PENERAPAN *TELENURSING* TERHADAP PENINGKATAN KUALITAS PELAYANAN *HOME CARE* PADA PASIEN COVID-19

LITERATUR REVIEW

SKRIPSI

Oleh :

Amelia Shinta Dewi

18010050

PROGRAM STUDI ILMU KEPERAWATAN
FAKULTAS KESEHATAN
UNIVERSITAS dr. SOEBANDI

2022

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SKRIPSI

Untuk Memenuhi Persyaratan
Memperoleh Gelar Sarjana Keperawatan (S.Kep)

Oleh:

Amelia Shinta Dewi

NIM. 18010050

PROGRAM STUDI S1 ILMU KEPERAWATAN
FAKULTAS KESEHATAN
UNIVERSITAS dr.SOEBANDI
2022

LEMBAR PERSETUJUAN

Hasil penelitian ini telah diperiksa oleh pembimbing dan telah disetujui untuk mengikuti seminar hasil pada Program Studi Sarjana Keperawatan Universitas dr.Soebandi Jember

Jember, 18 Juli 2022

Pembimbing I

Yuniasih Purwanigrum, S.ST., M.Kes

NIDN 4005067901

Pembimbing II

Mahmud Ady Yuwanto, S.Kep.,Ns.,M.M.,M.Kep

NIDN 0708108502

LEMBAR PENGESAHAN

Skripsi yang berjudul "Penerapan *Telenursing* Terhadap Peningkatan Kualitas Pelayanan *Home Care* Pada Pasien Covid-19 *Literatur Review*" telah diuji dan disahkan oleh Program Sarjana Keperawatan Universitas dr. Soebandi Jember pada:

Hari : Selasa

Tanggal : 26 Juli 2022

Tempat : Universitas dr.Soebandi Jember

Tim Penguji

Ketua,

Eni Subiastutik, M.Sc
NIDN. 4028056801

Penguji I,

Yuniasih Purwanigrum, S.ST., M.Kes
NIDN 4005067901

Penguji II,

Mahmud Ady Yuwanto, S.Kep., Ns., M.M., M.Kep
NIDN 0708108502

Mengesahkan,
Dekan Fakultas Ilmu Kesehatan
Universitas dr.Soebandi Jember

Hella Meldy Tursina, S.Kep.,Ns.,M.Kep
NIDN. 0706109104

iv

PERNYATAAN ORISINALITAS SKRIPSI/LAPORAN TUGAS AKHIR

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Nama : Amelia Shinta Dewi

NIM : 18010050

Program Studi : Ilmu Keperawatan

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Demikian pernyataan yang saya buat sebenar-benarnya.

Yang menyatakan,

Amelia Shinta Dewi

18010050

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Oleh:

Amelia Shinta Dewi

NIM. 18010050

Pembimbing

Dosen Pembimbing Utama : Yuniasih Purwanigrum, S.ST., M.Kes

Dosen Pembimbing Anggota : Mahmud Ady Yuwanto, S.Kep., Ns., M.M., M.Kep

PERSEMBAHAN

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"Jika kamu ingin hidup bahagia maka, terikatlah pada tujuanmu bukan kepada benda, ataupun orang"

(Albert Einsten)

ABSTRAK

Dewi, Amelia Shinta*, Purwaningrum, Yuniasih**, Yuwanto, Mahmud Ady***, 2022. **Penerapan *Telenursing* Terhadap Peningkatan Kualitas Pelayanan *Homecare* Pada Pasien Covid-19 Dengan *Literature Review*.** *Literature Review.* Program Studi Ilmu Keperawatan Universitas dr.Soebandi Jember

Pendahuluan: Dengan meningkatnya pasien positif Covid-19 yang meninggal 9,4% dari 6.203 yang dijadikan sampel, pelayanan *homecare* dapat dilakukan untuk penanganan pasien covid-19 dengan penyakit degeneratif guna memulihkan kesehatan pasien yang sedang isolasi mandiri, memaksimalkan kemandirian pasien, dan meminimalkan terjadinya penyebaran virus Covid-19. Dengan adanya hal tersebut, muncul inovasi dalam pemberian asuhan keperawatan melalui *homecare* yang berbasis *telenursing*. Saat ini, *homecare* yang berbasis *telenursing* sangat efektif digunakan dalam peningkatan pelayanan kesehatan. **Tujuan**: Dari *literature review* ini untuk mengetahui bentuk penerapan *telenursing* terhadap peningkatan kualitas pelayanan *homecare* pada pasien Covid-19. **Metode:** Pencarian artikel dilakukan secara elektronik menggunakan *database* dari tahun 2016 sampai dengan 2021 dengan *keyword "telenursing"* , "*homecare*", "kualitas pelayanan", dan "Covid-19".Sehingga didapatkan 7 artikel yang sesuai dengan kriteria inklusi untuk di *review*. **Hasil:** Berdasarkan hasil dari 7 *artikel* yang di *review* bahwa bentuk penerapan telenursing menggunakan *smartphone* dengan menginstall aplikasi. Pelayanan *homecare* berbasis *telenursing* dilakukan dengan mempertimbangkan berbagai aspek-aspek keperawatan danjuga diberikan dengan edukasi, konsultasi, dan monitoring. Penggunaan *telenursing* pada pelayanan *homecare* memiliki pengaruh karena penggunaan *telenursing* sangat efektif untuk menghemat biaya dan waktu tempuh perawat untuk melakukan kunjungan rumah. **Kesimpulan:** Berdasarkan *literature review* penggunaan *telenursing* sangat efektif dalam peningkatan kualitas pelayanan *home care*.
Kata Kunci: *Telenursing, Homecare*, Covid-19

*Peneliti

** Pembimbing 1

*** Pembimbing 2

ABSTRACT

Dewi, Amelia Shinta*, Purwaningrum, Yuniasih**, Yuwanto, Mahmud Ady***, 2022. **Application of Telenursing to Improve the Quality of Homecare Services for Covid-19 Patients.** *Literature Review.* Nursing Science Study Program, University of dr. Soebandi Jember

