). One study adressed the effect of body mass index and waist circumference on diastolic dysfunction (Kossaify & Nicolas, 2013). One study reported the mortality rates of acute HF complicated by sepsis (Abou Dagher et al., 2018). Tatari et al. (2015) studied the economic impact of HF care and its associated costs in Lebanon. Along the same lines, two other studies addressed readmission rates with HF (Deek et al., 2016, 2017). Finally, one study looked at peripartum cardiomyopathy (Moukarbel & Arnaout, 2003).

The findings of the 11 included studies, along with their quality assessment, are reported in Table 2. The Joanna Briggs Critical Appraisal Tool was used for quality assessment of the included studies (Munn et al., 2020). The review included 2,774 individuals with HF in inpatient and outpatient settings. The mean age of the sample was 57.98 (SD = 13.09) years. The majority were males (n = 1,494; 53.8%). Six studies reported the smoking status of their participants (n = 1,015), with a mean percentage of 46.8. Only three studies reported the level of education of their participants. A minimum of high school education was present in 247 participants (49.66%), with a variance among the

Table 1. Search Strategy with Mesh Terms Conducted in CINAHL

S1	(MH "Heart Failure+") M
S2	TI (((((ventricular or atrial or systolic* or diastolic* or congestive or chronic or myocardial or cardiac or heart or ((high or low) N1 output*) or ((right or left) N1 sided)) N1 fail*) or CHF or ((cardiac or heart) N1 decompensation) or ((cardiac or myocardial or heart or systolic or diastolic or atrial or ventricular) N1 d#sfunction*) or ((cardiac or myocardial) N1 (insufficien* or in-sufficien*)) or ((heart or cardiac) N1 edema) or HFpEF or HFrEF *)) OR AB (((((ventricular or atrial or systolic* or diastolic* or congestive or chronic or myocardial or cardiac or heart or ((high or low) N1 output*) or ((right or left) N1 sided)) N1 fail*) or CHF or ((cardiac or heart) N1 decompensation) or ((cardiac or myocardial or heart or systolic or diastolic or atria# or ventricular) N1 d#sfunction*) or ((cardiac or myocardial) N1 (insufficien* or in-sufficien*)) or ((heart or cardiac) N1 edema) or HFpEF or HFrEF *)) OR MW (((((ventricular or atrial or systolic* or diastolic* or congestive or chronic or myocardial or cardiac or heart or ((high or low) N1 output*) or ((right or left) N1 sided)) N1 fail*) or CHF or ((cardiac or heart) N1 decompensation) or ((cardiac or myocardial or heart or systolic or diastolic or atria# or ventricular) N1 d#sfunction*) or ((cardiac or myocardial) N1 (insufficien* or in-sufficien*)) or ((heart or cardiac) N1 edema) or HFpEF or HFrEF*))
S3	TI ((((renocardia* or reno-cardia* or cardiorenal or cardio-renal) N1 (syndrome# or insufficien* or in-sufficien* or d#sfunction*))) OR AB (((renocardia* or reno-cardia* or cardiorenal or cardio-renal) N1 (syndrome# or insufficien* or in-sufficien* or d#sfunction*))) OR MW (((renocardia* or reno-cardia* or cardiorenal or cardio-renal) N1 (syndrome# or insufficien* or in-sufficien* or d#sfunction*)))
S4	TI (((parox#sm#l N2 (dyspnea* or dyspnae*)) or (asmtha* N2 cardia*)).mp.) OR AB (((parox#sm#l N2 (dyspnea* or dyspnae*)) or (asmtha* N2 cardia*))) OR MW (((parox#sm#l N2 (dyspnea* or dyspnae*)) or (asmtha* N2 cardia*)))
S5	TI cardia* N1 edema* OR AB cardia* N1 edema* OR MW cardia* N1 edema*
S6	TI (((((s#stolic or s#s-tolic or diastolic or dia-stolic or ventric*) N2 (fail* or d#sfunction* or insufficien* or in-sufficien*)) or HFpEF or HFrEF)) OR AB (((((s#stolic or s#s-tolic or diastolic or dia-stolic or or ventric*) N2 (fail* or d#sfunction* or insufficien* or in-sufficien*)) or HFpEF or HFrEF)) OR MW (((((s#stolic or s#s-tolic or diastolic or dia-stolic or ventric*) N2 (fail* or d#sfunction* or insufficien* or in-sufficien*)) or HFpEF or HFrEF))
S7	TI (((((primary or secondary or myocardia*) N1 (cardiomyopath* or disease*)) or (myocardiomyopath* or myo-cardiomyopath*))) OR AB (((((primary or secondary or myocardia*) N1 (cardiomyopath* or disease*)) or (myocardiomyopath* or myo-cardiomyopath*))) OR MW (((((primary or secondary or myocardia*) N1 (cardiomyopath* or disease*)) or (myocardiomyopath* or myo-cardiomyopath*)))
S8	TI ((cardiomyopath* N4 (familial or alcoholic or congestive or dilate* or idiopath* or idio-path* or 1a# or recessive or autosom* or auto-som* or cmd1a or lmna or defect1 or defect-1 or restrict*))) OR AB ((cardiomyopath* N4 (familial or alcoholic or congestive or dilate* or idiopath* or idio-path* or 1a# or recessive or autosom* or auto-som* or cmd1a or lmna or defect1 or defect-1 or restrict*))) OR MW ((cardiomyopath* N4 (familial or alcoholic or congestive or dilate* or idiopath* or idio-path* or 1a# or recessive or autosom* or auto-som* or cmd1a or lmna or defect1 or defect-1 or restrict*)))
S9	(MH "Cardiomyopathy, Dilated+") OR (MH "Cardiomyopathy, Alcoholic+") OR (MH "Cardiomyopathy, Hypertrophic+")
S10	TI ((Cardiomegal* or ((enlarge* or en-large* or hyper-troph* or hypertrophy*) N1 heart))) OR AB ((Cardiomegal* or ((enlarge* or en-large* or hyper-troph* or hypertrophy*) N1 heart))) OR MW ((Cardiomegal* or ((enlarge* or en-large* or hyper-troph* or hypertrophy*) N1 heart)))
S11	TI ((((cardiomyopath* or obstruct* or heredit* or idiopath* or idio-path* or ventric* or asymetr* or a-symmetr* or familial or subaort* or sub-aort*) N4 (hypertroph* or hyper-troph* or gene*))) OR AB (((cardiomyopath* or obstruct* or heredit* or idiopath* or idio-path* or ventric* or asymetr* or a-symmetr* or familial or subaort* or sub-aort*) N4 (hypertroph* or hyper-troph* or gene*))) OR MW (((cardiomyopath* or obstruct* or heredit* or idiopath* or idio-path* or ventric* or asymetr* or a-symmetr* or familial or subaort* or sub-aort*) N4 (hypertroph* or hyper-troph* or gene*)))
S12	(MH "Heart Hypertrophy+")
S13	TI ((((left or right) N1 (hypertroph* or hyper-troph*))) OR AB ((((left or right) N1 (hypertroph* or hyper-troph*))) OR MW ((((left or right) N1 (hypertroph* or hyper-troph*)))
S14	TI ((((athlete* N1 syndrome*) or ((exercise-induce* or exerciseinduce*) N1 cardiomegal*))) OR AB (((athlete* N1 syndrome*) or ((exercise-induce* or exerciseinduce*) N1 cardiomegal*))) OR MW (((athlete* N1 syndrome*) or ((exercise-induce* or exerciseinduce*) N1 cardiomegal*)))

Table 1. Search Strategy with Mesh Terms Conducted in CINAHL (cont)

S15	TI ((Low N2 (cardia* or output* or out-put* or syndrome*))) OR AB ((Low N2 (cardia* or output* or out-put* or syndrome*))) OR MW ((Low N2 (cardia* or output* or out-put* or syndrome*)))
S16	(MH "Cardiac Output+") OR (MH "Cardiac Output, Decreased") OR (MH "Decreased Cardiac Output (NANDA)")
S17	(MH "Ventricular Dysfunction+") OR (MH "Ventricular Dysfunction, Right") OR (MH "Ventricular Dysfunction, Left+")
S18	(MH "Takotsubo Cardiomyopathy+")
S19	TI (((apical or a-pical or broke* or tako-tsubo or takotsubo or stress) N2 (syndrome* or cardiomyopath*))) OR AB (((apical or a-pical or broke* or tako-tsubo or takotsubo or stress) N2 (syndrome* or cardiomyopath*))) OR MW (((apical or a-pical or broke* or tako-tsubo or takotsubo or stress) N2 (syndrome* or cardiomyopath*)))
S20	(MH "Myocardial Diseases+")
S21	TI myocardia* N1 disease* OR AB myocardia* N1 disease* OR MW myocardia* N1 disease*
S22	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21
S23	(MH "Lebanon+")
S24	TI ((leban* or liban* or lubnan* or lobnan* or byblos or tyre or sidon or tripoli or beyrouth or beirut or mount-lebanon or b#qaa or b#kaa or b'qaa or b#'qaa or jnoub or janoub or daheya or akkar or batroun or j#b#il or j#b#yl or sho#eif#t or cho#eif#t or nabatey#eh or nabatey#a# or hasbay#eh or hasbay#a#).) OR AB ((leban* or liban* or lubnan* or lobnan* or byblos or tyre or sidon or tripoli or beyrouth or beirut or mount-lebanon or b#qaa or b#kaa or b'qaa or b#'qaa or jnoub or janoub or daheya or akkar or batroun or j#b#il or j#b#yl or sho#eif#t or cho#eif#t or nabatey#eh or nabatey#a# or hasbay#eh or hasbay#a#).) OR MW ((leban* or liban* or lubnan* or lobnan* or byblos or tyre or sidon or tripoli or beyrouth or beirut or mount-lebanon or b#qaa or b#kaa or b'qaa or b#'qaa or jnoub or janoub or daheya or akkar or batroun or j#b#il or j#b#yl or sho#eif#t or cho#eif#t or nabatey#eh or nabatey#a# or hasbay#eh or hasbay#a#).
S25	S22 AND (S23 OR S24)

Legend: CINAHL (Cumulated Index to Nursing and Allied Health Literature)

three studies (65%, 57%, versus 25%). Only two studies reported employment status of 18% (Deek et al., 2017) and 35% (Mansour et al., 2020). In addition to these same studies, Moukarbel and Arnaout (2003) reported the participants' marital status as married with 63%, 78%, and 100%. Atrial fibrillation, reported in five studies, was present in 220 participants (22.49%). A total of 734 participants (33.02%) had coronary artery disease, 1,169 participants (50.32%) had hypertension, 499 (27.47%) had dyslipidemia, 535 (24.07%) had diabetes, 90 (14.59%) had chronic obstructive pulmonary disease, and 251 (11.81%) had renal disease. EF was reported in six studies, with a mean of 47.28% (SD = 10.44). Five studies reported the length of hospital stay with a combined mean of 10.28 days (SD = 7.97). Table 3 includes sample characteristics and associated comorbidities.

Synthesis of Results

Sociodemographic Burden. The differences in the samples were evident with the varying sociodemographic characteristics in different studies. Age ranged between 33.7 and 73 years. This wide range is due to the youngest sample of women with peripartum cardiomyopathy. In 7 out of 11 studies, most of the sample were males. Cardiac comorbidities were prevalent with the varying rates of atrial fibrillation, coronary artery disease, and hypertension. The mean EF was middle ranged given that three of the studies presenting their participants' EF ranged around 30%, whereas the other three were over 60%.

Self-care and Symptom Management. Promoting self-care and engagement in symptom management is a key recommendation of best practice

Table 2. Detailed Summary of the Included Studies

Authors	Design	Sample Size	Primary Outcomes	Results	Quality Assessment*
Massouh et al. (2020)	Cross-sectional correlational design	Patients with HF[1]: 100	Self-care behaviors and their determinants	Self-care was suboptimal in Lebanese patients with HF. Common self-care maintenance behaviors performed by Lebanese patients with HF included using a system to help remember medicines, keeping doctor or nurse appointments, checking for ankle swelling, and eating a low salt diet. Self-care behaviors predominantly low in this population were weighing oneself and exercising for 30 minutes. Higher HF specific knowledge, higher self-care confidence, and lower NYHA[2] Class II predicted better self-care maintenance. HF specific knowledge score, higher self-care maintenance, no recent hospitalization, and being unemployed predicted better self-care confidence. Self-care management was predicted by self-care confidence alone.	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Yes Q6: Yes Q7: Yes Q8: Yes
Zahwe et al. (2020)	Psychometric evaluation of Arabic version of MLHFQ[3]	Patients with HF: 210	Psychometric properties of Arabic version of MLWHF questionnaire	The Arabic version of MLHF questionnaire is valid and reliable and can be used in Arabic-speaking Lebanese population with HF. The confirmatory factor analysis yielded three factors: physical, emotional, and social. Three items (4, 8, and 15) had low loadings. The overall Cronbach's alpha coefficient was 0.92. Higher scores on the MLHFQ questionnaire (lower quality of life) were associated with depression, evaluated using the PHQ-9[4], higher NYHA class, and HF-hospitalization in the past 6 months.	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Unclear Q6: Unclear Q7: Yes Q8: Yes
Sadek et al. (2020)	Randomized controlled trial	Patients with HF: 40	Inspiratory muscle function, exercise capacity, and quality of life (measured by MLWHF)	The combined intervention of HI-AIT[5] and IMT[6] showed significant improvement over the single intervention (HI-AIT or IMT) in terms of maximal inspiratory training (62%, 24%, 25%), exercise time (62%, 29%, 12%), the 6-minute walk test (23%, 15%, 18%), and the MLWHF questionnaire (56%, 47%, 36%).	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Yes Q6: Yes Q7: Yes Q8: Yes

Table 2. Detailed Summary of the Included Studies (cont)