Introduction: With the increase in positive Covid-19 patients who died 9.4% of the 6,203 sampled, homecare services can be carried out for handling Covid-19 patients with degenerative diseases in order to restore the health of patients who are self-isolating, maximize patient independence, and minimize the spread of the virus. Covid-19. With this, innovations emerged in providing nursing care through telenursing-based homecare. Currently, telenursing-based homecare is very effective in improving health services. **Objective:** From this literature review, to find out the form of implementing telenursing to improve the quality of homecare services for Covid-19 patients**.Methods:** Article searches were conducted electronically using a database from 2016 to 2021 with the keywords "telenursing" , "homecare", "quality of service", and "Covid-19". So that 7 articles were obtained that matched the inclusion criteria for review. **Results:** Based on the results of 7 articles reviewed that the form of implementing telenursing is using a smartphone by installing an application. Telenursing-based homecare services are carried out by considering various aspects of nursing and are also provided with education, consultation, and monitoring. The use of telenursing in homecare services has an influence because the use of telenursing is very effective in saving costs and time for nurses to make home visits. **Conclusion:** Based on the literature review, the use of telenursing is very effective in improving the quality of home care services.
Keywords: *Telenursing, Homecare,* Covid-19

*Researcher

** Adviser 1

*** Adviser 2

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ACE2	: *Angio Converting Enzyme 2*
COVID-19	: *corona virus diases*
MERS	: *Middle East Respiratory Syndrome*
SARS	: *Severe Acute Respiratory Syndrome*
SOP	: Standart Operasional Prosedure
WHO	: *World Health Organization*

DAFTAR LAMPIRAN

`BAB 1

PENDAHULUAN

1.1 Latar Belakang

Penyakit *Corona Virus Disease* (Covid-19) merupakan salah satu jenis virus baru dari golongan virus *Servere Acute Respiratory Syndrome* (SARS) yang telah dinyatakan oleh *World Health Organization* (WHO) sebagai pandemi global karena tingginya kasus penyebarannya yang terjadi di dunia. Penyebaran penyakit Covid-19 dapat menimbulkan ancaman baru bagi masyarakat, dikarenakan tingginya jumlah pasien yang terkonfirmasi positif Covid-19 serta terbatasnya akses untuk pelayanan kesehatan. Dengan adanya harapan bagi masyarakat untuk tetap mendapatkan akses pelayanan kesehatan, sehingga salah satunya dengan menjalankan perawatan dirumah (*home care*). *Home care* menurut Departemen Kesehatan, merupakan salah satu bentuk perawatan lanjutan dari pelayanan kesehatan secara komprehensif dan berkesinambungan yang diberikan kepada individu atau pasien serta keluarga dirumah. Tujuan dari pelayanan *home care* dimasa pandemi pada saat ini dapat memulihkan kesehatan pasien yang sedang melakukan isolasi mandiri, memaksimalkan kemandirian pasien, dan meminimalkan terjadinya penyebaran penyakit Covid-19 (Abdullah, Arafat and Syahrul, 2020). Kebutuhan akan layanan *home care* sangatlah tinggi, hal ini seiring dengan peningkatan jumlah pasien yang memiliki prevalensi penyakit penyerta atau komorbid seperti hipertensi, penyakit jantung, diabetes dan penyakit paru.

Menurut kepala Dinkes dari 6.203 kasus yang dijadikan sampel, sebanyak 9,4% diantaranya komorbid diabetes milletus dan 9,2% komorbid hipertensi. Berdasarkan data RISKESDA prevalensi penyakit jantung seperti hipertensi meningkat di tahun 2013 sebesar 25,8% menjadi 34,1% di tahun 2018. Hipertensi menyebabkan 45% kematian karena penyakit jantung sedangkan revalensi penyakit diabetes 2,1% (Depkes,2013). Dan penyakit penyerta lainnya seperti *tuberculosis* (TBC), asma, dan penyakit lainnya di temukan meninggal dengan presentase masing-masing dibawah 0,5%. Penyakit penyerta yang ada pada pasien positif Covid-19 menimbulkan tantangan bagi dunia keperawatan untuk meningkatkan penyedia layanan keperawatan yang berkelanjutan. Perawatan yang berkelanjutan adalah perawatan transisi, yaitu perawatan yang berfungsi untuk memanajemen pasien ketika di rumah sehingga proses perawatannya tetap kontinuitas (Nugroho *et al.*, 2020). Penanganan pasien covid-19 dengan penyakit degeneratif bisa dilakukan dengan cara *home care*. Pasien dengan penyakit covid-19 dalam masa rehabilitasi dengan gejala-gejala ringan hingga sedang juga dapat dilakukan perawatan *home care*.

Pelayanan *home care* memiliki kesinambungan dengan pelayanan kesehatan, kesinambungan *home care* dengan perawatan pasien sangat penting karena perawat dapat memfasilitasi proses pengobatan, memperbaiki kondisi penyakit, dan dapat mengendalikan penyakit terminal (Nugroho *et al.*, 2020). Pelayanan *home care* tidak memerlukan rawat inap di rumah sakit di masa pandemi Covid-19, cukup melakukan perawatan di rumah saja. *Home care* salah satu bentuk pelayanan yang mudah diakses dan dapat diberikan secara tidak langsung dengan

menggunakan media komunikasi. Salah satu bentuk pelayanan *home care* secara tidak langsung yaitu dengan mengunakan *telenursing* yang dapat memberi kemudahan bagi masyarakat. *Telenursing* merupakan penggunaan teknologi informasi dalam memberikan pelayanan keperawatan dimana ada jarak secara fisik yang jauh antara perawat dengan pasien, atau antar perawat. *Telenursing* dapat diakses dengan media *telephone,* dan juga bisa diakses melalui jaringan internet (Kord *et al.*, 2021).

Di era kebiasaan baru, kini penggunaan *smartphone* sangat membantu untuk mengakses komunikasi jarak jauh. Oleh karena itu, di dalam dunia teknologi informasi bidang kesehatan kini telah mengembangkan teknologi untuk meningkatkan kualitas pelayanan dalam mengatasi masalah jarak yang ditempuh pasien. Dengan adanya pandemi Covid-19 dapat meningkatkan jumlah individu dengan penyakit degeneratif serta meningkatnya jumlah kasus perawatan dan waktu rehabilitasi, sehingga menyebabkan akses pelayanan kesehatan di rumah sakit sangat terbatas. Kini masyarakat lebih memilih tetap melakukan waktu perawatan di rumah saja. Dengan adanya hal tersebut, muncul suatu inovasi baru dalam pemberian asuhan keperawatan melalui *home care* yang berbasis *telenursing*. Saat ini *home care* yang berbasis *telenursing* sangat efektif digunakan sebagai inovasi dalam peningkatan pelayanan kesehatan (Padila *et al.*, 2018).

Ada lima aspek dalam meningkatkan kualitas pelayanan *home care* yang meliputi kehandalan perawat, jaminan, bukti langsung, empati, dan daya tanggap pasien yang berhubungan dengan tingkat kepuasan pasien. Pelayanan *home care* banyak diminati masyarakat karena dengan adanya kecanggihan teknologi,

masyarakat bisa komunikasi dengan perawat melalui jarak jauh. Prinsip perawat di pelayanan *home care* tetap tidak mengubah asuhan keperawatan. Di pelayanan *home care* sangat memungkinkan sekali untuk menggunakan *telenursing.* Menurut UU no 90 tahun 2015, penggunaan *telenursing* mampu meningkatkan cangkupan perawat dalam memberikan asuhan keperawatan untuk jarak jauh seperti pedesaan atau berpendudukan jarang (*rural area*). *Telenursing* mengacu dalam penggunaan telekomunikasi yang memungkinkan interaksi antara pasien dan anggota keluarganya kepada profesional kesehatan (Liang *et al.*, 2021).

Telenursing lebih dominan berbicara secara virtual daripada interaksi dengan secara langsung kepada pasien. *Telenursing* dapat dilakukan dengan memberikan konseling, pendidikan kesehatan, menjelaskan terkait diagnosa pasien, dan dukungan keluarga yang kini menjadi pusat perawatan dalam inovatif. Dampak penggunaan *telenursing* dapat memberikan pelayanan keperawatan dengan meningkatnya kepuasan pasien serta partisipasi aktif keluarga, dan dapat menghemat biaya selama perawatan (Fadhila and Afriani, 2019). Waktu yang diperlukan untuk pelayanan *home care* berbasis *telenursing* juga semakin pendek. Pasien dapat melakukan kontak dengan perawat melalui internet, *telephone* atau *video call* untuk mendapatkan informasi, perawatan dan pengobatan.

Berdasarkan latar belakang diatas, peneliti membuat *literatur review* terkait dengan penerapan *telenursing* terhadap peningkatan kualitas pelayanan *home care* di masa pandemi Covid-19.

1.2 Rumusan Masalah

Berdasarkan latar belakang yang telah dibuat, adapun rumusan permasalahan yang diangkat yaitu “Bagaimana penerapan telenursing terhadap peningkatan kualitas pelayanan *home care* dimasa pandemi Covid-19? : *Literatur Review*”.

1.3 Tujuan

1.3.1 Tujuan Umum

Adapun tujuan umum dari permasalahan yang telah diangkat di dalam *literatur review* yaitu “Untuk mengetahui bentuk penerapan *telenursing* terhadap peningkatan kualitas pelayanan *home care* dimasa pandemi Covid-19”.

1.3.2 Tujuan Khusus

Adapun tujuan khusus yang diambil dari permasalahan yang telah diangkat dengan *literatur review* yaitu:

a. Mengidentifikasi jenis *telenursing*

b. Gambaran bentuk pelayanan *homecare* dengan *telenursing*

1.4 Manfaat

1.4.1 Manfaat Bagi Penulis

Manfaat bagi penulis yaitu dapat mengetahui dan memahami terkait ilmu teknologi di bidang kesehatan dengan menerapan *telenursing* di pelayanan *home care.*

1.4.2 Manfaat Bagi Institusi

Manfaat bagi institusi yaitu dapat digunakan sebagai referensi untuk menambah pengetahuan dan memperkaya pandangan ilmu di dalam dunia teknologi bidang keperawatan.

1.4.3 Manfaat Bagi Pembaca

Manfaat bagi pembaca dapat meningkatkan pengetahuan terkait kecanggihan teknologi di era baru dengan menggunakan *telenursing* untuk pelayanan kesehatan dan *home care.*

BAB 2

TINJAUAN PUSTAKA

2.1 Konsep COVID-19

2.1.1 Definisi COVID-19

Corona Virus Disease 2019 (COVID-19) telah dinyatakan oleh WHO sebagai *pandemic* dan penyebaran COVID-19 di Indonesia saat ini sudah semakin meningkat dan meluas lintas wilayah dan lintas negara yang ditandai dengan peningkatan jumlah kasus dan penyebaran serta telah terjadi transmisi epidemiologi (Kemenkes RI, 2021). *Corona virus disease* merupakan virus baru yang muncul dari satu jenis virus golongan *Severe Acute Respiratory Syndrome* (SARS). Penyakit ini pertama kali diidentifikasi di Wuhan,China pada tahun 2019 akhir. Pada manusia biasanya menyebabkan infeksinya saluran pernafasan mulai dari flu biasa hingga penyakit yang serius contohny seperti *Middle East Respiratory Syndrome* (MERS).

Menurut Richard Sutejo, virus Covid-19 disebabkan oleh virus yang umumnya menyerang sistem pernafasan.tetapi strain Covid-19 memiliki morbiditas dan mortalitas yang lebih tinggi, akibatnya adanya mutasi genetik dan kemungkinan terjadi transmisi interspesies. Virus Covid-19 ini bisa menular dari manusia ke manusia melalui *dropplet*. Menurut (Nilamsari, Wahyu and Wardani, 2021) *World Health Organization* (WHO) secara resmi telah menyatakan Covid-19 sebagai pandemi global pada tanggal 9 Maret 2020.