Authors	Design	Sample Size	Primary Outcomes	Results	Quality Assessment*
Mansour et al. (2020)	Retrospective database review	In-patients with HF: 191	DD[7] and coronary artery calcium score	Patients with higher CAC[8] score were older, had more comorbidities, lower e′, and were more likely to have DD. DD was associated with increased OR[9] for subclinical CAC; OR = 3.66, 95% CI[10] = 1.54–8.72, p = 0.03. In the multivariate analysis, DD alone, age > 65 years, or both were associated with almost threefold increase of subclinical atherosclerosis. Compared with patients' age < 65 years and normal diastolic function, those age > 65 years or DD had OR = 3.49, 95% CI = 1.45–8.35, and p = 0.005 for subclinical coronary atherosclerosis (CAC > 0), whereas those age > 65 and DD had OR = 9.30, 95% CI = 2.00–42, and p = 0.004.	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Yes Q6: Unclear Q7: Yes Q8: Yes
Abou Dagher et al. (2018)	Single-center; retrospective; cohort design	Patients with sepsis: 174 Patients with HF: 87	In-hospital mortality of patients with HF and sepsis compared with patients without HF.	Patients with HF and sepsis were at a higher risk of in-hospital mortality than patients who are not diagnosed with HF. Mortality: OR = 2.45, 95% CI = 1.22–2.48, p = 0.01 Prevalence of severe sepsis or septic shock was higher in patients with HF compared with those without HF. Diagnosis of sepsis or septic shock: OR = 4.45, 95% CI = 2.218.98, p < 0.0001	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Yes Q6: Yes Q7: Yes Q8: Yes
Deek et al. (2017)	Multicenter; randomized control trial	Patients with HF: 259 Control: 130 Intervention: 126	All caused readmission	A single educational intervention showed improved outcomes. The intervention lowered readmission rates [OR = 0.40, 95% CI = 0.17–0.91, p = 0.02], showed fewer major vascular events [OR = 0.47, 95% CI = 0.40–0.54, p = 0.01], enhanced self-care maintenance [OR = −8.93, 95% CI = 13.37–4.49, p < 0.0001], and confidence [OR = −8.95, 95% CI = −14.6 to −13.32, p < 0.0001], and showed less healthcare utilization [OR = 0.39, 95% CI = 0.18–0.83, p = 0.01] when compared with no intervention. Education did not improve the quality of life after 30 days.	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Yes Q6: Yes Q7: Yes Q8: Yes

Table 2. Detailed Summary of the Included Studies (cont)

Authors	Design	Sample Size	Primary Outcomes	Results	Quality Assessment*
Deek et al. (2016)	Retrospective; descriptive design	Patients with HF: 187	Readmission rates at 30, 60, and 90 days	72 patients with HF were readmitted. Readmission rates were 15%, 22.2%, and 27.8% at 30, 60, and 90 days respectively. DM[11] [OR = 2.681, 95% CI = 1.176–6.110, p = 0.09], CAD[12] [OR = 3.3, 95% CI = 1.462–7.449, p = 0.004], elevated gamma GT7 [OR = 2.675, 95% CI = 1.016–7.068, p = 0.046], and prolonged LOS[13] [OR = 7.842, 95% CI = 1.819–33.809, p = 0.006] were significant predictors of readmission.	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Yes Q6: Unclear Q7: Yes Q8: Yes
Matta et al. (2016)	Single-center prospective cohort design	1,356 patients presenting for echocardiography	Effect of physical inactivity on DD	Physically inactive patients who had a higher than median LVMI[14] had higher risk of having DD [OR = 2.82, 95% CI = 1.58–5.05, p < 0.001]. Age [OR = 1.13, 95% CI = 1.11–1.14, p < 0.001], higher BMI[15] [OR = 1.04, 95% CI = 1.004–1.07, p = 0.029] and SBP[16] [OR = 1.011, 95% CI = 1.001–1.02, p = 0.033], DM [OR = 1.85, 95% CI = 1.14–2.98, p = 0.012], use of anticoagulants [OR = 3.55, 95% CI = 1.26–10.0, p = 0.017], and a smaller LVEDD[17] [OR = 0.91, 95% CI = 0.85–0.97, p = 0.03] were all associated with an increased odds of having DD.	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Yes Q6: Unclear Q7: Yes Q8: Yes
Tatari et al. (2015)	Cross-sectional study	All healthcare providers reported costs on HF hospitalization in 600 outpatient visits.	Annual cost of HF care.	A total of 72,000 individuals suffered from HF. The actual average cost of HF care in Lebanon for an average of 11 days of hospitalization is $3,769. The annual total cost of HF care was estimated at $103,673,535 with $38,081,535 in direct cost for HF hospitalizations. The cost of outpatient HF care was estimated at $65,592,000 with $911 spent for each patient per year. The true cost was estimated at $104 million dollars.	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Yes Q6: Unclear Q7: Yes Q8: Yes
Kossaify and Nicolas (2013)	Single-center observational design	132 outpatients presenting for echocardiography	Effects of BMI and WC[18] on LVEDD	Overweight and obese participants had higher diastolic dysfunction (abnormal BMI, p = 0.037; abnormal WC, p = 0.035) compared with participants with a normal BMI and WC. BMI [OR = 2.75, 95% CI = 1.34–5.67, p = 0.006] and age [OR = 1.08, 95% CI = 1.04–1.12, p < 0.0001] appeared to be significant independent risk factors for LVEDD.	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Yes Q6: Yes Q7: Yes Q8: Yes

Table 2. Detailed Summary of the Included Studies (cont)

Authors	Design	Sample Size	Primary Outcomes	Results	Quality Assessment*
Moukarbel and Arnaout (2003)	Single-center cohort design	10 patients with LVD[19]	Acute and long-term outcomes of PPCM[20]	Approximately 60% of the patients in this sample had severe LVD, whereas the remaining 40% had moderate LVD. After clinical and echocardiographic follow-ups, all included patients showed improvement in their ejection fraction. About 70% of the patients went back to NYHA Class I, whereas the remaining 30% improved to NYHA Class II.	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Yes Q6: Yes Q7: Yes Q8: Yes

Abbreviations: [1]HF (Heart failure); [2]NYHA (New York Heart Association); [3]MLWHF (Minnesota Living with Heart Failure); [4]PHQ-9 (Patient Health Questionnaire); [5]HI-AIT (High-intensity Aerobic Interval Training); [6]IMT (Inspiratory Muscle Training); [7]DD (Diastolic dysfunction); [8]CAC (Coronary artery calcium); [9]OR (Odds ratio); [10]CI (Confidence interval); [11]DM (Diabetes mellitus); [12]CAD (Coronary artery disease); [13]LOS (Length of stay); [14]LVMI (Left ventricular mass index); [15]BMI (Body mass index); [16]SBP (Systolic blood pressure); [17]LVEDD (Left Ventricular end diastolic diameter); [18]WC (Waist circumference); [19]LVD (Left ventricular dysfunction); [20]PPCM (Peripartum cardiomyopathy); *Joanna Briggs Institute Critical Appraisal Checklist: Q1: Clearly defined criteria for inclusion, Q2: Detailed description of study subjects and setting, Q3: Valid and reliable measurement of exposure, Q4: Standard criteria used for measurement of condition, Q5: Confounding variables identified, Q6: Strategies to deal with confounding variables, Q7: Valid and reliable measurement of outcomes, Q8: Appropriate statistical analysis used.

guidelines. Two studies reported self-care (Deek et al., 2017; Massouh et al., 2020). A common scale called the Arabic version of the Self-Care in HF Index (SCHFI) was used. The scale reports self-care through three subscales: maintenance, management, and confidence (Deek & Chang et al., 2016).

Self-care scores in both studies were low. However, the mean scores varied significantly between the two samples. One sample had mean self-care scores of 67.26 on self-care maintenance, 66.96 on management, and 69.5 on self-care confidence (Massouh et al., 2020). In the other sample, lower scores were reported as 35 on self-care maintenance, 16 on management, and 41 on self-care confidence (Deek et al., 2017). An important note was that participants in both samples scored lowest on the self-care management subscale. In addition, Lebanese females generally scored higher than men (maintenance: 70.55 ± 14.20 versus 66.22 ± 14.40; confidence: 73.44 ± 4.20 versus 68.26 ± 19.97; and management: 70.71 ± 24.64 versus 65.54 ± 20.06) in Massouh's sample (Massouh et al., 2020), whereas males scored higher than fema-

les on maintenance (35.22 ± 14.11 versus 34.22 ± 14.93) and confidence (42.31 ± 13.35 versus 39.11 ± 17.01) scores in Deek's sample (Deek et al., 2017).

Employment status was a significant determinant of self-care in both studies. Those employed reported higher scores in maintenance (67.33 ± 13.45) and management (68.33 ± 22.49) and lower scores in confidence (64.02 ± 18.21) in Massouh et al.'s (2020) sample; however, these findings were reversed in Deek et al.'s (2017) sample [in employed versus unemployed on maintenance (32.07 ± 14.46 versus 35.35 ± 14.44), management (13.55 ± 14.04 versus 16.16 ± 15.09), and confidence (42.37 ± 13.93 versus 40.55 ± 15.42) subscales]. Moreover, hospitalized patients had justifiably lower self-care maintenance and management scores and significantly lower self-care confidence scores (Massouh et al., 2020). Conversely, higher self-care maintenance and management scores were reported for those with previous hospitalization (Deek et al., 2017).

Marital status also seemed to affect the subscales

of self-care (Massouh et al., 2020). Participants who were not married had higher self-care maintenance (67.27 ± 13.48), confidence (70.76 ± 14.4), and management (72.69 ± 14.4) than married participants. Patients who were currently hospitalized scored lower on all three scales (self-care maintenance: 64.99 ± 13.35; self-care confidence: 60.76 ± 16.98; and self-care management: 65.65 ± 21.23) than those who were not hospitalized (Massouh et al., 2020). HF severity was a predictor of self-care in both samples. Better functional status (lower NYHA score)

Table 3. List of Sociodemographic Characteristics and Comorbidities of the Participants in the Included Studies

| Author (year) | Sociodemographic | | | | | | | Comorbidities n (%) | | | | | |
	Sample Size	Age (Mean ± SD)	Gender (Male; n (%))	High School n (%)	Smoking Status n (%)	Married	EF	AFib	CAD	HTN	DLM	DM	COPD
Massouh et al. (2020)	100	67.59 ± 12.09	76 (76)	65 (65)	NA	78 (78)		NA	NA	83 (83)	NA	NA	NA
Zahwe et al. (2020)	210	64.26 ± 15.18	157 (74.8)	119 (59)	40 (19)	156 (74.3)		45 (21.4)	NA	NA	NA	NA	NA
Sadek et al. (2020)	40	52.12 ± 11.75	20 (50)	NA	NA	NA		NA	NA	NA	NA	NA	NA
Mansour et al. (2020)	191	52 ± 12	158 (83)	NA	123 (64)	NA	65+7	NA	NA	NA	NA	NA	NA
Abou Dagher et al. (2018)	174	73 ± 14.68	55 (63.2)	NA	27 (31)	NA		29 (33.3)	66 (75.9)	70 (80.5)	32 (36.8)	44 (50.6)	22 (11.80)
Deek et al. (2017)	256	67 + 8	141 (55)	63 (25)	119 (78)	162 (63)	36+12	82 (32)	165 (65)	185 (72)		118 (46)	46 (18)
Deek et al. (2016)	187	63.71+12.87	111 (59.4)	NA	71 (42)	NA	33.09+13.1	32 (17)	95 (50.8)	114 (61)	28 (15)	78 (41.70)	22 (11.80)
Matta et al. (2016)	1,356	52.9 ± 17.4	660 (48.7)	NA	635 (46.8)	NA	60.5+4.1	NA	278 (20.5)	577 (42.6)	411 (30.3)	225 (16.6)	
Tatari et al. (2015)	151	65 (28 – 93) 10.7*	62 (41)	NA	NA	NA		32 (21)	71%	66%		40%	
Kossaify et al. (2013)	99	61.59 ± 13.9	54 (54.5)	NA	NA	NA	61.64	NA	23 (82.1)	40 (80)	24 (88.9)	9 (90)	
Moukarbel et al. (2003)	10	33.7	0 (0)	NA	NA	NA	27.5	NA	NA	NA	NA	NA	NA
Total	2,774	57.98	1,494	247	1,015	250	47.27	220	734	1,169	499	535	90

Legend: AFib (Atrial fibrillation); CAD (Coronary artery disease); HTN (Hypertension); DLM (Dyslipidemia); DM (Diabetes mellitus); COPD (Chronic obstructive pulmonary disease).

was associated with better self-care (self-care maintenance: 63.87 ± 14.21; self-care confidence: 65.47 ± 19.86; and self-care management: 66.43 ± 21.37; Massouh et al., 2020). The same was true for Deek et al.'s (2017) sample for maintenance but reversed for management and confidence. Participants with NYHA Classes I and II had significantly lower scores on management compared with those with Classes III and IV.

Diastolic Dysfunction and HF. Physical inactivity, higher body mass index, increased age, and multiple comorbidities were significantly associated with diastolic dysfunction (Matta et al., 2016). Diastolic dysfunction or age was found to be significantly associated with subclinical atherosclerosis. However, when the diastolic dysfunction and age were combined, the risk of developing atherosclerosis was 9 times higher (Mansour et al., 2020). Conversely, physical activity, specifically high-intensity aerobic interval training and inspiratory muscle training, improved exercise time, 6-minute walk test, and quality of life (Sadek et al., 2020). The latter was decreased with readmission, depression, and higher NYHA class (Zahwe et al., 2020) but was not changed with education (Deek et al., 2017).

Discussion

This review aimed to gather and analyze the available literature on HF in Lebanon and subsequently highlight the gaps in knowledge, which will help guide future research and practice improvements in Lebanon and surrounding countries of similar sociopolitical and economic conditions. The unique features of collectivist cultures make strategies for improvement challenging, whereas many self-management strategies are based on Western cultures where there exists a strong emphasis on individuals. By contrast, in collectivist cultures, there exists an increased importance of family involvement. In many countries such as Lebanon, the rapidly changing political and economic circumstances challenge the ability to plan strategically. This phe-

nomenon, along with the high rates of illiteracy that were established in the older adult population with HF, render regular educational strategies to be ineffective. The variance in samples in this review showed varying results in terms of sociodemographic characteristics and self-care practices. The latter significantly varied with educational status, marital status, and clinical profile. This result was evident with the great difference in the level of education among the study samples. This variance could be explained by the availability of a multidisciplinary disease management program at one of the data collection sites (Massouh et al., 2020) and the lack of such advanced service at the other. Other variables that could contribute to self-care practices included motivation, experience, and skills, in addition to cultural beliefs and values (Jaarsma et al., 2017). Cultural beliefs and values may be key aspects to consider when evaluating or planning interventions related to self-care in collectivist cultures (Jaarsma et al., 2017) as was evaluated with patients with HF to show improved self-care and read-mission outcomes (Deek & Noureddine et al., 2016).

Other factors to consider are the support and access to healthcare (Jaarsma et al., 2017). These factors were evidently a challenge in the Lebanese setting due to the dire financial situation in the country and the resultant lack of medical supplies and medications. These common faces of instability challenge the countries of the MENA region (Dhaoui, 2019). Changes in the healthcare system and, consequently, care and follow-up tailored to the needs of these patients are inevitable.

The low scores on the self-management subscale were similar to findings of a study conducted in 15 countries (Jaarsma et al., 2013), as well as other developing countries such as Taiwan (Tung et al., 2012) and Iran (Zamanzadeh et al., 2012). However, the improved self-care scores on the three subscales of the SCHFI, in one study, with better functional status could be attributed to higher levels of energy in participants with better functional status to devote to

self-care. They may also believe that being less symptomatic is a consequence of them managing their HF well. However, participants with lower NYHA classification had lower scores on management compared with those with NYHA Classes III and IV. This result was consistent with studies that reported that patients with HF engage in self-care when their cases are worsened, reflected by lower ejection fraction (Seto et al., 2011). An interesting finding was the higher scores across the three subscales of the SCHFI in single patients with HF compared with those who were married. This finding contradicted the previous literature, which presents the importance of family involvement and the importance of a caregiver, in general, in collectivist cultures. However, this finding was retrieved from a sample that was considered well-educated and of higher sociodemographic status (Massouh et al., 2020) than that of the study showing contradicting findings (Deek et al., 2017). These findings should be further investigated in a study with a larger sample size that would allow generalizability to people with HF.

The Arabic-translated version of the SCHFI was previously validated in the Lebanese setting with good psychometric properties. The findings of the validation study showed that the modified version of this tool indicated favorable outcomes. Such outcomes include dropping items from three subscales, which should be considered when evaluating self-care in future studies and allowing larger samples for better judgment on the psychometric properties of this Arabic-translated version of the SCHFI (Deek & Chang et al., 2016). Such evaluation could be performed across different countries of the region to allow for cross-cultural comparison and enhance better understanding of the different, and possibly similar, needs of patients with HF.

More national descriptive studies should be conducted to outline the needs of the Lebanese population with HF in light of all the rapid sociopolitical and economic changes in the country. Moreover, a national registry may assist in monitoring health outcomes. The challenges

facing HF care in low-and middle-income countries are vast. These challenges include but not limited to economic, political, health system, and social issues. Fortunately, these modifiable variables, when and if amended, can allow for stability and security in terms of chronic disease management and the ability of the population with HF to maintain a minimum level of wellbeing. Addressing the educational needs of people living with HF while considering their educational level and health literacy is pivotal. The differences in regions are many but the culture of the country is somehow unified and can be targeted through personalized and flexible educational interventions.

This review can be investigated within the context of the current times in Lebanon and the MENA region. In the midst of the COVID-19 pandemic, on August 4, 2020, Beirut, the capital of Lebanon, witnessed one of the biggest explosions in history, causing further devastation (Farha & Abi Jaoude, 2020). Isolating the cumulative experience of trauma for patients and healthcare workers alike is not valid. As scholars seek to develop interventions for HF in Lebanon and the region, these factors should be considered. Nurses can have a powerful voice to lead systems change and address critical social issues (Dhaini et al., 2020). This notion has been proven once and again through nurse-led multidisciplinary interventions aimed at improving HF outcomes (Rice et al., 2018). In addition, education is one of the main and pivotal roles of the nursing profession, which should be tailored to meet the needs of people with low literacy levels, as seen in the countries of this region (Asbu et al., 2017).

Conclusion

Research on HF remains highly limited in Lebanon and the MENA region and is considerably needed to inform healthcare practitioners regarding the needs of the population. Therefore, national and regional studies should be conducted to assess the current trends in patterns of care and health utilization and healthcare inter-

ventions developed that are culturally appropriate. Scholars should also consider the many changes and challenges facing the nursing profession and the healthcare system in general in delivering the optimal care it is aiming for. Future studies should address the limitations of this work, such as the lack of generalizability considering the heterogeneity of the samples' clinical and sociodemographic characteristics from different locations of the country. In addition, the limited number of intervention studies did not allow for a rigorous analysis to yield accurate results. Despite these limitations, these data are useful in developing future interventions. The design of interventions should be tailored to meet the continuously changing needs of people with HF with the rapid changes in the country. This factor should be initially addressed through continuous evaluation of the financial and sociopolitical changes and their effects on the healthcare system and patients. Following the understanding of these implications, these factors should be adapted to practice while aiming to improve patient outcome.

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Implementation of Home Care Services by Community Health Centers (Puskesmas) in Makassar City, Indonesia

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Abstract

Home care services by health professionals, such as doctors, nurses, and other health care professionals, target to provide health care services, including health education, physical examination, or other treatments such as physical therapy or medication. This study aimed to evaluate the implementation of home care (nursing care and home care services) in Makassar City in accordance with government guidelines. A qualitative descriptive study was conducted by interviewing nurses (15 participants) from several community health centers (Puskesmas) in Makassar City, Indonesia who have implemented a home care program for at least a year. Four main themes had emerged, namely, management of home care services, nurses' roles in home care services, perceived barriers, and community benefits. Despite some barriers, the home care programs delivered by health care professionals including nurses in Puskesmas in Makassar City have been well implemented in accordance with the guidelines. On the basis of the obstacles faced by the nurses, one recommendation is for the government to provide specific guidelines on the types of patients to be included in these services. The government also needs to ensure that the community knows the types of patients' condition who can avail these services.

Keywords: community health centers, home care service, nurses' roles

Abstrak

***Implementasi Pelayanan Perawatan di Rumah* (Home Care)** *oleh Puskesmas di Kota Makassar, Indonesia*. *Pelayanan perawatan di rumah* (home care) *oleh petugas kesehatan seperti dokter, perawat, dan petugas kesehatan lainnya bertujuan untuk memberikan pelayanan kesehatan meliputi pendidikan kesehatan, pengkajian fisik, atau memberikan terapi fisik ataupun pengobatan. Penelitian ini bertujuan untuk mengevaluasi kesesuaian antara implementasi pelaksanaan pelayanan* home care *di kota Makassar dengan petunjuk teknis pelaksanaan* home care *dari pemerintah. Penelitian ini adalah penelitian deskriptif kualitatif dengan melakukan wawancara mendalam kepada 15 orang perawat dari beberapa Puskesmas di kota Makassar, Indonesia, yang terlibat dalam kegiatan pelayanan* home care *minimal selama satu tahun. Terdapat empat tema utama yang ditemukan dalam penelitian ini antara lain, pengelolaan* home care, *peran perawat dalam pelaksanaan* home care, *hambatan dalam pelaksanaan* home care, *dan manfaat dari pelaksanaan* home care *di kota Makassar. Secara umum, pelaksanaan kegiatan* home care *sudah dilaksanakan sesuai petunjuk teknis dengan baik oleh perawat di Puskesmas kota Makassar walaupun masih ada beberapa hambatan dalam pelaksanaan kegiatan ini. Pemerintah diharapkan membuat petunjuk pelaksanaan (SOP) yang lebih jelas terkait pelaksanaan kegiatan ini atau melakukan pembaharuan regulasi terkait program ini.*

Kata Kunci: home care*, peran perawat, puskesmas*

Introduction

Life expectancy has risen substantially, and socio-demographic changes in the last decades have affected home care needs (Genet et al., 2012; World Health Organization, 2021). Most health care systems in many countries underwent significant transformation (Braun & Cony-beare, 2017; Genet et al., 2012). Home care has been implemented worldwide as a comprehensive system of community health care services (Braun & Conybeare, 2017; Genet et al., 2012; Shahsavari et al., 2018) where health professionals provide a form of care at patients' homes. In an ideal situation, community health care should be a multidisciplinary team effort in

which nurses play an important role alongside general practitioners, psychologists, physiotherapists, nutritionists, midwives, and other specialists (Feltner et al., 2014).

Home care services in most countries included hospital-based home nursing services, customized visiting health services, and long-term care insurance-based nursing services (Zeng et al., 2015). Home care is an ongoing program that focuses on long-term care to improve patient care, minimize treatment costs, and reduce hospitalization period and queuing at the hospital (Wojtak & Stark, 2016).

In many countries, home care services are a WHO recommendation. Home care services in the form of home visits by health professionals, such as doctors, nurses, and pharmacists, aim to provide health care services, including health education, physical examination, or other treatments such as physical therapy or medication (Zeng et al., 2015). In Australia, for example, home care is one of the fastest-growing health program and is supported by the Australian Federal Government, which also establishes home care specifically for the elderly above 65 years old or for indigenous Australians aged 50 years or above with chronic illness and disability (Palesy et al., 2018). However, the implementation of home care services is challenging and effortful due to the variety of services delivered and the lack of human resource (Shahsavari et al., 2018). As a developing country in Southeast Asia, Indonesia also has implemented home care services as one of the solutions to anticipate the number of patients who cannot be accommodated in the hospital but do not need hospital equipment (Putra et al., 2018). In Indonesia, home care service is a part or continuation of sustainable and comprehensive health services provided to individuals and families in their homes and aims to improve, maintain, or restore health or maximize the level of independence and minimize the effect of the disease (Ministry of Health Republic of Indonesia, 2014). In Indonesia, home care services are provided by hospitals, community health centers (Pus-

kesmas), and private healthcare providers (not affiliated with hospitals or Puskesmas). However, this program is not provided by all hospitals and Puskesmas in Indonesia and is mostly conducted only in large cities and province's capital. Various level of health care services are delivered to the community in accordance with the government policy in each province (Ministry of Health Republic of Indonesia, 2019). In Makassar City, home care services are mostly provided by Puskesmas. Only one hospital provides home care services, in which the program is optional but not covered by Indonesian health insurance (BPJS). The hospital mainly focused on follow-up home care services, and the patients should pay for these services.

In Indonesia, the population has rapidly grown with around 262 million people in 2017, and the morbidity rate has also increased due to tropical and degenerative diseases (Ministry of Health Republic of Indonesia, 2018). This situation is a challenge for the government towards public services in Indonesia. To date, communities complained of government programs because they neither meet the interests of the community nor provide essential benefits in terms of health, especially for the poor or lower middle class (Putra et al., 2018).

South Sulawesi, one of the provinces in Indonesia, has realized the innovation of health care and has developed home care services since 2015 (Jaringan Inovasi Pelayanan Publik Sulsel, 2019). This innovation is important especially in Makassar City because of its uneven public health services that require improvement by improving facilities and infrastructure and increasing community access to health services (Putra et al., 2018). As stated in the Makassar City government regulation, Puskesmas is the coordinator of home care service and is responsible for its management in Makassar City (Health Office South Sulawesi, 2017; Jaringan Inovasi Pelayanan Publik Sulsel, 2019). Home care services are provided by a team consisting of doctors, nurses, other health workers, and a case coordinator that is usually a nurse from Pus-

kesmas (Putra et al., 2018; Suprapto, 2018).

Home care in Makassar has been well implemented since 2015 by 46 health centers throughout the city (Putra et al., 2018) as evidenced by the number of home care service innovation users in 2016 (around 3,379 patients) (Jaringan Inovasi Pelayanan Publik Sulsel, 2019). The implementation of home care is inseparable from the help and support of the local government in the form of a mini ambulance, namely, *Dottoro'ta* (Our Doctor), ECG equipment, and Telemedicine (Putra et al., 2018). However, home care is not necessarily implemented as per the definition set by the Makassar City government. The annually growing number of home care users confirmed that this program has spread widely and is growing rapidly in Makassar City. However, the number of users does not guarantee that the quality and accuracy of the services provided follow the concept of home care and the role of health workers in providing services. A previous study described the home care program in Makassar City but did not explore the specific roles of nurses and the implementation of this program (Suprapto, 2018). Thus, evaluating the implementation of home care services provided by Puskesmas in Makassar City from the nurses' perspectives is important.

Methods

Design and participants. A qualitative, exploratory, and descriptive study was conducted by selecting 15 nurses involved in home care service using purposive sampling and subjecting them to semi-structured interviews (McKenna & Copnell, 2020). The research team consisted of nursing lecturers who have experiences in qualitative nursing research and nursing students (all females) who have conducted interviews in the community. Prior to the interview, the nursing students were trained by the team leader (Doctoral in Community Health Nursing) on how to conduct interview and underwent an interview practice (pilot test of two participants who were previously involved in the program but were moved to another service and were not

included in the data collection analysis) prior to do the interview. This study was conducted from September to October 2019 in several Puskesmas in Makassar City that implement home care service. A letter was sent to the Makassar City Health Office to ask permission and determine which Puskesmas implement home care service. From 23 Puskesmas in Makassar City, only 15 implement home care programs. Letters were then sent to the heads of the 15 Puskesmas to ask the list of nurses who provide home care service and can participate in this study. A meeting was arranged to conduct interview with the participants.

Interview process and data analysis. All the nurses from 15 Puskesmas agreed to join the study, and the face-to-face interview was conducted for around 40–60 minutes by the researcher mostly in the Puskesmas where the nurses work. No relationship existed between the research team and the participants prior to the study, and their formed relations were merely limited to the research context. This interview was conducted in Bahasa Indonesia and recorded with permission from the participants. Field notes were also taken during the interview. Data were transcribed to verbatim in Bahasa Indonesia after each interview and analyzed using Open Code 4.03 software (ICT Services and System Development and Division of Epidemiology and Global Health, 2015) to obtain an overview of the experience conducting home care for later comparison with literature (Holloway, 2017). The data were treated with qualitative narrative using thematic analysis derived from data coding (McKenna & Copnell, 2020; Speziale, 2011).

Rigor. The transcribed text of the interviews was read and reread to capture the experience of the nurses participating in this study. Process data were simultaneously collected and analyzed (Holloway, 2017). To ensure rigor, Creswell and Poth (2018) suggested that the researcher should at least use two methods for trustworthiness in a qualitative study. Rigor in the present study was obtained by researcher triangulation and member checking methods

(Miles et al., 2014). In researcher triangulation, different investigators compare the collected data or the conclusions reached by different analysts looking at the same body of data (Miles et al., 2014). In the current study, three research team members independently analyzed the data and then compared the results together to draw conclusions. The researchers then sent the brief summary of the finding to the participants for member checking. Six participants were randomly selected to check for accuracy and resonance with their experiences (Birt et al., 2016).

Ethical consideration. Ethics approval was obtained from the Faculty of Medicine Ethics Committee Universitas Hasanuddin (Ethic no: 895/UH4.6.4.5.31/PP36/2019). The participants also received an explanation of the research and provided informed consent prior to the interview. Codes were used in reporting data to ensure that no participant can be identified and maintain the confidentiality of their names (Holloway, 2017).

Results

Face-to-face interview was conducted with 15 nurses (13 females and 2 males) who provide home care services. All the participants were aged between 33 and 50 years and have been working for over 5 years in the Puskesmas. Table 1 shows the participants' characteristics. After analysis, the data were grouped into four themes each consisting of some sub-themes (Table 2).