2.1.2 Tanda dan Gejala COVID-19

Menurut Kemenkes (2020) adapun tanda gejala umum pada pasien yang menderita Covid-19 dan biasanya tanda gejala biasanya muncul secara bertahap, diantaranya sebagai berikut:

a. Demam lebih dari 36,5ºC
b. Batuk kering
c. *Fatigue* atau kelelahan
d. Nyeri otot dan sakit kepala
e. Hidung tersumbat

2.1.3 Kriteria Pasien Covid-19

Menurut (Kemenkes,2020) pasien dengan penyakit Covid-19 bisa dilakukan isolasi mandiri atau melakukan perawatan dirumah dengan kriteria penyakit ringan seperti batuk kering, *anosmia*, dan demam. Menurut Keputusan Menteri Kesehatan (KMK) Nomor HK.01.07/MENKES/413/2020 tentang pedoman pencegahan dan pengendalian penyakit Covid-19, untuk pasien yang terkonfirmasi gejala ringan dengan penanganan isolasi mandiri dan dilakukan pemantauan secara berkala sebelum dinyatakan selesai dari isolasi. Pasien covid-19 dengan isolasi mandiri dirumah bisa melakukan perawatan *home care* pada tahap rehabilitasi atau penyembuhan. Perawat atau tenaga medis lainnya bisa memantau kondisi pasien dengan menggunakan *telenursing* atau *telemedecine*.

2.2 Konsep *Home Care*

2.2.1 Definisi *Home Care*

Home care berkembang dari konsep *nursing home visit* yang dikenal dengan istilah *District Nurse* yang didedikasikan kepada Florence Nightingale

yang situjukan pada pasien yang sedang melakukan perawatan di rumah (Rice, 2006).

Bentuk pelayanan perawatan dirumah (*Home Care*) menurut Departemen Kesehatan, merupakan bentuk pelayanan keperawatan yang berkesinambungan dan komprehensif yang diberikan kepada pasien dan keluarga di tempat tinggal mereka. Tujuan dari pelayanan *home care* untuk meningkatkan, mempertahankan kesehatan, dan meminimalkan dampak terjadinya penyakit (Abdullah, Arafat and Syahrul, 2020). *Home care* merupakan bentuk pelayanan kolaborasi antara tim kesehatan seperti dokter, perawat, ahli gizi, fisioterapi, dan lain-lain.

Menurut Neis dan Mc.Ewen, *home care* merupakan sistem pelayanan kesehatan dan pelayanan sosial yang diberikan di rumah kepada orang-orang cacat atau orang-orang yang harus tinggal di rumah karena kondisi kesehatannya. Komponen *home care* meliputi pasien, keluarga, pemberian pelayanan yang profesional, yang tujuannya untuk membantu pasien kembali pada level kesehatan optimum dan kemandirian (Yuliansyah, 2019).

Home care selalu mengutamakan pemenuhan kebutuhan pasien dan kepuasan pasien melalui penyelenggaraan pelayanan kesehatan yang berkualitas tanpa melanggar kode etik dan standar mutu pelayanan profesi (Fahrepi, Rate and Hadi, 2019). Pelaksanaan *home care* sendiri dapat diaplikasikan dengan berbagai macam ilmu keperawatan yang mempelajari manusia baik sebagai individu, keluarga, kelompok dan masyarakat.

2.2.2 Manfaat *Home Care*

Menurut (Kistler and Drickamer, 2018) adapun beberapa manfaat dari pelayanan *home care* yaitu:

a. Bagi pasien dan keluarga
    1. Program *home care* bisa meringankan biaya rawat inap yang semakin mahal, karena dapat mengurangi akomodasi pasien dan transportasi serta konsumsi keluarga.
    2. Mempererat ikatan keluarga, karena bisa selalu berdekatan pada saat ada salah satu anggota keluarga yang sakit.
    3. Pasien merasa lebih nyaman karena berada di rumah sendiri ditemani keluarganya.
b. Bagi perawat
    1. Dapat memberikan variasi lingkungan kerja sehingga tidak jenuh dengan lingkungan yang tetap.
    2. Dapat mengenal pasien dan lingkungannya dengan baik.
    3. Dapat memberikan pendidikan kesehatan sesuai dengan kondisi lingkungannya sehingga kepuasan kerja perawat meningkat.

2.2.3 Tujuan *Home Care*

Tujuan utama dari pelayanan *home care* menurut (Fahrepi, Rate and Hadi, 2019) adalah untuk meningkatkan, mempertahankan, serta memaksimalkan tingkat kemandirian pasien dan meminimalkan dampak terjadinya penyakit guna mencapai kemampuan individu atau pasien secara berkesinambungan. Kesinambungan pelayanan *home care* sangat penting untuk memfasilitasi pasien

dalam proses pengobatan, perbaikan kondisi penyakit yang dialami pasien, meningkatkan dukungan keluarga dengan melibatkannya dan mengendalikan komplikasi pasien. Adapun tujuan khusus dari pelayanan kesehatan *home care* yaitu:

a. Untuk memenuhi kebutuhan dasar manusia baik secara biologis, psikologis, sosio, dan spiritual.
b. Untuk meningkatkan kemandirian pasien dan keluarga dalam pemeliharaan kesehatan selama proses rehabilitasi pasien.
c. Memenuhi kebutuhan pelayanan keperawatan di rumah sesuai dengan kebutuhan pasien.

Menurut Direktorat Bina Pelayanan Keperawatan Depertemen Kesehatan RI 2007 menyatakan "Bukti kemandirian perawat" yang dimaksud adalah tujuan dari bentuk pelayanan dirumah untuk meningkatkan kualitas hidup pasien dan keluarga

2.2.4 Prinsip *Home Care*

Menurut (Kistler and Drickamer, 2018) adapun prinsip-prinsip *home care* yaitu:

a. Pengelolaan layanan keperawatan di rumah dilakukan oleh perawat atau tim yang profesional di bidang khusus.
b. Tenaga pelaksana di layanan *home care* terdiri dari tenaga profesi yang memiliki keahlian khusus dan memiliki surat izin khusus (dokter, perawat, bidan, dan tenaga profesi lainnya).

c. Mengaplikasikan *home care* sebagai dasar dalam pengambilan keputusan pasien.
d. Dengan mengumpulkan data pasien secara sistematis dan akurat.
e. Tetap menggunakan data hasil pengkajian pasien sebagai dasar untuk menegakkan diagnosa keperawatan.
f. Mengembangkan intervensi keperawatan dengan dasar diagnosa yang berkaitan dengan tindakan-tindakan pencegahan, terapi-terapi, dan pemulihan.
g. Mengevaluasi pasien dan keluarga terhadap intervensi yang telah diberikan.
h. Bertanggung jawab akan pelayanan yang bermutu melalui manajemen khusus dan *discharge planning.*
i. Ikut perbartisipasi dalam riset untuk mengembangkan pengetahuan pelayanan keperawatan *home care*.
j. Menggunakan kode etik dalam pelaksanaan praktik keperawatan *home care*.