Management of home care services. In this study, we aim to evaluate whether home care service were implemented in accordance with the guidelines issued by the Makassar City government. The Makassar City government has decided that all home care services provided are free to the community who live in the Puskesmas working area. These services are based on patients' call to the call center and are divided into three categories of services, including emergency home care service, home care visits for patients who are sick but cannot go to Puskesmas for treatment, and home care follow-up visit for patients who need follow-up care after being hospitalized. The healthcare teams generally consist of one doctor, one nurse, and one other healthcare staff. The government has regulated that the rewards for the team should come from the Makassar City revenue and expenditure budget. Data analysis showed that home care management was implemented in accordance with the government regulation. This first theme included three sub-themes, namely, *providing service based on patients' call, government policy of the type services,* and *specific reward for the home care team members.* The participants described that home care will be delivered on the basis of the patient's call. A patient who needs home care services could call the service center (112) as indicated in the home care guidelines from the Makassar City government. The participants are aware of the flow and mechanism of the services as mentioned by one of them:

> *".... mechanism of services is the patient should call center 112, then the call center will forward it (the information) to the team of home care and report that there are patients who need service, after that, we will visit the patient's home."* (P2)

Data analysis showed that the type of services offered were in line with the government policy. All the participants said that based on the government policy, the three types of services offered were emergency, home visit, and follow-up visit. Nevertheless, no limitation was set on home care services, and all types of diseases were handled. In this regard, a nurse who has worked for over 13 years stated that,

> *"Now the concept of home care in Makassar city is a home visit, emergency care, and follow-up, almost all cases are served in this home care program, and it is the government's policy to treat all diseases…"* (P1)

The reward for home care staff has already been set as per the government regulation. This issue is important and directly influences home care

Table 1. Demographic Characteristic

Participants Code	Age (year)	Gender	Educational background	Work Length (years)	Work station	Work Location
P1	38	M	Master's in public health	13	NCDs program	Antara
P2	35	F	Diploma in nursing	13	CH Nurse	Tamamaung
P3	42	F	Bachelor of nurse (Ners)	5	CH Nurse	Toddoppuli
P4	34	F	Diploma in nursing	9	ER Nurse	Batua
P5	48	F	Diploma in nursing	28	CH Nurse	Tamalanrea Jaya
P6	43	F	Diploma in nursing	15	CH Nurse	Sudiang Raya
P7	40	M	Bachelor in public health	10	Health promotion	Antang
P8	43	F	Bachelor of nurse (Ners)	15	CH Nurse	Antang Perumnas
P9	50	F	Bachelor of nurse (Ners)	25	ER Nurse	Tamalanrea
P10	50	F	Bachelor of nurse (Ners)	6	CH Nurse	Paccerakkang
P11	50	F	Bachelor of nurse (Ners)	12	CH Nurse	Makkasau
P12	37	F	Bachelor of nurse (Ners)	14	ER Nurse	Karuwisi
P13	50	F	Diploma in nursing	7	NCDs program	Jumpandang Baru
P14	33	F	Diploma in nursing	9	ER Nurse	Kaluku Bodoa
P15	50	F	Diploma in nursing	34	CH Nurse	Rappokalling

services. In this study, a specific reward was reported by the home care service team, that is, the reward based on the number of patients who receive services as mentioned,

"...home care as the excellent program of the government, there has been a reward set according to government policy..." (P3)

Roles of nurses in home care service. Home visit is one of the main tasks of community health nurses. The roles of nurses in regular home visits include providing care and health education. Nurses provide home visit according to the nursing care plan and during Puskesmas working hour. However, the home care service in this study differed from the regular home visit task of the nurses in Puskesmas. A special team has been created for this service that can be ava-

ilable for 24 hours via phone call. In this study, we explored the roles of the nurses in this team. This theme consisted of three sub-themes, namely, *nurses as the leader of team members, nursing care provider based on a patient problem,* and *documentation officer of the service delivered.* The findings indicated that nurses provide care according to the patients' problems. In the team, nurses would check vital signs and patient's condition and write resume reports. Some nurses provide short health education. One of the participants said:

"Well, nurses are doing everything, starting from the status, then checking vital signs, conducting assessments, providing education, making resume reports, then doctors will use the data assessment done by nurses to make diagnoses." (P6)

In conclusion, nurses play vital roles in the team. In some non-emergency cases when the doctor could not visit, the nurse would report the patient's condition via call and the doctor would give instructions as needed. As one of participants mentioned,

> "*sometimes the doctor is not coming with us, especially if it's not emergency cases, so I conducted all the assessment and report it to the doctor by phone, and he/she will give the instruction…*(P3)

The majority of the participants reported the lack of specific documentation of nursing care. They use a short form provided by Puskesmas explaining patient identity, sign, and symptom, and care implementation according to patient problems. The documentation is similar to a patient care resume and not a complete nursing care report. One of the participants stated that,

> "*… there is a short form for home care documentation, only resume reports included the patients' complaint, implementation, but there is no nursing diagnosis.*" (P10)

Barriers perceived. In this study, we asked about the obstacles faced by nurses in implementing home care services. Data analysis showed that some of the barriers to home care implementation based on nurses' experiences included long-hour services, lack of health staff in

Puskesmas, and community misperception of the provided services. One of the barriers to home care implementation was that the staff should be ready to provide 24-hour services.

> "… so *many obstacles, we need to go to patients' homes, and usually at midnight…. we cannot refuse it (home visit), yeah… so that's the obstacle.*" (P11)

The other barrier faced by nurses during home care was the lack of human resources. Almost all the participants said that,

> "*The problem is lack of human resources, home care staff also work in the emergency room at Puskesmas, if there are patients who call for a home visit and coincide with emergency patients in the ER, so usually we deliberate the priority to help.*" (P4)

In this study, an important barrier of home care was community misperception of home care services. The community appears to take advantage of this program because the Mayor of Makassar City emphasized that all patients' call should be answered and visited. However, the guideline has regulated that only certain cases can be visited. Among emergency cases, home visit is only for certain patients with chronic diseases and those who physically cannot go to healthcare facilities because of physical barriers. However, the guideline does not have a clear

Table 2. Main Themes and Sub-Themes

Main Themes	Sub-themes
Management of home care services	Providing services based on patient call
	The government policy of the type services
	The specific reward for home care team members
The roles of nurses in the home care services	Nurses as the leader of team member
	Nursing care provider based on a patient problem
	Documentation officer of the service delivered
Barriers perceived	Providing 24-hours services
	Lack of health care team number
	Community misperception of home care services
Benefits for the community	Increasing community health status
	Faster responses for health care services

regulation of what type of diseases are included in the home care service in Makassar City.

With regard to this barrier, participants stated that,

> "… because the patient considers that everything that can be served with home care because they do not want to queue at the puskesmas." (P10)

> "initially we were told that we only respond to a certain patient's disease and conditions, however, maybe there's miscommunication with the community, they think all condition can be served in the home care program." (P4)

With these obstacles, the nurses hoped for improvement in the socialization system of the home care services for the community. All the participants believed that the community must be given adequate information so they can have an accurate understanding and interpretation of the services, especially the criteria to qualify for home care services.

Benefits for community. Regardless of the barriers, the nurses believed that this program is good and helps people in the community to get healthcare services, especially those with specific conditions that impede them from visiting Puskesmas or hospitals. The nurses described their hopefulness related home care,

> "I think this is an excellent program to increase community health status." (P3)

Other participants shared a story from one of the patients who really appreciated the home care services, especially those who have physical restrictions preventing them to go outside their homes. In addition, this home care service program is equipped with a car that has telehealth facility and important equipment required for the services. One participant mentioned,

> "Regardless the current system in these ser-

> vices, I think this program has helped community to get health care services faster. If we want to send the patient to the hospital, we can send the data first by telehealth facilities in Dottorotta' car" (P4)

Discussion

This study showed that the home care program provides services according to the patient call. Its flow and mechanism have been described in the home care program guidelines from the Makassar City government (Dinas Kesehatan Kota Makassar, 2015). The participants are aware of the flow and mechanism of the services. According to the guidelines, the patient first needs to contact the call center, which will then screen and forward the call to the appointed Puskesmas of the local health center or the Makassar City home call center (Jaringan Inovasi Pelayanan Publik Sulsel, 2019). This study described the type of home care services stated in the government policy, including home care services for patients who cannot go to Puskesmas or hospitals (home care visit services), patients with emergency condition (emergency home care), and patients who need follow-up care posthospitalization such as wound care and physiotherapy for stroke patients (home care follow-up). Given that the home care program explored in this study is one of the innovation programs of the Makassar City Mayor in 2015, its regulation somewhat differed from the home care services in other regions of Indonesia and other countries, although the guidelines were developed based on the Indonesian government regulation (Ministry of Health Republic of Indonesia, 2014). The Indonesian Hospitals Association has formulated the concepts and mechanisms of home care services, including the collaboration between hospital and Puskesmas regarding patient selection (Widyastoeti, 2020). The doctor in the hospital will decide whether the patient needs home care service and will contact the home health care agency to perform follow-up care. This agency can be Puskesmas or any other private healthcare providers offering home health care services. This phenome-

non is one of the limitations of home care services in Indonesia. Owing to the lack of regulation, the implementation of the program can vary among the regions in Indonesia. For example, in one region in Yogyakarta, home care services are provided specifically for elderly in collaboration with healthcare providers and the community (Sumini et al., 2020). In developed countries, such as Australia, home care services focus on supportive care for patients after discharge from the hospital to maintain the health of disabled people and the elderly at home, prevent unnecessary admission, and meet the daily needs of these patients (Palesy et al., 2018). The varying implementations and focuses of home care services in different countries depend on their policy objective for home care (Palesy et al., 2018).

This study revealed that nurses have the main role in the team, and this result is supported by WHO study stating that nurses are the key member of the home care team (Genet et al., 2012). In addition, nurses perform their nursing role including assessment, implementation of nursing care according to patient problems, and documentation of nursing care using resume reports. The nurses involved in home care services team reported that their main task is to provide nursing care. They also have other tasks such as educating the patients and their family. Tóthová et al. (2014) explained that nurses use a holistic approach in providing nursing care including preventive care, health education, and health management. Nurses also provide the coordination and continuity of health care for individuals, families, and communities. However, in the current study, the nurses reported that their task is simple and short and not specific for nursing care.

Several barriers in the implementation of home care services were also perceived by the nurses. In this study, providing 24-hour services was one of the obstacles faced by the nurses. Another barrier was the lack of home care staff. Similar findings were obtained by another study, which explained an occasional delay in ho-

me care services due to this issue (Haswira et al., 2019). The lack of human resources in Puskesmas has become an issue, resulting in one nurse doing more than one task (Kadar et al., 2014). One study about innovation in health care argued that human resources are the most important element in implementing home care innovation policies (Putra et al., 2018). Another barrier faced in implementing home care was misinterpretation from the community about the service, particularly the patients' conditions included in the home care service program. One recent study confirmed this finding and recommended that the government must limit home care services to certain type of diseases to maximize the health care services provided (Haswira et al., 2019). Shahsavari et al. (2018) explained that society's understanding and interpretation of home nursing care could affect the utilization modes of home care. The present study also found that reward system was an important issue for the nurses. Given that the reward issue was not included in the barriers faced by the nurses, its impact on the nurses' work was not further explored. This condition can affect the performance of nurses: two studies explained that financial rewards have a positive impact on employees' performance (Putra et al., 2018; Shahsavari et al., 2018).

Despite the barriers perceived by the nurses, the participants agreed that this program gives benefits for the community, especially for individuals who have physical restraints to go to the hospital or Puskesmas to receive health care services. One of the goals of this home care service program is to make health care services accessible for all communities in Makassar City. Regardless the benefits, the participants hoped for the improved management of the home care program, including the development of administrative protocols and coverage of home care services. Good management is one of the key components in implementing effective public health program (Frieden, 2014), such as home care services. In addition, these home care services must be introduced to the community to gain their understanding and perception. Clear,

accurate, and timely communication among the health care community, decision-makers, and the public can prevent misunderstandings about the program (Frieden, 2014). One limitation is that this study did not include the experiences of the other members of the home care team. To maintain the generalization of the results, this study took the total sample of nurses as a team of home care at several public health centers in this city.

Conclusion

Four main themes emerged in this study, namely, management of home care services, roles of nurses in the home care service, perceived barriers, and community benefits. On the basis of nurses' experiences, the home care program delivered by health care professionals including the nurses at Puskesmas has been appropriately implemented in accordance with the guidelines. However, some barriers were perceived by the nurses. In relation to the benefits received by the community from this program, the government should provide additional technical guidelines, especially regarding the types of patients' condition that could receive these services.

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Nursing Documentation in Accredited Hospital

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Abstract

Nursing documentation is assessed in hospital accreditation because it includes the actions taken and the quality of provided care. Hospital accreditation undergoes three phases consist of preparation, implementation, and post-accreditation. In the post-accreditation phase, there is reduced compliance of workers and nurses. This study determines the quality of nursing documentation at the fully accredited hospital by using descriptive and quantitative research with a retrospective approach. A simple random sampling method is used to attain 292 documents. Data are collected using the Evaluation of Nursing Care Instrument by the Ministry of Health Republic of Indonesia. Results show that nursing documentation has poor quality with an average achievement of 80.81%. In terms of components, the implementation is the most complete whereas the intervention and nursing care parts are the least filled out. Most of the factual indicators have good quality but other records have poor completion or compliance. Observation indicators for documentation quality need review to determine the factors that influence the decline in quality. Hospitals need to review and improve nursing documentation to prevent quality deterioration in the post-accreditation survey. Using information technology for documentation can help nurses because the standardized language and linked systems facilitate documentation of the entire care process, and thus enhance its completeness.

Keywords: accreditation, hospital, nursing care, nursing documentation

Abstrak

Dokumentasi Asuhan Keperawatan pada Rumah Sakit Terakreditasi. *Dokumentasi asuhan keperawatan dinilai dalam akreditasi rumah sakit karena berisi seluruh tindakan keperawatan dan mencerminkan kualitas asuhan keperawatan yang diberikan. Akreditasi rumah sakit terdiri atas tiga fase yaitu fase persiapan, implementasi, dan pasca akreditasi. Pada tahap pasca akreditasi, biasanya terjadi penurunan kualitas pelayanan. Penelitian ini menelusuri kualitas dokumentasi asuhan keperawatan di Rumah Sakit X yang terakreditasi paripurna dengan menggunakan desain deskriptif kuantitatif melalui pendekatan retrospektif. Sebanyak 292 sampel dokumen diperoleh dengan teknik* simple random sampling. *Data dikumpulkan dengan menggunakan Instrumen Evaluasi Asuhan Keperawatan oleh Departemen Kesehatan Republik Indonesia. Hasil penelitian menunjukkan kualitas dokumentasi keperawatan tidak baik, dengan pencapaian rata-rata 80,81%. Komponen implementasi merupakan yang paling banyak terisi, sedangkan intervensi dan catatan asuhan keperawatan paling sedikit terisi. Sebagian besar indikator faktual memiliki kualitas yang baik, tetapi catatan lain memiliki kelengkapan yang buruk. Indikator observasi kualitas dokumentasi perlu dikaji ulang untuk mengetahui faktor-faktor yang memengaruhi penurunan kualitas dokumentasi keperawatan. Rumah sakit perlu meninjau dan meningkatkan dokumentasi keperawatan untuk mencegah penurunan kualitas dalam survei pasca akreditasi. Penggunaan teknologi informasi untuk dokumentasi dapat membantu perawat karena adanya standarisasi bahasa dan sistem yang saling terkait memfasilitasi dokumentasi seluruh proses perawatan, dan dengan demikian meningkatkan kelengkapannya.*

Kata Kunci*: akreditasi, asuhan keperawatan, dokumentasi keperawatan, rumah sakit*

Introduction

As a form of recognition, hospital accreditation can determine the quality of services. Hospital accreditations are carried out regularly at least every four years by independent institutions, both local and abroad, based on applicable standards (Peraturan Menteri Kesehatan Republik Indonesia Nomor 12 Tahun 2020 Tentang Akreditasi Rumah Sakit, 2020). *Standar Nasional*

Akreditasi Rumah Sakit (SNARS) 2018 is a hospital accreditation assessment guideline carried out by *Komisi Akreditasi Rumah Sakit* (KARS) and represents a new form of KARS 2012 (KARS, 2012; SNARS 1 Edition 2018). SNARS has an assessment element equipped with regulations, documents, observations, simulations, and interviews. One of these documents is the patients' medical files and nursing actions or care documentation that are important for assessment. SNARS is revised to SNARS edition 1.1, effective on January 2020 (SNARS 1.1 Edition 2019).