2.2.5 Landasan Hukum *Home Care*

Menurut Dottorotta (dalam Azikin, 2017:7) landasan hukum praktek perawat di dalam pelayanan keperawatan yaitu:

a. UU Kes. No. 36 tahun 2009 tentang pandemic.
b. UU No. 29 tahun 2004 tentang praktik kedokteran.
c. Kepmenkes No. 1239 tahun 2001 tentang registrasi dan praktik perawat.
d. Kepmenkes No. 279 tahun 2006 tentang Pedoman Penyelenggaraan puskesmas.
e. PP No. 32 tahun 1996 tentang tenaga Kesehatan.

f. Permenkes RI No. HK. 02.02/MENKES/148/2010 tentang Izin dan Penyelenggaraan Praktik Perawat.

2.2.6 Peran dan Fungsi Perawat *Home Care*

Menurut (Efendi and Makhfudli, 2010) perawat *home care* di kalangan komunitas merupakan tenaga kesehatan yang sudah lulus dari pendidikan tinggi dan memiliki Surat Tanda Registrasi (STR) serta sertifikat pelatihan *home care* dan Surat Izin Pratik (SIP) minumal 3 tahun. Perawat *home care* mampu memberikan pelayanan secara langsung pada keluarga di rumah yang menderita penyakit akut maupun kronis.

Menurut (Efendi and Makhfudli, 2010) adapun peran pelayanan *home care* dapat meningkatkan fungsi keluarga dalam merawat anggota keluarga yang mempunyai resiko tinggi dalam masalah kesehatan, beberapa peran dan fungsi lainnya dalam pelayanan *home care* meliputi:

a. Perawat sebagai pengawas atau *controlling* terhadap kondisi pasien.
b. Perawat sebagai manajer khusus. Dalam artian perawat mengelola dan mengkolaborasikan tindakan dengan anggota keluarganya dan penyedia layanan sosial guna meningkatkan pencapaian kualitas pelayanan, dengan fungsi perawat sebagai berikut:
    1. Mengidentifikasi kebutuhan pasien dan keluarga
    2. Menyusun rencana pelayanan
    3. Mengkoordinasikan dengan tim kesehatan

c. Perawat sebagai pemberi asuhan keperawatan akan memberikan pelayanan secara langsung dan mengevaluasi bentuk pelayanan yang diberikan oleh anggota keluarga atau perawat, adapun fungsi perawat sebagai berikut:
    1. Melakukan pengkajian secara komprehensif
    2. Menegakkan diagnosa atau masalah keperawatan
    3. Menyusun rencana atau intervensi keperawatan
    4. Melakukan implementasi keperawatan
    5. Melakukan observasi terhadap kondisi pasien
    6. Membantu pasien dalam mengembangkan perilaku koping yang efektif
    7. Melibatkan keluarga dalam proses perawatan pasien
    8. Membimbing keluarga dalam pemeliharaan kesehatan
    9. Melakukan evaluasi terhadap asuhan keperawatan
d. Perawat sebagai pendidik atau edukator. Perawat mengajarkan kepada keluarga terkait konsep sehat sakit dan bertindak sebagai pemberi informasi kesehatan, dengan fungsi perawat sebagai berikut:
    1. Mengidentifikasi pasien dan keluarga
    2. Memilih metode dan menyiapkan materi
    3. Menyusun rencana kegiatan
    4. Melaksanakan pemberian pendidikan kesehatan bagi keluarga dan pasien.
e. Perawat juga sebagai kolaborator dengan tenaga kesehatan yang lain. selain itu, perawat melakukan tindakan dengan mengkolaborasikan antara perawat

dengan keluarga pasien serta dalam merencanakan pelayanan, dan dengan fungsi perawat sebagai berikut:

1. Melakukan kerjasama dengan tim lain
2. Melakukan kerjasama dengan faskes lain
3. Melakukan tindakan dengan mengkolaborasikan keluarga pasien .

2.2.7 Aspek-aspek dalam Meningkatkan *Home Care*

Ada beberapa aspek yang dapat meningkatkan kualitas pelayanan *home care* (Fahrepi, Rate and Hadi, 2019) yaitu sebagai berikut:

a. Kehandalan (*reliability*)

Menurut (Nugroho, Suryono and Wiseno, 2020) bahwa keandalan perawat bisa meliputu indikator sederhana dalam pelaksanaan prosedur tindakan, serta menetapkan jadwal dan memberikan pelayanan dengan tepat dan cepat. Kehandalan merupakan kemampuan untuk memberikan pelayanan secara akurat dan terpercaya.

b. Daya tanggap (*responsiveness*)

Monitoring, pemberian edukasi kepada pasien dan keluarga, serta konsultasi merupakana bagian dari daya tanggap perawat. Hal tersebut meliputi perawat mendengarakan keluh kesah pasien dengan baik, serta menyampaikan informasi terkait kondisi pasien dengan menyampaikan secara jelas dan tindakan dilakukan sesuai dengan kebutuhan.

c. Jaminan (*assurance*)

Jaminan merupakan keterampilan dan pengetahuan yang dimiliki perawat untuk melakukan pelayanan. Jika penerapan edukasi dan pengkajian tidak

dilakukan dengan baik maka pasien tidak akan merasakan jaminan dari pelayanan yang telah diberikan.

d. Kesopanan (*courtesy*) juga termasuk jaminan yang meliputi keramahan, perhatian, dan sikap perawat kepada pasien.

e. *Creadibility* atau kreabilitas, biasanya meliputi dengan hal-hal yang berhubungan dengan rasa kepercayaan kepada pelayanan, seperti reputasi, prestasi, dan sebagainya.

f. Bukti langsung

Pasien diberikan fasilitas khusus untuk menunjang pelayanan yang berarti bahwa instansi pelayanan tidak menyediakan fasilitas atau sarana prasarana, sehingga tidak terlihat bagaimana penampilan para staf dalam pemberian pelayanan. Bukti langsung atau bukti fisik menunjukkan eksistensi kemampuan dari penampilan institusi serta staf, kemampuan sarana, prasarana, serta lingkungan disikitar pada pihak internal. Dalam proses monitoring pelayanan keperawatan *home care* harus dilengkapi dnegan aplikasi khusus sebagai bukti fisik yabg merupakan fasilitas dalam menunjang pelayanan (Asmirajanti, 2021).

g. Kepedulian (*emphaty*)

Kepercayaan pasien dan keluarga menjadi salah satu indikator untuk meningkatkan kualitas pelayanan. Dengan menggunakan komunikasi terapeutik yang baik serta melakukan proses monitoring dan konsultasi baik secara langsung ataupun tidak langsung, bisa membuat pasien dan keluarga merasakan perhatian khusus dari pelayanan keperawatan tersebut.