Nursing documentation comprises written and printed forms that must be completed accurately, comprehensively, and flexibly to obtain important data, legal aspect, track patient care outcomes, and quality control (Nilasari & Hariyati, 2021; Sulistyawati & Susmiati, 2020). Documentation of nursing care is a tool for communication and providing information on patient status, medical care, ways of nursing care, and raising standards (Subekti et al., 2012). Nursing documentation can also indicate responsibility in carrying out care duties, good quality service, and improving patient satisfaction (Nursalam, 2014). Nursing documentation describes a complete process starting from assessment, nursing diagnoses, interventions, implementation and evaluation of nursing care, and patient responses and outcomes (Kamil et al., 2018).

Documentation of nursing care is part of the medical record that is assessed during the accreditation. Professional care providers work in teams to provide integrated patient care. Each person performs an assessment based on gathered information, conducting analysis to create a care plan, and evaluating the actions taken as stated in the integrated patient progress record or *catatan perkembangan pasien terintegrasi* (CPPT) (SNARS 1.1 Edition 2019). Nursing documentation is a form of professionalism and communication tool to healthcare professionals on the patient's condition (Alkouri et al., 2016). It provides an accurate overview of clients, what happened and when it happened. The complete-

ness in documentation is legal aspect proof of a nursing activity (Hariyati et al., 2015). Documentation of nursing care that is incomplete, inaccurate, and irrelevant may cause difficulties in carrying out proof of actions that have been carried out (Muryani et al., 2019).

Muryani et al. (2019) assessed the quality of nursing documentation in the Central Kalimantan Hospital from 222 medical records and found that 55.9% of those records were in good quality and 44.1% in poor quality. The results of each nursing process showed not in accordance in assessment, the appropriate diagnosis was 59%, suitability of planning was 54%, proper implementation was 90%, and conformity evaluation was 64%. Another study at X Hospital in Jakarta, stated that most nursing documentation is still incomplete (71.6%) and the complete ones are few (28.4%) (Siswanto et al., 2013).

Empirical studies also evaluate whether hospitals maintain compliance with quality and safety during the accreditation by improving and maintaining the quality of health services prior to such assessment. A previous study found an increase in the completeness of patient records at RS Dr. Moewardi from 64.33% in the pre-accreditation phase to 94.75% in the accreditation phase (Widyaningrum, 2013). The accreditation consisted of the incision, pre-survey, post-accreditation deterioration, and the stagnation phases as a reduction in compliance in an Abu Dhabi hospital (Devkaran & O'Farrell, 2014). One element assessed in hospital accreditation is nursing care, which can be determined from the documentation. As such, this study aims to determine the quality of nursing care documentation in a fully accredited hospital based on previous data on its changes during the accreditation.

Methods

This study is carried out in the fully accredited X Hospital to observe inpatient nursing care documentation. A quantitative and descriptive design is applied with a retrospective approach.

The data comprises 1,075 documentation files in the medical record room between April 1 – June 30, 2016 (post-accreditation deterioration phase). The sample is determined using the calculation of Slovin's formula (Sugiyono, 2017) and simple random sampling with 292 results. The study uses the Instrument A Quality Evaluation Nursing Care by the Department of Health Republic of Indonesia, as modified and tested for validity by Aini (2018), which states that files with +1 results indicate validity. A univariate (descriptive) analysis is applied by describing and summarizing data that are presented in frequency distribution tables and percentages. The ethical test is fulfilled in the *Komisi Etik Penelitian Kesehatan (KEPK)* of the Faculty of Dentistry, University of Jember, with ethical certificate number 316/UN25.8/KEPK/DL/2019. The ethical principles include autonomy, confidentiality, justice, and expediency.

Results

The 292 files are interpreted to have good quality if the completeness is ≥ 85% and interpreted to have poor quality if the completeness is < 85%. This interpretation is according to the De-

partment of Health Republic of Indonesia standard in 2005 modified by Aini in 2018 (Aini, 2018).

Table 1 shows the results of the average quality of nursing documentation at the X Hospital. The overall result is 80.81% that is categorized as poor because less than the standard of 85% (Aini, 2018). The assessment of nursing documentation showed several files that do not follow applicable standards. Documentation of nursing care at X Hospital uses a predetermined format, assessment with checklist and filling out sheets, and a table of contents for diagnosis, intervention, implementation, and evaluation. However, several documentations are neither completely filled out nor following the existing format. The results lead to the assumption that nursing care documentation cannot be guaranteed to have good quality despite the full accreditation of hospitals or other health services.

Table 2 shows that among the 292 nursing care documentation files, 166 have good quality and 126 are poorly prepared. Siswanto et al (2013) found similar findings that the quality of 68 inpatient nursing care documentation (71.6%)

Table 1. The Average Quality of Nursing Care Documentation

Rated aspect	Number of questions	Total score	Average
Assessment	4	1030	88.18%
Diagnosis	3	618	70.55%
Intervention	6	1345	76.77%
Implementation	3	861	98.29%
Evaluation	4	931	79.71%
Nursing Care Notes	6	1250	71.35%

$$\text{Average} = \frac{\Sigma \text{average}}{\Sigma \text{rate aspect}} = 80.81\% \text{ (poor)}$$

Table 2. Quality of Documentation: Component "A"

Variable	Frequency (f)	Percentage (%)
Quality of documentation		
Good	126	43.2
Poor	166	56.8

Table 3. Documentation Component: Assessment, Diagnosis, Intervention, Implementation, Implementation, and Nursing Care Note

Variable	Frequency (f)	Percentage (%)
Assessment		
Good	167	57.2
Poor	125	42.8
Diagnosis		
Good	54	18.5
Poor	238	81.5
Intervention		
Good	6	2.1
Poor	286	97.9
Implementation		
Good	277	94.9
Poor	15	5.1
Evaluation		
Good	226	77.4
Poor	66	22.6
Nursing care record		
Good	6	2.1
Poor	286	97.9

Table 4. Quality of Documentation: Factual, Accurate, Complete, New, Organized

Variable	Frequency (f)	Percentage (%)
Factual		
Good	252	86.3
Poor	40	13.7
Accurate		
Good	6	2.1
Poor	286	97.9
Complete		
Good	42	14.4
Poor	250	85.6
New		
Well	6	2.1
Poor	286	97.9
Organized		
Well	216	74.0
Poor	76	26.0

have poor quality while 27 files (27%) are good.

Table 3 shows that the implementation of nursing care documentation has the highest good score (94.9%), meanwhile the intervention and nursing care records have the lowest good score (2.1%). This result is similar to the previous study that the suitability of planning was 54%, documentation. This result is different than the findings in Ariani's research (2018) that illus-

meanwhile, the proper implementation was 90% (Muryani et al., 2019).

Table 4 shows that the factuality of nursing documentation has the highest good score (86.3%). Meanwhile the accurateness and novelty have the lowest good score (2.1%). This condition shows that nurses do not write new things in the trated the documentation accuracy is 59.5% accurate.

Discussion

The assessment component has good quality, with 167 files (57.2%) scoring above the Department of Health Republic of Indonesia standard of 85% (Aini, 2018). The assessment component includes four questions (1 – 4), of which the most filled out is number 1 (recording the results of the study data following the guideline of each room) and the least completed is number 3 (data assessed from the patient arrival and departure). A previous study showed that nursing assessments were incomplete at 97.8% (Supratti & Ashriady, 2018). Documentation carried out by nurses follows the format or guideline for each examined room, are incomplete in terms of assessment from the patient arrival to departure, and especially the spiritual portion. Effective assessment results in decisions on immediate and ongoing action and planned care. Patient assessment is a continuous, dynamic process in all units ranging from emergency, in-patient, out-patient, and other service units. Assessment is important to identify patient needs before starting care and must be carried out by professional personnel (SNARS 1.1 Edition 2019). Assessments with poor or incomplete quality can affect the nursing diagnoses.

Poor nursing diagnoses are found in 54 files (81.5%). The diagnosis component includes three questions (5 – 7), of which the most filled out is number 7 (actual nursing/risk/potential nursing diagnoses have been formulated) and the least completed is number 6 (actual nursing diagnoses formulated based on Problem, Etiology, Symptom (PES), risk diagnoses based on Problem, Etiology (PE), and potential diagnoses based on Problem, Symptom (PS). The results at the *Rumah Sehat Terpadu Dompet Dhuafa* (RST DD) Hospital showed that the assessment, nursing diagnosis, and intervention are the most often unfilled. Compared with other components, diagnostics has the lowest average (Purwandari et al., 2013). Nursing diagnoses must be documented according to the problem statement, reflecting PE/PES and the actual and potential findings (Persatuan Perawat Nasional Indonesia (PPNI), 2016; Wilkinson, 2015). However, numerous nursing documentations are still not standardized, with diagnoses missing the etiology and symptoms. In addition, several nursing care diagnoses are only made once upon the arrival of the patient at the ward.

Documentation of nursing care interventions still shows numerous categories in 286 files (97.9%) with poor quality. The intervention component includes six questions (8–13), of which the most filled out is number 8 (action plan based on nursing diagnoses) and the least completed is number 10 (goal formula containing patient components, behavior changes, patient conditions, and/or SMART time criteria). The previous study revealed considerable poor nursing planning writing, as much as 98.75%, and those involving patients and families are only 63.75% (Widjayanti, 2012). Nursing intervention writing in the documentation must be prepared as follows: according to the diagnoses; arranged in order of priority problems; contain patient components, behavior changes, conditions, and time criteria based on SMART; refer to the results criteria with command sentences; detailed and clear; describe patient involvement and family; describe the cooperation with other health teams, education and independent nurse actions (Ackley et al., 2017).

Documentation of the implementation of nursing care shows good quality on 277 files (94.4%). Component implementation includes three questions (14–16), of which the most filled out is number 15 (response appropriate to the patient nursing action) and the least completed is number 16 (writing nursing actions using verbs). Results of the documented implementation show good quality. However, the writing still uses command words, which should be verbs, while others do not include the name and initial for each action taken. The documentation should meet applicable standards and be written accurately, using correct grammar, spelling, and complete sentences. Nurse who performed which action should also be clearly distinguished, and

thus nurses must also record their own actions (DeLaune & Ladner, 2011; Wang et al., 2011). Implementation is selected based on the needs and/or wishes of the patient in accordance with the patient's current condition. It requires the ability to analyze patient needs so that implementation does not just act as a routine. The primary team assignment system makes it easier for the nurse in charge to control the patients for whom she is responsible because the patients being managed are followed from the patient entering until the patient leaves (Suyanti et al., 2021).

Documentation of evaluation of nursing care are mainly of good quality on 226 files (77.4%). The evaluation component includes four questions (17–20), of which the most filled out are numbers 17 (evaluation refers to goals) and 18 (evaluation results are recorded and formulated using SOAP/SOAPIE) and the least completed is number 20 (revised actions based on evaluation results). The previous study showed a complete nursing evaluation of 63.4% (Supratti & Ashriady, 2018). The assessment shows no revisions of action, indicating that the nurses always perform tasks that have been planned at the beginning, in the absence of appropriate action revision of patient response. Documenting the nursing care evaluations using the SOAP format is easier for nurses. Evaluation is important for determining the next steps in inpatient care. SNARS 1.1 (2019) conveys that reassessment by professional care providers is essential for evaluating correct and effective care decisions. Reassessment is carried out and recorded in the information, analysis, and plan-based CPPT using the SOAP method (Ryandini, 2018).

Numerous nursing care records show poor quality on 286 files (97,7%). Notes in Nursing includes six questions (21–26), of which the most filled out is number 23 (recording of clearly written, concise, standardized terms, and right) and the least completed is number 26 (using zigzag accompanied by a name or initial on an empty page). The results are the same in the study of Hartati (2010) that the lowest compliance is for inclusion of the initial/clear name, response, and

time taken at only 63 files (21.21%) with good quality. The PPA assessment must be correctly recorded and documented while the CPPT must contain the name, initials, date, and time (SNARS, 1.1, 2019). Numerous nurses still do not write down the name and initials for each action taken and do not use the zigzag on the blank sheet. Thus, several aspects of recording nursing care are not carried out according to standards.

The results of the study carried out at Hospital X show that the quality of nursing care documentation have good quality with 252 files (86.3%). According to another study, documentation must be factual (Wang et al., 2011). Descriptive data are necessary and the objectives observed by nurses are to be recorded using clear terms, avoiding the use of "looks" or "seems". The documentation written by nurses in X Hospital are grouped according to bio-psy-cho-social-spiritual and based on facts and continuity. Suppose that the documentation does not pay attention to the quality of factual indicators, then discontinuity and mixing of data can occur, leading to difficult analysis of patient data.

Documentation of nursing care by nurses still has poor quality in terms of accuracy, with 286 files (97.9%). Previous study stated that 22 files (59.5%) of nursing care documentation at Dr. Rasidin Padang in 2012 are accurate (Ariani, 2018). However, various files are still not equipped with names and initials in each action. Similar to the previous study that many nursing care documentation in RST Dompet Duafa Bogor do not include the name and initials (Purwandari et al., 2013). This omission can result in unusable documents for evidence in the case of lawsuits, which require the name, initials, or signature in the documentation. According to another study, accurate documentation uses correct grammar and spelling, complete sentences, and signature (Wang et al., 2011). Signature indicates that nurses are responsible for the posted information. This suggests that nurses' comprehension of writing good documentation is necessary.

Documentation of nursing care has poor quality overall on 250 files (85.6%). Records are incomplete given that only the patient's arrival at the inpatient ward is included, and the diagnosis only contains the problem and not equipped with PE or PES. Moreover, interventions have no goals and criteria for results. Previous researchers mentioned that completeness documentation in RST Dompet Duafa Bogor remains low given the incomplete common assessment, diagnosis, and interventions (Purwandari et al., 2013). Other documentation reflects the routine and not the action plan.

Documentation completeness is necessary to ensure the quality of the provided nursing care, and its continuity that affects patient safety (Bjerkan et al., 2021). Nursing comprises activities that organize, manage, and direct various sources, including clients and nurses, effectively and efficiently to provide quality care. Nursing care can be used to measure the quality as outlined in the documentation, providing an accurate overview of patients, what happened, and when it happened (College of Registered Nurses of British Columbia, 2012). Documentation is a form of nursing professionalism and communication tool for healthcare professionals regarding the patient's condition.