2.3 **Konsep *Telenursing***

2.3.1 Definisi *Telenursing*

Teknologi informasi terus mengalami perkembangan, terlebih di dunia kesehatan kini semakin canggih. Dengan semakin berkembangnya teknologi informasi di dunia kesehatan khususnya di bidang keperawatan, kini muncul sebuah inovasi untuk membantu permasalahan kesehatan yang ada yaitu dengan menerapkan bentuk pelayanan berbasis *telenursing*. *Telenursing* merupakan upaya dalam penggunaan teknologi informasi di bidang keperawatan dalam memberikan asuhan keperawatan pada pasien dengan jarak jauh antara pasien dengan perawat, dan sesama perawat (Padila *et al.*, 2018). *Telenursing* merupakan bagian dari *telehealth* atau *telemedecine. Telemedicine* merupakan salah satu bentuk strategi pencegahan penyebaran virus Covid-19 di dunia karena, *telemedicine* sebagai penyedia layanan kesehatan dengan menggunakan teknologi komunikasi elektronik. Pasien, keluarga pasien, dan tenaga kesehatan tidak perlu bertemu secara langsung di dalam suatu tempat atau layanan kesehatan namun tetap melakukan interaksi suatu aplikasi (Lubis, 2021).

Telenursing juga merupakan sistem pemberian pelayanan dibidang keperawatan yang efektif, karena dapat membuat pasien lebih mudah untuk mendapatkan informasi dan dapat meningkatkan kemampuan pasien dan keluarga untuk merawat dirinya (Jayani and Ruffaida, 2020). *Telenursing* dianggap sebagai teknologi kesehatan yang canggih untuk kesehatan profesional khususnya perawat dalam bidang komunikasi, sehingga dapat mempengaruhi beberapa faktor seperti waktu interaksi dengan pasien dan keluarga, tingkat kepuasan pasien yang terlibat

di dalam interaksi, dan batasanyang terkait dengan komunikasi nonverbal (Yulvi Azni, 2020). *Telenursing* dapat membantu pasien dan keluarga yang ikut berpartisipasi secara aktif di dalam perawatan pasien terutama *self-management* untuk pasien yang menderita penyakit kronik dan dapat mengurangi waktu lama pasien dalam masa perawatan (*length of stay*). Sistem informasi berbasis *telenursing* ini dapat membantu perawat dalam memberikan informasi serta dukungan bagi pasien yang akurat secara online.

2.3.2 Kebijakan *Telenursing*

Perkembangan *telenursing* di berbagai negara sudah terbukti dan efisien dalam mengatasi kendala jarak bagi pasien dan dapat memberikan informasi tentang perawatan kesehatan. Penggunaan *telenursing* di Indonesia masih minim dan sudah terdapat payung hukum. Telah dibuat peraturan kesehatan yang diatur dalam Undang-Undang no 20 tahun 2019 tentang penyelenggaraan *telemedecine* antar fasilitas kesehatan (Kemenkes RI, 2021) dengan hasil keputusan Menteri Kesehatan RI dengan Nomor HK. 01.07/MENKES/4839/2021 tentang pedoman pelayanan kesehatan melalui *telemedecine* pada masa pandemi Covid-19. *Telenursing* merupakan bagian dari *telemedecine*. Sehingga penerapan *telenursing* diberikan lebih menekankan pemberian pelayanan kesehatan dan fasilitas kesehatan di daerah terpencil dan daerah yang lokasinya jauh dari pelayanan kesehatan. Namun di dalam peraturan yang telah dibuat oleh Menteri Kesehatan Nomor HK 02.01/Menkes/303/2020 tentang penyelenggaraan pelayanan kesehatan melalui pemanfaatan teknologi informasi dan komunikasi dalam rangka pencegahan penyebaran virus Covid-19, belum diperhatikan dalam pemberian

kewenangan terhadap profesi profesional seperti perawat. Dimana peran perawat turut serta dalam memaksimalkan pelayanan kepada pasien dimasa pandemi Covid-19.

Adapun kebijakan alternatif untuk mengoptimalkan *telemedecine* atau *telenursing* melalui peran perawat dalam memberikan pelayanan kepada masyarakat. Alternatif kebijakan dapat berupa sebagai berikut:

a. Peraturan tambahan yang telah dikeluarkan oleh menteri kesehatan Nomor HK 02.02/Kemenkes/303/2020 tentang penyelenggaraan pelayanan kesehatan melalui pemanfaatan teknologi informasi dan komunikasi dalam rangka pencegahan penyebaran virus Covid-19, yang secara khusus telah mengatur penyelenggaraan pelayanan kesehatan berbasis *online* dengan *telenursing* di semua pelayanan kesehatan pada masa pandemi. Penyelenggaraan ini mengacu pada pelaksanaan peran perawat sesuai dengan kewenangannya.
b. Adanya pengembangan aturan standart yang telah dibuat oleh Persatuan Perawat Nasional Indonesia (PPNI) terkait lingkup kewenangan perawat dalam memberikan pelayanan dengan menggunakan teknologi informasi *telenursing* dimasa pandemi. Standart PPNI terkait dengan aspek legal, kode etik, protokol kesehatan, dan panduan penggunaan *telenursing*.

2.3.3 Prinsip-prinsip *Telenursing*

Menurut (Bagus *et al.*, 2015) adapun prinsip-prinsip dalam pengaplikasian *telenursing* yaitu sebagai berikut:

a. Untuk meningkatkan kualitas pelayanan dalam memberikan asuhan keperawatan pada pasien.

b. Untuk mengurangi pemberian informasi yang tidak perlu.

c. Untuk menjaga kerahasiaan pasien atau privasi pasien.

d. Tidak mengubah sifat dasar asuhan keperawatan.

2.3.4 Kekurangan dan kelebihan *Telenursing*

Menurut (Bagus *et al.*, 2015) dalam penggunaan *telenursing* pasti memiliki kekurangan dan kelebihannya yaitu:

a. Kekurangan *Telenursing*

Penggunaan *telenursing* di Indonesia masih belum berjalan dengan baik dikarenakan adanya keterbatasan sumber daya manusia, ketebatasan sarana dan prasarana. Apaun kekurangan dari penggunaan telenursing yaitu sebagai berikut:

1. Kekhawatiran tidak adanya interaksi langsung antara perawat dengan pasien, karena akan mengurangi kualitas pelayanan kesehatan
2. Kegagalan teknologi yang dapat meningkatkan resiko terhadap keamanan dan kerahasiaan dokumen pasien.
3. Keterbatasan penggunaan *telenursing* bagi masyarakat yang minim informasi dengan peralatan yang sederhana seperti *handphone*.
4. Kegagalan teknologi seperti gangguan koneksi jaringan sehingga internet terputus bisa karena gangguan cuaca atau *signal*.

b. Kelebihan *Telenursing*

Adapun kelebihan dari penggunaan *telenursing* yaitu:

1. Mudah diakses bagi pasien dan keluarga yang mengalami masalah jarak.

2. Menjadi solusi untuk perawatan ditengah pandemi Covid-19 dikarenakan harganya murah.
3. Dapat memberikan kenyamanan bagi pasien.
4. Dapat membuat pelayanan menjadi efektif dan efisien dalam hal *monitoring, evaluating,* dan *education*.
5. Meningkatkan rasa aman (*safety*) bagi pasien dan keluarga.

2.3.5 Pengaplikasian *Telenursing*

Pelayanan berbasis *telenursing* dapat diaplikasikan dengan menggunakan *setting area* di keperawatan, dan bisa berbentuk *ambulatory care*, *call centers*, *home visit* atau *home care* berbasis *telenursing*, bagian pasien rawat jalan dan bagian kegawatdaruratan (Padila *et al.*, 2018). *Telenursing* juga dapat digunakan dalam berbagai ragam yang bervariasi, bisa meliputi:

a. *Telephone* (landline dan telepon seluler),
b. Personal Digital Assistants (PDAs),
c. Mesin faksimili,
d. Dengan internet by email, video dan *audioconferencing*, teleradiologi, sistem informas komputer bahkan melalui *telerobotics*.

Di dalam pengaplikasian *telenursing*, terdapat keterampilan interpersonal yang sangat penting untuk mengamati dan mengidentifikasi kondisi fisik serta kondisi mental pasien secara lebih jauh dan memiliki kemampuan khusus bagi perawat dengan mengikuti pelatihan secara berkala. Penggunaan *telenursing* juga bisa menggunakan teknologi berupa saluran elektromagnetik (gelombang magnetik, radio dan optik) dalam menstransmisikan *signal* (Sudaryanto, 2011).

Menurut (Kemenkes RI, 2021) adapun kegiatan layanan kesehatan melalui *telemedecine* atau *telenursing* yaitu meliputi:

a. Konsultasi Komunikasi, Informasi, dan Edukasi (KIE)

   Merupakan suatu bentuk upaya promosi di bidang kesehatan untuk mencari seputar informasi gaya hidup, diit, informasi kebugaran, dan lain-lain.

b. Konsultasi klinis

   Konsultasi klinis biasanya diberikan oleh dokter atau perawat yang meliputi:

   1. Anamnesa, biasanya berisi tentang keluhan utama pasien, keluhan penyerta, riwayat penyakit yang di derita saat ini, penyakit lain atau fktor lain, dan informasi terkait lainnya yang dinyatakan oleh dokter atau perawat kepada pasien dan keluarga secara daring.
   2. Pemeriksaan fisik yang dilakukan secara audio visual
   3. Pemberian anjuran atau nasihat dapat diberikan kepada pasien terkait yang dibutuhkan berdasarkan hasil pemeriksaan. Pemberian anjuran bisa berupa pemeriksaan kesehatan lanjutan ke fasilitas pelayanan kesehatan.
   4. Penegakan diagnosa berdasarkan hasil pemeriksaan fisik yang telah dilakukan.
   5. Penatalaksanaan dan pengobatan pasien dilakukan setelah dilakukan penegakan diagnosa.
   6. Penerbitan surat rujukan untuk pemeriksaan lebih lanjut ke laboratorium atau fasilitas pelayanan kesehatan lain berdasarkan penatalaksanaan pasien.