The quality of nursing care documentation in terms of novelty remains poor in 286 files (97.9%). Documentation is considered 'new' if the obtained data is immediately recorded. Several aspects need to be recorded timely, one of which is the treatment for a sudden change in patient status (Muhlisin, 2011). The unwritten portions are immediately apparent from the brief and incomplete documentation. In addition, numerous intervention writings still exclude the objectives and outcome criteria and evaluations that are not accompanied by revised actions. This omission can result in the documentation not meeting the novelty criteria because of the lack of updates according to patient needs.

The nursing documentation shows good quality in terms of organization. Files that have good quality are 216 (74.0%). Documentation of organized nursing care is structured or arranged in one unit. The recorded information must use logical data. In line with the previous author, organized documentation describes all the patient needs, assessment, and corresponding interventions (Muhlisin, 2011). Documentation in the proper format allows for easier updating by nurses (Bunting & de Klerk, 2022; De Groot et al., 2022). Moreover, collaborative actions with other health teams must be included as implementation of patient-centered care, and in order to improve patients' satisfaction (Purwandari et al., 2019). Thus, the documentation follows organization indicators and facilitate nursing care according to the necessary steps. Guidance and renewal of nursing care documentation are required, and the use of standardized language also needs to be applied using information technology (IT) (Siokal, 2021). The role of a leader is very important in the completeness of nursing documentation. The previous study also concluded that there is a relationship between the supervision frequencies to the quality of nursing documentation (Siswanto et al., 2013). Supervision is the most dominant variable related to nursing care documentation so that the suggestion for the hospital is to include the head nurse for supervising and implementing nurses in seminars or training on documentation of care nursing services. This suggestion aims to improve the quality of nursing services in accordance with standards. Also, nursing management can make an audit of nursing care documentation to evaluate the completeness of nursing care documentation in accordance with standards (Togubu et al., 2019).

Conclusion

This study concludes that the nursing care documentation at the fully accredited X Hospital has overall poor quality. Many components do not meet or observe the indicators of quality of nursing care documentation, which, when deviating from standards and rules, cannot be used as strong evidence of legal responsibility and accountability. The documentation still needs

improvement, and the hospital needs to review and improve this aspect by providing training, guidance, and motivation to the staff to prevent deterioration during the stagnation phase after hospital accreditation. The limitation of this study is that only the completeness of the document is considered, but neglects the relationship between the components of nursing care. Optimizing the role of leaders in supervising and motivating nurses is needed. Using information technology for documentation assists nurses because the standardized language and linked systems facilitate the updating of the whole care process, and thereby the completion of documentation.

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Heart Failure in Lebanon: A Review of the Literature

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Abstract

This research aimed to provide a comprehensive overview of the current literature on heart failure (HF) management in Lebanon and identify the implications for policy, practice, education, and research. The design of this research was a systematic review following preferred reporting items for systematic reviews and meta-analyses (PRISMA) guidelines. Databases were searched using the search terms "heart failure" and "Lebanon" and associated MeSH terms. The abstracts of the selected articles were examined independently by two researchers; the sample characteristics, HF indices, and results of the included studies were extracted. Key findings and trends were synthesized. Eleven papers were reviewed with 2,774 participants (mean age = 57.98, SD = 13.09 years, and the majority [n = 1,494, 53.85%] were male). Over one-third reported having coronary artery disease, and half had hypertension. The mean ejection fraction was 47.28% (SD = 10.44), and the mean length of hospital stay was 7.97 days (SD = 10.28). Self-care was a common theme showing varying but low scores, especially in the self-management subscale. The findings of this study outline the unique characteristics of the population with HF in a Middle Eastern country. These characteristics should be considered when planning interventions in countries facing geopolitical instability in the context of population aging and the rise of noncommunicable diseases.

Keywords: heart failure, Lebanon, literacy, MENA region, nursing, self-care

Abstrak

***Tinjauan Pustaka tentang Gagal Jantung di* Lebanon**. *Penelitian ini bertujuan untuk menyajikan rangkuman kajian pustaka terkait manajemen gagal jantung di* Lebanon *dan mengidentifikasi implikasinya terhadap kebijakan, praktik, pendidikan, dan riset di bidang tersebut. Metode tinjauan sistematis digunakan pada penelitian ini dengan mengacu pada* preferred reporting items for systematic reviews and meta-analyses (PRISMA). *Beberapa istilah, seperti "gagal jantung" dan "*Lebanon*" serta istilah dalam* medical subject headings *(MeHS) lainnya digunakan dalam pencarian pada basis data. Kumpulan abstrak terpilih ditinjau dan diteliti dalam hal: karakteristik sampelnya, indeks gagal jantung, dan hasil penelitiannya. Poin utama temuan dan tren dipadukan. Pada sebelas manuskrip yang telah ditelaah, terdapat 2.774 partisipan (rerata umur = 57,98, SD = 13,09 tahun, dan mayoritas partisipan adalah laki-laki (n = 1.494, 53,85%). Lebih dari sepertiganya mengalami jantung coroner dan setengahnya mengalami hipertensi. Nilai mean untuk pecahan ejeksi sebesar 47,28% (SD = 10,44), dan nilai* mean *untuk lama rawat inap yang dijalani ialah 7,97 hari (SD = 10,28). Perawa-tan mandiri adalah tema yang paling sering muncul tetapi dengan variasi skor rendah, khususnya pada subskala ma-najemen mandiri. Temuan pada penelitian ini menggarisbawahi karakteristik unik pada populasi gagal jantung di negara-negara Timur Tengah. Karakteristik ini diharapkan dapat menjadi acuan dalam merencanakan intervensi pada negara yang menghadapi ketidakstabilan geopolitik, khususnya dalam konteks populasi lansia dan meningkatnya kasus penyakit tidak menular.*

Kata Kunci: *gagal jantung, keperawatan,* Lebanon*, literasi,* MENA region*, perawatan mandiri*

Introduction

Heart failure (HF) is a global pandemic affecting at least 26 million people worldwide (Savarese & Lund, 2017). This prevalence is expected to rise globally in the next 20 years regardless of trends in coronary disease morbidity and mortality due to improved survival after cardi-

ovascular events, rising HF incidence, and/or an increasingly aging population (Heidenreich et al., 2013). Consequently, HF is a global clinical and public health problem associated with substantial mortality and morbidity and subsequent increased healthcare expenditure. This phenomenon is an increasing concern in low- and middle-income countries, particularly when models of care do not follow a traditional Western paradigm (Koirala et al., 2019). Epidemiological studies evaluating the prevalence of HF and associated mortality in the Middle East and North Africa (MENA) region, including Lebanon, are lacking. A range of factors, including climate change, civil unrest, and increased refugee populations, have placed additional pressures on an already stretched healthcare system (Anholt, 2020).

Lebanon, previously known as the pearl of the Middle East, is a small country located on the eastern shore of the Mediterranean Sea. Despite its size, Lebanon is home to more than 5.8 million people due to the high growth rate and the soaring migration rates to the country (United States Central Intelligence Agency, 2014). The continuous geopolitical conflicts have put the country in a state of political, social, and financial instability, causing burden on all sectors, including the health sector (World Health Organization-Regional Office for the Eastern Mediterranean, 2010). The burden on the healthcare sector is manifested through the high annual expenditure on the Lebanese Ministry of Public Health (MoPH) for more than 40% of the Lebanese population (United States Central Intelligence Agency, 2014).

Lebanon remains in a state of epidemiological transition where communicable diseases remain endemic and is paired with an increase in the prevalence of noncommunicable and degenerative diseases (Bassatne et al., 2020). Noncommunicable diseases are a rising healthcare problem in Lebanon and are projected to increase markedly over the coming few decades. This situation is exacerbated by geopolitical instability, economic disruption, and, more recently,

the impact of the COVID-19 pandemic (Deek, 2020). In view of the current changes in Lebanon to be comparable to those of the surrounding countries, understanding the current state on HF will enable researchers in Lebanon and the MENA region to set priorities for research and health systems planning. Therefore, this review aimed to provide a comprehensive overview of the current literature on HF from Lebanon.

Methods

This research used the design of a literature search that was conducted for studies on HF in Lebanon, following the PRISMA statement criteria (Sarkis-Onofre et al., 2021). The search was conducted independently by two researchers (HD and AM), and any conflict was resolved by a third researcher (PMD). A bibliographic search of English language publications indexed in Medline, CINAHL, Academic Search Complete, and Scopus computerized databases was conducted. The search strategy adopted for this review with all the MeSH terms is presented in Table 1. The search was also complemented by a search via Google Scholar for further references that were identified through tracking citations from key articles. Further search was conducted for published works in the following websites: MoPH, Google Search, World Health Organization, Central Intelligence Agency of Lebanon, and Statista, in addition to the gray literature websites: Agency for Healthcare Research and Quality, Gray Literature Report, and Open Gray using the search term "HF in Lebanon." The search was completed in August 2020. The following MeSH terms were used: HF, cardiac failure, CHF, chronic HF, congestive HF, or cardiomyopathy, and Lebanon or Lebanese. The terms were used in all possible combinations with mappings to headings wherever possible. Limits were set for English language and availability of full text. Sociodemographic, medical, and clinical data of the study participants were retrieved using a data extraction tool. Descriptive statistics were undertaken. Standard deviations were calculated for unavailable data using the following formula: SD

= range/6 (Hozo et al., 2005).

All abstracts were reviewed independently, and papers were included for full review if the authors reported data on the incidence, treatment modalities, readmission rates, interventions, and cost related to HF. Studies that reported findings on cardiovascular diseases without referring to HF in specific were excluded. The PRISMA flowchart of the search strategy is shown in Figure 1.

The abstracts of the selected articles were examined independently by two researchers. The study characteristics (author, year, study title, study design, setting, sample size, and study outcome), sample characteristics (age, gender, level of education, employment, social status, and comorbidities), HF indices (length of stay, New York Heart Association (NYHA) functional class, medications, cause of HF, and ejection fraction), and results of the included studies were extracted. Next, data were assembled from the sources and arranged to identify themes and their relationships. The final sample of 11 articles for this review comprised cross-sectional, correlational, interventional, and descriptive quantitative designs.

Results

Description of Studies. All the eleven studies on HF in Lebanon reported sociodemographic characteristics of the study participants; eight studies reported select clinical and medical characteristics. Excluded papers reported the development of a culturally appropriate intervention in the Lebanese context (Deek & Noureddine et al., 2016), a suggestion for an HF toolbox (Kabbani et al., 2019), and an article that discussed electrocardiogram determinants (Khalil et al., 2016) without details on HF. Matta et al.'s (2016) study reported a single case with limited findings and was thus excluded.

All the studies were conducted in the capital city of Beirut, with the exception of one study conducted in the North Lebanese (Kossaify &

Nicolas, 2013). Nine of the eleven studies were descriptive, four used a retrospective chart review design (Abou Dagher et al., 2018; Deek & Skouri et al., 2016; Mansour et al., 2020; Moukarbel & Arnaout, 2003), and two studies used a randomized controlled intervention design (Deek et al., 2017; Sadek et al., 2020). Two studies measured self-care in patients living with HF (Deek et al., 2017; Massouh et al., 2020). Two studies addressed quality of life using the Minnesota Living with Heart Failure (MLW HF) questionnaire (Sadek et al., 2020; Zahwe et al., 2020). The same study by Sadek et al. (2020) linked inspiratory muscle function to exercise capacity and quality of life. Three studies addressed diastolic dysfunction. Mansour et al. (2020) studied the link between diastolic dysfunction and coronary artery calcium scoring, whereas another study addressed the effect of physical inactivity on diastolic dysfunction (Matta et al., 2016). One study adressed the effect of body mass index and waist circumference on diastolic dysfunction (Kossaify & Nicolas, 2013). One study reported the mortality rates of acute HF complicated by sepsis (Abou Dagher et al., 2018). Tatari et al. (2015) studied the economic impact of HF care and its associated costs in Lebanon. Along the same lines, two other studies addressed readmission rates with HF (Deek et al., 2016, 2017). Finally, one study looked at peripartum cardiomyopathy (Moukarbel & Arnaout, 2003).

The findings of the 11 included studies, along with their quality assessment, are reported in Table 2. The Joanna Briggs Critical Appraisal Tool was used for quality assessment of the included studies (Munn et al., 2020). The review included 2,774 individuals with HF in inpatient and outpatient settings. The mean age of the sample was 57.98 (SD = 13.09) years. The majority were males (n = 1,494; 53.8%). Six studies reported the smoking status of their participants (n = 1,015), with a mean percentage of 46.8. Only three studies reported the level of education of their participants. A minimum of high school education was present in 247 participants (49.66%), with a variance among the

Table 1. Search Strategy with Mesh Terms Conducted in CINAHL

S1	(MH "Heart Failure+") M
S2	TI (((((ventricular or atrial or systolic* or diastolic* or congestive or chronic or myocardial or cardiac or heart or ((high or low) N1 output*) or ((right or left) N1 sided)) N1 fail*) or CHF or ((cardiac or heart) N1 decompensation) or ((cardiac or myocardial or heart or systolic or diastolic or atrial or ventricular) N1 d#sfunction*) or ((cardiac or myocardial) N1 (insufficien* or in-sufficien*)) or ((heart or cardiac) N1 edema) or HFpEF or HFrEF *)) OR AB (((((ventricular or atrial or systolic* or diastolic* or congestive or chronic or myocardial or cardiac or heart or ((high or low) N1 output*) or ((right or left) N1 sided)) N1 fail*) or CHF or ((cardiac or heart) N1 decompensation) or ((cardiac or myocardial or heart or systolic or diastolic or atria# or ventricular) N1 d#sfunction*) or ((cardiac or myocardial) N1 (insufficien* or in-sufficien*)) or ((heart or cardiac) N1 edema) or HFpEF or HFrEF *)) OR MW (((((ventricular or atrial or systolic* or diastolic* or congestive or chronic or myocardial or cardiac or heart or ((high or low) N1 output*) or ((right or left) N1 sided)) N1 fail*) or CHF or ((cardiac or heart) N1 decompensation) or ((cardiac or myocardial or heart or systolic or diastolic or atria# or ventricular) N1 d#sfunction*) or ((cardiac or myocardial) N1 (insufficien* or in-sufficien*)) or ((heart or cardiac) N1 edema) or HFpEF or HFrEF*))
S3	TI ((((renocardia* or reno-cardia* or cardiorenal or cardio-renal) N1 (syndrome# or insufficien* or in-sufficien* or d#sfunction*))) OR AB (((renocardia* or reno-cardia* or cardiorenal or cardio-renal) N1 (syndrome# or insufficien* or in-sufficien* or d#sfunction*))) OR MW (((renocardia* or reno-cardia* or cardiorenal or cardio-renal) N1 (syndrome# or insufficien* or in-sufficien* or d#sfunction*)))
S4	TI (((parox#sm#l N2 (dyspnea* or dyspnae*)) or (asmtha* N2 cardia*)).mp.) OR AB (((parox#sm#l N2 (dyspnea* or dyspnae*)) or (asmtha* N2 cardia*))) OR MW (((parox#sm#l N2 (dyspnea* or dyspnae*)) or (asmtha* N2 cardia*)))
S5	TI cardia* N1 edema* OR AB cardia* N1 edema* OR MW cardia* N1 edema*
S6	TI (((((s#stolic or s#s-tolic or diastolic or dia-stolic or ventric*) N2 (fail* or d#sfunction* or insufficien* or in-sufficien*)) or HFpEF or HFrEF)) OR AB (((((s#stolic or s#s-tolic or diastolic or dia-stolic or or ventric*) N2 (fail* or d#sfunction* or insufficien* or in-sufficien*)) or HFpEF or HFrEF)) OR MW (((((s#stolic or s#s-tolic or diastolic or dia-stolic or ventric*) N2 (fail* or d#sfunction* or insufficien* or in-sufficien*)) or HFpEF or HFrEF))
S7	TI (((((primary or secondary or myocardia*) N1 (cardiomyopath* or disease*)) or (myocardiomyopath* or myo-cardiomyopath*))) OR AB (((((primary or secondary or myocardia*) N1 (cardiomyopath* or disease*)) or (myocardiomyopath* or myo-cardiomyopath*))) OR MW (((((primary or secondary or myocardia*) N1 (cardiomyopath* or disease*)) or (myocardiomyopath* or myo-cardiomyopath*)))
S8	TI ((cardiomyopath* N4 (familial or alcoholic or congestive or dilate* or idiopath* or idio-path* or 1a# or recessive or autosom* or auto-som* or cmd1a or lmna or defect1 or defect-1 or restrict*))) OR AB ((cardiomyopath* N4 (familial or alcoholic or congestive or dilate* or idiopath* or idio-path* or 1a# or recessive or autosom* or auto-som* or cmd1a or lmna or defect1 or defect-1 or restrict*))) OR MW ((cardiomyopath* N4 (familial or alcoholic or congestive or dilate* or idiopath* or idio-path* or 1a# or recessive or autosom* or auto-som* or cmd1a or lmna or defect1 or defect-1 or restrict*)))
S9	(MH "Cardiomyopathy, Dilated+") OR (MH "Cardiomyopathy, Alcoholic+") OR (MH "Cardiomyopathy, Hypertrophic+")
S10	TI ((Cardiomegal* or ((enlarge* or en-large* or hyper-troph* or hypertrophy*) N1 heart))) OR AB ((Cardiomegal* or ((enlarge* or en-large* or hyper-troph* or hypertrophy*) N1 heart))) OR MW ((Cardiomegal* or ((enlarge* or en-large* or hyper-troph* or hypertrophy*) N1 heart)))
S11	TI ((((cardiomyopath* or obstruct* or heredit* or idiopath* or idio-path* or ventric* or asymetr* or a-symmetr* or familial or subaort* or sub-aort*) N4 (hypertroph* or hyper-troph* or gene*))) OR AB (((cardiomyopath* or obstruct* or heredit* or idiopath* or idio-path* or ventric* or asymetr* or a-symmetr* or familial or subaort* or sub-aort*) N4 (hypertroph* or hyper-troph* or gene*))) OR MW (((cardiomyopath* or obstruct* or heredit* or idiopath* or idio-path* or ventric* or asymetr* or a-symmetr* or familial or subaort* or sub-aort*) N4 (hypertroph* or hyper-troph* or gene*)))
S12	(MH "Heart Hypertrophy+")
S13	TI (((left or right) N1 (hypertroph* or hyper-troph*))) OR AB (((left or right) N1 (hypertroph* or hyper-troph*))) OR MW (((left or right) N1 (hypertroph* or hyper-troph*)))
S14	TI (((athlete* N1 syndrome*) or ((exercise-induce* or exerciseinduce*) N1 cardiomegal*))) OR AB (((athlete* N1 syndrome*) or ((exercise-induce* or exerciseinduce*) N1 cardiomegal*))) OR MW (((athlete* N1 syndrome*) or ((exercise-induce* or exerciseinduce*) N1 cardiomegal*)))

Table 1. Search Strategy with Mesh Terms Conducted in CINAHL (cont)

S15	TI ((Low N2 (cardia* or output* or out-put* or syndrome*))) OR AB ((Low N2 (cardia* or output* or out-put* or syndrome*))) OR MW ((Low N2 (cardia* or output* or out-put* or syndrome*)))
S16	(MH "Cardiac Output+") OR (MH "Cardiac Output, Decreased") OR (MH "Decreased Cardiac Output (NANDA)")
S17	(MH "Ventricular Dysfunction+") OR (MH "Ventricular Dysfunction, Right") OR (MH "Ventricular Dysfunction, Left+")
S18	(MH "Takotsubo Cardiomyopathy+")
S19	TI (((apical or a-pical or broke* or tako-tsubo or takotsubo or stress) N2 (syndrome* or cardiomyopath*))) OR AB (((apical or a-pical or broke* or tako-tsubo or takotsubo or stress) N2 (syndrome* or cardiomyopath*))) OR MW (((apical or a-pical or broke* or tako-tsubo or takotsubo or stress) N2 (syndrome* or cardiomyopath*)))
S20	(MH "Myocardial Diseases+")
S21	TI myocardia* N1 disease* OR AB myocardia* N1 disease* OR MW myocardia* N1 disease*
S22	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21
S23	(MH "Lebanon+")
S24	TI ((leban* or liban* or lubnan* or lobnan* or byblos or tyre or sidon or tripoli or beyrouth or beirut or mount-lebanon or b#qaa or b#kaa or b'qaa or b#'qaa or jnoub or janoub or daheya or akkar or batroun or j#b#il or j#b#yl or sho#eif#t or cho#eif#t or nabatey#eh or nabatey#a# or hasbay#eh or hasbay#a#).) OR AB ((leban* or liban* or lubnan* or lobnan* or byblos or tyre or sidon or tripoli or beyrouth or beirut or mount-lebanon or b#qaa or b#kaa or b'qaa or b#'qaa or jnoub or janoub or daheya or akkar or batroun or j#b#il or j#b#yl or sho#eif#t or cho#eif#t or nabatey#eh or nabatey#a# or hasbay#eh or hasbay#a#).) OR MW ((leban* or liban* or lubnan* or lobnan* or byblos or tyre or sidon or tripoli or beyrouth or beirut or mount-lebanon or b#qaa or b#kaa or b'qaa or b#'qaa or jnoub or janoub or daheya or akkar or batroun or j#b#il or j#b#yl or sho#eif#t or cho#eif#t or nabatey#eh or nabatey#a# or hasbay#eh or hasbay#a#).
S25	S22 AND (S23 OR S24)

Legend: CINAHL (Cumulated Index to Nursing and Allied Health Literature)

three studies (65%, 57%, versus 25%). Only two studies reported employment status of 18% (Deek et al., 2017) and 35% (Mansour et al., 2020). In addition to these same studies, Moukarbel and Arnaout (2003) reported the participants' marital status as married with 63%, 78%, and 100%. Atrial fibrillation, reported in five studies, was present in 220 participants (22.49%). A total of 734 participants (33.02%) had coronary artery disease, 1,169 participants (50.32%) had hypertension, 499 (27.47%) had dyslipidemia, 535 (24.07%) had diabetes, 90 (14.59%) had chronic obstructive pulmonary disease, and 251 (11.81%) had renal disease. EF was reported in six studies, with a mean of 47.28% (SD = 10.44). Five studies reported the length of hospital stay with a combined mean of 10.28 days (SD = 7.97). Table 3 includes sample characteristics and associated comorbidities.

Synthesis of Results

Sociodemographic Burden. The differences in the samples were evident with the varying sociodemographic characteristics in different studies. Age ranged between 33.7 and 73 years. This wide range is due to the youngest sample of women with peripartum cardiomyopathy. In 7 out of 11 studies, most of the sample were males. Cardiac comorbidities were prevalent with the varying rates of atrial fibrillation, coronary artery disease, and hypertension. The mean EF was middle ranged given that three of the studies presenting their participants' EF ranged around 30%, whereas the other three were over 60%.

Self-care and Symptom Management. Promoting self-care and engagement in symptom management is a key recommendation of best practice

Table 2. Detailed Summary of the Included Studies

Authors	Design	Sample Size	Primary Outcomes	Results	Quality Assessment*
Massouh et al. (2020)	Cross-sectional correlational design	Patients with HF[1]: 100	Self-care behaviors and their determinants	Self-care was suboptimal in Lebanese patients with HF. Common self-care maintenance behaviors performed by Lebanese patients with HF included using a system to help remember medicines, keeping doctor or nurse appointments, checking for ankle swelling, and eating a low salt diet. Self-care behaviors predominantly low in this population were weighing oneself and exercising for 30 minutes. Higher HF specific knowledge, higher self-care confidence, and lower NYHA[2] Class II predicted better self-care maintenance. HF specific knowledge score, higher self-care maintenance, no recent hospitalization, and being unemployed predicted better self-care confidence. Self-care management was predicted by self-care confidence alone.	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Yes Q6: Yes Q7: Yes Q8: Yes
Zahwe et al. (2020)	Psychometric evaluation of Arabic version of MLHFQ[3]	Patients with HF: 210	Psychometric properties of Arabic version of MLWHF questionnaire	The Arabic version of MLHF questionnaire is valid and reliable and can be used in Arabic-speaking Lebanese population with HF. The confirmatory factor analysis yielded three factors: physical, emotional, and social. Three items (4, 8, and 15) had low loadings. The overall Cronbach's alpha coefficient was 0.92. Higher scores on the MLHFQ questionnaire (lower quality of life) were associated with depression, evaluated using the PHQ-9[4], higher NYHA class, and HF-hospitalization in the past 6 months.	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Unclear Q6: Unclear Q7: Yes Q8: Yes
Sadek et al. (2020)	Randomized controlled trial	Patients with HF: 40	Inspiratory muscle function, exercise capacity, and quality of life (measured by MLWHF)	The combined intervention of HI-AIT[5] and IMT[6] showed significant improvement over the single intervention (HI-AIT or IMT) in terms of maximal inspiratory training (62%, 24%, 25%), exercise time (62%, 29%, 12%), the 6-minute walk test (23%, 15%, 18%), and the MLWHF questionnaire (56%, 47%, 36%).	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Yes Q6: Yes Q7: Yes Q8: Yes

Table 2. Detailed Summary of the Included Studies (cont)

Authors	Design	Sample Size	Primary Outcomes	Results	Quality Assessment*
Mansour et al. (2020)	Retrospective database review	In-patients with HF: 191	DD[7] and coronary artery calcium score	Patients with higher CAC[8] score were older, had more comorbidities, lower e′, and were more likely to have DD. DD was associated with increased OR[9] for subclinical CAC; OR = 3.66, 95% CI[10] = 1.54–8.72, p = 0.03. In the multivariate analysis, DD alone, age > 65 years, or both were associated with almost threefold increase of subclinical atherosclerosis. Compared with patients' age < 65 years and normal diastolic function, those age > 65 years or DD had OR = 3.49, 95% CI = 1.45–8.35, and p = 0.005 for subclinical coronary atherosclerosis (CAC > 0), whereas those age > 65 and DD had OR = 9.30, 95% CI = 2.00–42, and p = 0.004.	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Yes Q6: Unclear Q7: Yes Q8: Yes
Abou Dagher et al. (2018)	Single-center; retrospective; cohort design	Patients with sepsis: 174 Patients with HF: 87	In-hospital mortality of patients with HF and sepsis compared with patients without HF.	Patients with HF and sepsis were at a higher risk of in-hospital mortality than patients who are not diagnosed with HF. Mortality: OR = 2.45, 95% CI = 1.22–2.48, p = 0.01 Prevalence of severe sepsis or septic shock was higher in patients with HF compared with those without HF. Diagnosis of sepsis or septic shock: OR = 4.45, 95% CI = 2.218.98, p < 0.0001	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Yes Q6: Yes Q7: Yes Q8: Yes
Deek et al. (2017)	Multicenter; randomized control trial	Patients with HF: 259 Control: 130 Intervention: 126	All caused readmission	A single educational intervention showed improved outcomes. The intervention lowered readmission rates [OR = 0.40, 95% CI = 0.17–0.91, p = 0.02], showed fewer major vascular events [OR = 0.47, 95% CI = 0.40–0.54, p = 0.01], enhanced self-care maintenance [OR = −8.93, 95% CI = 13.37–4.49, p < 0.0001], and confidence [OR = −8.95, 95% CI = −14.6 to −13.32, p < 0.0001], and showed less healthcare utilization [OR = 0.39, 95% CI = 0.18–0.83, p = 0.01] when compared with no intervention. Education did not improve the quality of life after 30 days.	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Yes Q6: Yes Q7: Yes Q8: Yes

Table 2. Detailed Summary of the Included Studies (cont)

Authors	Design	Sample Size	Primary Outcomes	Results	Quality Assessment*
Deek et al. (2016)	Retrospective; descriptive design	Patients with HF: 187	Readmission rates at 30, 60, and 90 days	72 patients with HF were readmitted. Readmission rates were 15%, 22.2%, and 27.8% at 30, 60, and 90 days respectively. DM[11] [OR = 2.681, 95% CI = 1.176–6.110, p = 0.09], CAD[12] [OR = 3.3, 95% CI = 1.462–7.449, p = 0.004], elevated gamma GT7 [OR = 2.675, 95% CI = 1.016–7.068, p = 0.046], and prolonged LOS[13] [OR = 7.842, 95% CI = 1.819–33.809, p = 0.006] were significant predictors of readmission.	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Yes Q6: Unclear Q7: Yes Q8: Yes
Matta et al. (2016)	Single-center prospective cohort design	1,356 patients presenting for echocardiography	Effect of physical inactivity on DD	Physically inactive patients who had a higher than median LVMI[14] had higher risk of having DD [OR = 2.82, 95% CI = 1.58–5.05, p < 0.001]. Age [OR = 1.13, 95% CI = 1.11–1.14, p < 0.001], higher BMI[15] [OR = 1.04, 95% CI = 1.004–1.07, p = 0.029] and SBP[16] [OR = 1.011, 95% CI = 1.001–1.02, p = 0.033], DM [OR = 1.85, 95% CI = 1.14–2.98, p = 0.012], use of anticoagulants [OR = 3.55, 95% CI = 1.26–10.0, p = 0.017], and a smaller LVEDD[17] [OR = 0.91, 95% CI = 0.85–0.97, p = 0.03] were all associated with an increased odds of having DD.	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Yes Q6: Unclear Q7: Yes Q8: Yes
Tatari et al. (2015)	Cross-sectional study	All healthcare providers reported costs on HF hospitalization in 600 outpatient visits.	Annual cost of HF care.	A total of 72,000 individuals suffered from HF. The actual average cost of HF care in Lebanon for an average of 11 days of hospitalization is $3,769. The annual total cost of HF care was estimated at $103,673,535 with $38,081,535 in direct cost for HF hospitalizations. The cost of outpatient HF care was estimated at $65,592,000 with $911 spent for each patient per year. The true cost was estimated at $104 million dollars.	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Yes Q6: Unclear Q7: Yes Q8: Yes
Kossaify and Nicolas (2013)	Single-center observational design	132 outpatients presenting for echocardiography	Effects of BMI and WC[18] on LVEDD	Overweight and obese participants had higher diastolic dysfunction (abnormal BMI, p = 0.037; abnormal WC, p = 0.035) compared with participants with a normal BMI and WC. BMI [OR = 2.75, 95% CI = 1.34–5.67, p = 0.006] and age [OR = 1.08, 95% CI = 1.04–1.12, p < 0.0001] appeared to be significant independent risk factors for LVEDD.	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Yes Q6: Yes Q7: Yes Q8: Yes

Table 2. Detailed Summary of the Included Studies (cont)

Authors	Design	Sample Size	Primary Outcomes	Results	Quality Assessment*
Moukarbel and Arnaout (2003)	Single-center cohort design	10 patients with LVD[19]	Acute and long-term outcomes of PPCM[20]	Approximately 60% of the patients in this sample had severe LVD, whereas the remaining 40% had moderate LVD. After clinical and echocardiographic follow-ups, all included patients showed improvement in their ejection fraction. About 70% of the patients went back to NYHA Class I, whereas the remaining 30% improved to NYHA Class II.	Q1: Yes Q2: Yes Q3: Yes Q4: Yes Q5: Yes Q6: Yes Q7: Yes Q8: Yes

Abbreviations: [1]HF (Heart failure); [2]NYHA (New York Heart Association); [3]MLWHF (Minnesota Living with Heart Failure); [4]PHQ-9 (Patient Health Questionnaire); [5]HI-AIT (High-intensity Aerobic Interval Training); [6]IMT (Inspiratory Muscle Training); [7]DD (Diastolic dysfunction); [8]CAC (Coronary artery calcium); [9]OR (Odds ratio); [10]CI (Confidence interval); [11]DM (Diabetes mellitus); [12]CAD (Coronary artery disease); [13]LOS (Length of stay); [14]LVMI (Left ventricular mass index); [15]BMI (Body mass index); [16]SBP (Systolic blood pressure); [17]LVEDD (Left Ventricular end diastolic diameter); [18]WC (Waist circumference); [19]LVD (Left ventricular dysfunction); [20]PPCM (Peripartum cardiomyopathy); *Joanna Briggs Institute Critical Appraisal Checklist: Q1: Clearly defined criteria for inclusion, Q2: Detailed description of study subjects and setting, Q3: Valid and reliable measurement of exposure, Q4: Standard criteria used for measurement of condition, Q5: Confounding variables identified, Q6: Strategies to deal with confounding variables, Q7: Valid and reliable measurement of outcomes, Q8: Appropriate statistical analysis used.

guidelines. Two studies reported self-care (Deek et al., 2017; Massouh et al., 2020). A common scale called the Arabic version of the Self-Care in HF Index (SCHFI) was used. The scale reports self-care through three subscales: maintenance, management, and confidence (Deek & Chang et al., 2016).

Self-care scores in both studies were low. However, the mean scores varied significantly between the two samples. One sample had mean self-care scores of 67.26 on self-care maintenance, 66.96 on management, and 69.5 on self-care confidence (Massouh et al., 2020). In the other sample, lower scores were reported as 35 on self-care maintenance, 16 on management, and 41 on self-care confidence (Deek et al., 2017). An important note was that participants in both samples scored lowest on the self-care management subscale. In addition, Lebanese females generally scored higher than men (maintenance: 70.55 ± 14.20 versus 66.22 ± 14.40; confidence: 73.44 ± 4.20 versus 68.26 ± 19.97; and management: 70.71 ± 24.64 versus 65.54 ± 20.06) in Massouh's sample (Massouh et al., 2020), whereas males scored higher than females on maintenance (35.22 ± 14.11 versus 34.22 ± 14.93) and confidence (42.31 ± 13.35 versus 39.11 ± 17.01) scores in Deek's sample (Deek et al., 2017).

Employment status was a significant determinant of self-care in both studies. Those employed reported higher scores in maintenance (67.33 ± 13.45) and management (68.33 ± 22.49) and lower scores in confidence (64.02 ± 18.21) in Massouh et al.'s (2020) sample; however, these findings were reversed in Deek et al.'s (2017) sample [in employed versus unemployed on maintenance (32.07 ± 14.46 versus 35.35 ± 14.44), management (13.55 ± 14.04 versus 16.16 ± 15.09), and confidence (42.37 ± 13.93 versus 40.55 ± 15.42) subscales]. Moreover, hospitalized patients had justifiably lower self-care maintenance and management scores and significantly lower self-care confidence scores (Massouh et al., 2020). Conversely, higher self-care maintenance and management scores were reported for those with previous hospitalization (Deek et al., 2017).

Marital status also seemed to affect the subscales

of self-care (Massouh et al., 2020). Participants who were not married had higher self-care maintenance (67.27 ± 13.48), confidence (70.76 ± 14.4), and management (72.69 ± 14.4) than married participants. Patients who were currently hospitalized scored lower on all three scales (self-care maintenance: 64.99 ± 13.35; self-care confidence: 60.76 ± 16.98; and self-care management: 65.65 ± 21.23) than those who were not hospitalized (Massouh et al., 2020). HF severity was a predictor of self-care in both samples. Better functional status (lower NYHA score)

Table 3. List of Sociodemographic Characteristics and Comorbidities of the Participants in the Included Studies

Author (year)	Sociodemographic							Comorbidities n (%)					
	Sample Size	Age (Mean ± SD)	Gender (Male; n (%))	High School n (%)	Smoking Status (%)	Married	EF	AFib	CAD	HTN	DLM	DM	COPD
Massouh et al. (2020)	100	67.59 ± 12.09	76 (76)	65 (65)	NA	78 (78)		NA	NA	83 (83)	NA	NA	NA
Zahwe et al. (2020)	210	64.26 ± 15.18	157 (74.8)	119 (59)	40 (19)	156 (74.3)		45 (21.4)	NA	NA	NA	NA	NA
Sadek et al. (2020)	40	52.12 ± 11.75	20 (50)	NA	NA	NA		NA	NA	NA	NA	NA	NA
Mansour et al. (2020)	191	52 ± 12	158 (83)	NA	123 (64)	NA	65+7	NA	NA	NA	NA	NA	NA
Abou Dagher et al. (2018)	174	73 ± 14.68	55 (63.2)	NA	27 (31)	NA		29 (33.3)	66 (75.9)	70 (80.5)	32 (36.8)	44 (50.6)	22 (11.80)
Deek et al. (2017)	256	67 + 8	141 (55)	63 (25)	119 (78)	162 (63)	36+12	82 (32)	165 (65)	185 (72)		118 (46)	46 (18)
Deek et al. (2016)	187	63.71+12.87	111 (59.4)	NA	71 (42)	NA	33.09+13.1	32 (17)	95 (50.8)	114 (61)	28 (15)	78 (41.70)	22 (11.80)
Matta et al. (2016)	1,356	52.9 ± 17.4	660 (48.7)	NA	635 (46.8)	NA	60.5+4.1	NA	278 (20.5)	577 (42.6)	411 (30.3)	225 (16.6)	
Tatari et al. (2015)	151	65 (28 – 93) 10.7*	62 (41)	NA	NA	NA		32 (21)	71%	66%		40%	
Kossaify et al. (2013)	99	61.59 ± 13.9	54 (54.5)	NA	NA	NA	61.64	NA	23 (82.1)	40 (80)	24 (88.9)	9 (90)	
Moukarbel et al. (2003)	10	33.7	0 (0)	NA	NA	NA	27.5	NA	NA	NA	NA	NA	NA
Total	2,774	57.98	1,494	247	1,015	250	47.27	220	734	1,169	499	535	90

Legend: AFib (Atrial fibrillation); CAD (Coronary artery disease); HTN (Hypertension); DLM (Dyslipidemia); DM (Diabetes mellitus); COPD (Chronic obstructive pulmonary disease).

was associated with better self-care (self-care maintenance: 63.87 ± 14.21; self-care confidence: 65.47 ± 19.86; and self-care management: 66.43 ± 21.37; Massouh et al., 2020). The same was true for Deek et al.'s (2017) sample for maintenance but reversed for management and confidence. Participants with NYHA Classes I and II had significantly lower scores on management compared with those with Classes III and IV.

Diastolic Dysfunction and HF. Physical inactivity, higher body mass index, increased age, and multiple comorbidities were significantly associated with diastolic dysfunction (Matta et al., 2016). Diastolic dysfunction or age was found to be significantly associated with subclinical atherosclerosis. However, when the diastolic dysfunction and age were combined, the risk of developing atherosclerosis was 9 times higher (Mansour et al., 2020). Conversely, physical activity, specifically high-intensity aerobic interval training and inspiratory muscle training, improved exercise time, 6-minute walk test, and quality of life (Sadek et al., 2020). The latter was decreased with readmission, depression, and higher NYHA class (Zahwe et al., 2020) but was not changed with education (Deek et al., 2017).

Discussion

This review aimed to gather and analyze the available literature on HF in Lebanon and subsequently highlight the gaps in knowledge, which will help guide future research and practice improvements in Lebanon and surrounding countries of similar sociopolitical and economic conditions. The unique features of collectivist cultures make strategies for improvement challenging, whereas many self-management strategies are based on Western cultures where there exists a strong emphasis on individuals. By contrast, in collectivist cultures, there exists an increased importance of family involvement. In many countries such as Lebanon, the rapidly changing political and economic circumstances challenge the ability to plan strategically. This phe-

nomenon, along with the high rates of illiteracy that were established in the older adult population with HF, render regular educational strategies to be ineffective. The variance in samples in this review showed varying results in terms of sociodemographic characteristics and self-care practices. The latter significantly varied with educational status, marital status, and clinical profile. This result was evident with the great difference in the level of education among the study samples. This variance could be explained by the availability of a multidisciplinary disease management program at one of the data collection sites (Massouh et al., 2020) and the lack of such advanced service at the other. Other variables that could contribute to self-care practices included motivation, experience, and skills, in addition to cultural beliefs and values (Jaarsma et al., 2017). Cultural beliefs and values may be key aspects to consider when evaluating or planning interventions related to self-care in collectivist cultures (Jaarsma et al., 2017) as was evaluated with patients with HF to show improved self-care and read-mission outcomes (Deek & Noureddine et al., 2016).

Other factors to consider are the support and access to healthcare (Jaarsma et al., 2017). These factors were evidently a challenge in the Lebanese setting due to the dire financial situation in the country and the resultant lack of medical supplies and medications. These common faces of instability challenge the countries of the MENA region (Dhaoui, 2019). Changes in the healthcare system and, consequently, care and follow-up tailored to the needs of these patients are inevitable.

The low scores on the self-management subscale were similar to findings of a study conducted in 15 countries (Jaarsma et al., 2013), as well as other developing countries such as Taiwan (Tung et al., 2012) and Iran (Zamanzadeh et al., 2012). However, the improved self-care scores on the three subscales of the SCHFI, in one study, with better functional status could be attributed to higher levels of energy in participants with better functional status to devote to

self-care. They may also believe that being less symptomatic is a consequence of them managing their HF well. However, participants with lower NYHA classification had lower scores on management compared with those with NYHA Classes III and IV. This result was consistent with studies that reported that patients with HF engage in self-care when their cases are worsened, reflected by lower ejection fraction (Seto et al., 2011). An interesting finding was the higher scores across the three subscales of the SCHFI in single patients with HF compared with those who were married. This finding contradicted the previous literature, which presents the importance of family involvement and the importance of a caregiver, in general, in collectivist cultures. However, this finding was retrieved from a sample that was considered well-educated and of higher sociodemographic status (Massouh et al., 2020) than that of the study showing contradicting findings (Deek et al., 2017). These findings should be further investigated in a study with a larger sample size that would allow generalizability to people with HF.

The Arabic-translated version of the SCHFI was previously validated in the Lebanese setting with good psychometric properties. The findings of the validation study showed that the modified version of this tool indicated favorable outcomes. Such outcomes include dropping items from three subscales, which should be considered when evaluating self-care in future studies and allowing larger samples for better judgment on the psychometric properties of this Arabic-translated version of the SCHFI (Deek & Chang et al., 2016). Such evaluation could be performed across different countries of the region to allow for cross-cultural comparison and enhance better understanding of the different, and possibly similar, needs of patients with HF.

More national descriptive studies should be conducted to outline the needs of the Lebanese population with HF in light of all the rapid sociopolitical and economic changes in the country. Moreover, a national registry may assist in monitoring health outcomes. The challenges

facing HF care in low-and middle-income countries are vast. These challenges include but not limited to economic, political, health system, and social issues. Fortunately, these modifiable variables, when and if amended, can allow for stability and security in terms of chronic disease management and the ability of the population with HF to maintain a minimum level of wellbeing. Addressing the educational needs of people living with HF while considering their educational level and health literacy is pivotal. The differences in regions are many but the culture of the country is somehow unified and can be targeted through personalized and flexible educational interventions.

This review can be investigated within the context of the current times in Lebanon and the MENA region. In the midst of the COVID-19 pandemic, on August 4, 2020, Beirut, the capital of Lebanon, witnessed one of the biggest explosions in history, causing further devastation (Farha & Abi Jaoude, 2020). Isolating the cumulative experience of trauma for patients and healthcare workers alike is not valid. As scholars seek to develop interventions for HF in Lebanon and the region, these factors should be considered. Nurses can have a powerful voice to lead systems change and address critical social issues (Dhaini et al., 2020). This notion has been proven once and again through nurse-led multidisciplinary interventions aimed at improving HF outcomes (Rice et al., 2018). In addition, education is one of the main and pivotal roles of the nursing profession, which should be tailored to meet the needs of people with low literacy levels, as seen in the countries of this region (Asbu et al., 2017).

Conclusion

Research on HF remains highly limited in Lebanon and the MENA region and is considerably needed to inform healthcare practitioners regarding the needs of the population. Therefore, national and regional studies should be conducted to assess the current trends in patterns of care and health utilization and healthcare inter-

ventions developed that are culturally appropriate. Scholars should also consider the many changes and challenges facing the nursing profession and the healthcare system in general in delivering the optimal care it is aiming for. Future studies should address the limitations of this work, such as the lack of generalizability considering the heterogeneity of the samples' clinical and sociodemographic characteristics from different locations of the country. In addition, the limited number of intervention studies did not allow for a rigorous analysis to yield accurate results. Despite these limitations, these data are useful in developing future interventions. The design of interventions should be tailored to meet the continuously changing needs of people with HF with the rapid changes in the country. This factor should be initially addressed through continuous evaluation of the financial and sociopolitical changes and their effects on the healthcare system and patients. Following the understanding of these implications, these factors should be adapted to practice while aiming to improve patient outcome.

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