c. Pemeriksaan penunjang

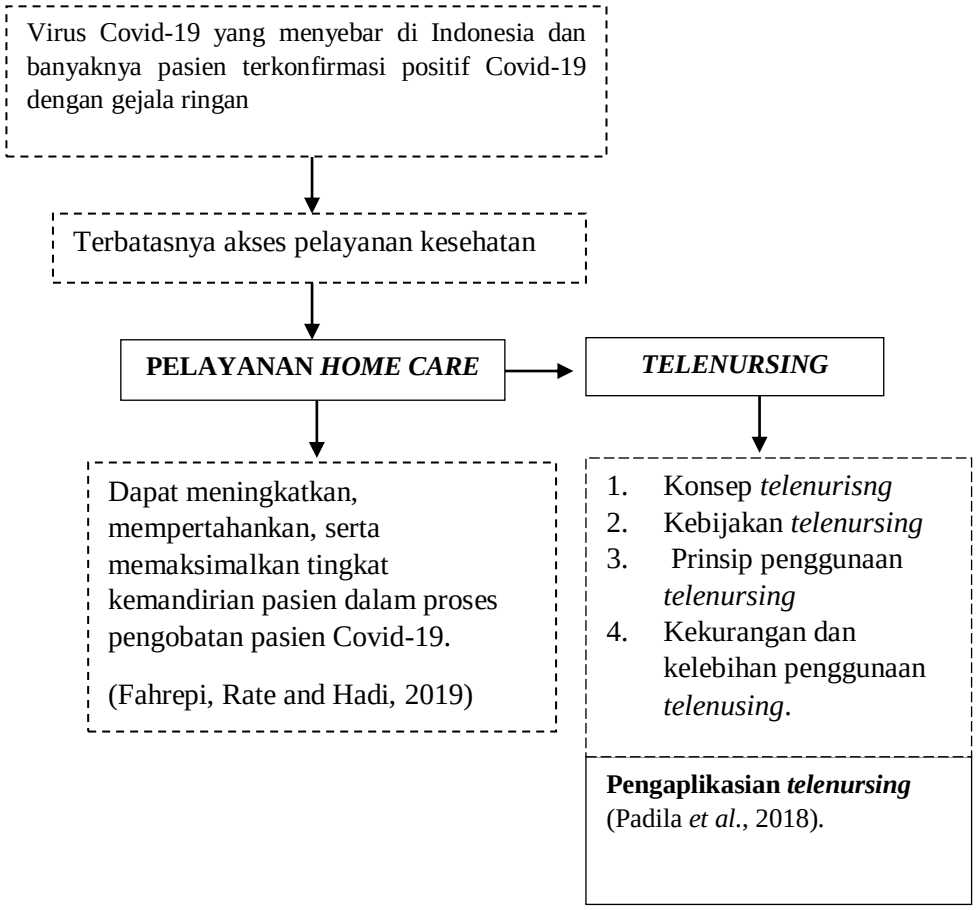
Pemeriksaan penunjang ialah salah satu kegiatan yang dilakukan dalam rangka penegakan diagnosa kondisi pasien. Pemeriksaan penunjang berupa pemeriksaan di laboratorium dengan menggunakan aplikasi. Pemeriksaan laboratorium melalui *telemedecine* atau *telenursing* bisa dilakukan atas permintaan dokter ataupun pasien. Dan petugas laboratorium juga bisa melakukan *homevisit* untuk pengambilan sampel.

d. Pelayanan telefarmasi

Pelayanan telefarmasi digunakan di bidang farmasi untuk pelayanan resep baik secara elektronik, biasanya dokter akan berkoordinasi dengan apoteker.

2.4 **Kerangka Teori**

Gambar 2.4 Kerangka Teori



Keterangan :

---------- = Tidak diteliti

———— = Diteliti

BAB 3
METODOLOGI PENELITIAN

3.1 Strategi Pencarian Literatur

3.1.1 Protokol dan Registrasi

Rangkuman menyeluruh berbentuk *literatur review* mengenai penerapan *telenursing* terhadap peningkatan kualitas pelayanan *home care* di masa pandemi Covid-19. Protokol dan evaluasi dari *literatur review* adan menggunakan PRISMA *checklist* untuk menentukan penyeleksian studi yang telah ditemukan dan disesuaikan dengan tujuan dari *literatur review.*

3.1.2 *Database* Pencarian

Pada bagian ini memuat penjelasan waktu pencarian artikel dan database yang digunakan untuk pencarian literatur. Database yang digunakan dalam penyusunan literature review minimal sebanyak empat database akademik dengan kriteria artikel yang ditinjau dalam rentan waktu 5 tahun terakhir. Pencarian literatur dilakukan pada bulan November-Desember 2021. Data yang digunakan dalam penelitian ini merupakan data sekunder yang diperoleh bukan dari pengamatan langsung tetapi dari peneliti-peneliti terdahulu. Sumber data sekunder yang di dapat berupa artikel jurnal bereputasi baik nasional maupun internasional dengan tema yang sudah ditentukan. Pencarian literatur dalam *literatur review* ini menggunakan empat database yaitu *ProQuest, Google Scholar, PubMed*, dan *Science Direct*.

3.1.3 Kata Kunci

Pencarian artikel atau jurnal menggunakan kata kunci *boolean operator* (DAN, ATAU TIDAK, atau DAN TIDAK) untuk memperluas dan menspesifikasikan pencarian hasil pencarian, sehingga artikel mudah ditemukan. Kata kunci *Literatur review* disesuaikan dengan *Medical Subject Heading (MesH)* terdiri dari sebagai berikut :

3.1 Tabel Kata Kunci

Telenursing	*Home Care*	Kualitas Pelayanan	COVID-19
AND	OR	AND	AND
Telehealth	*Homevisit*	Pelayanan	COVID-19
AND			
Telemedecine			

3.2 Kriteria Inklusi dan Eksklusi

Strategi yang digunakan untuk mencari artikel menggunakan PICOS *framework,* yang terdiri dari:

a. *Population/Problem* merupakan populasi atau masalah yang akan dianalisis sesuai dengan tema yang sudah ditentukan dalam literature review
b. *Exposure* merupakan faktor yang mempengaruhi kondisi populasi dalam artikel yang akan dilakukan *literatur review*
c. *Comparation* merupakan penatalaksanaan atau intervensi lainnya yang digunakan sebagai pembanding, namun jika tidak ada bisa menggunakan kelompok kontrol pada artikel yang dipakai

d. *Outcome* merupakan hasil atau luaran yang diperoleh pada studi terdahulu yang sesuai dengan tema yang sudah ditentukan dalam literature review
e. *Study design* merupakan desain penelitian yang digunakan dalam artikel-artikel yang akan direview

Tabel 3.2 Kriterian Inklusi dan Eksklusi dalam *Literatur Review*

Kriteria	**Inklusi**	**Eksklusi**
Population	Tenaga kesehatan, pasien	Bukan tenaga kesehatan, dan bukan pasien
Exposure	*Home care* berbasis *telenursing*	Bukan *home care* berbasis *telenursing*
Outcomes	Analisis bentuk penerapan *telenursing* terhadap peningkatan kualitas pelayanan *home care*	Tidak menjelaskan hasil analisis dari penerapan *telenursing* terhadap peningkatan kualitas pelayanan *home care*
Study Design	Kuantitatif,,*prepost experimental*, kualitatif, dan deskriptif	*Sytematic review*
Publication Years	2016-2021	Sebelum tahun 2016
Language	Bahasa Indonesia dan Bahasa Inggris	Bahasa selain bahasa Inggris dan Bahasa Indonesia

3.3 Seleksi Studi dan Penilaian Kualitas

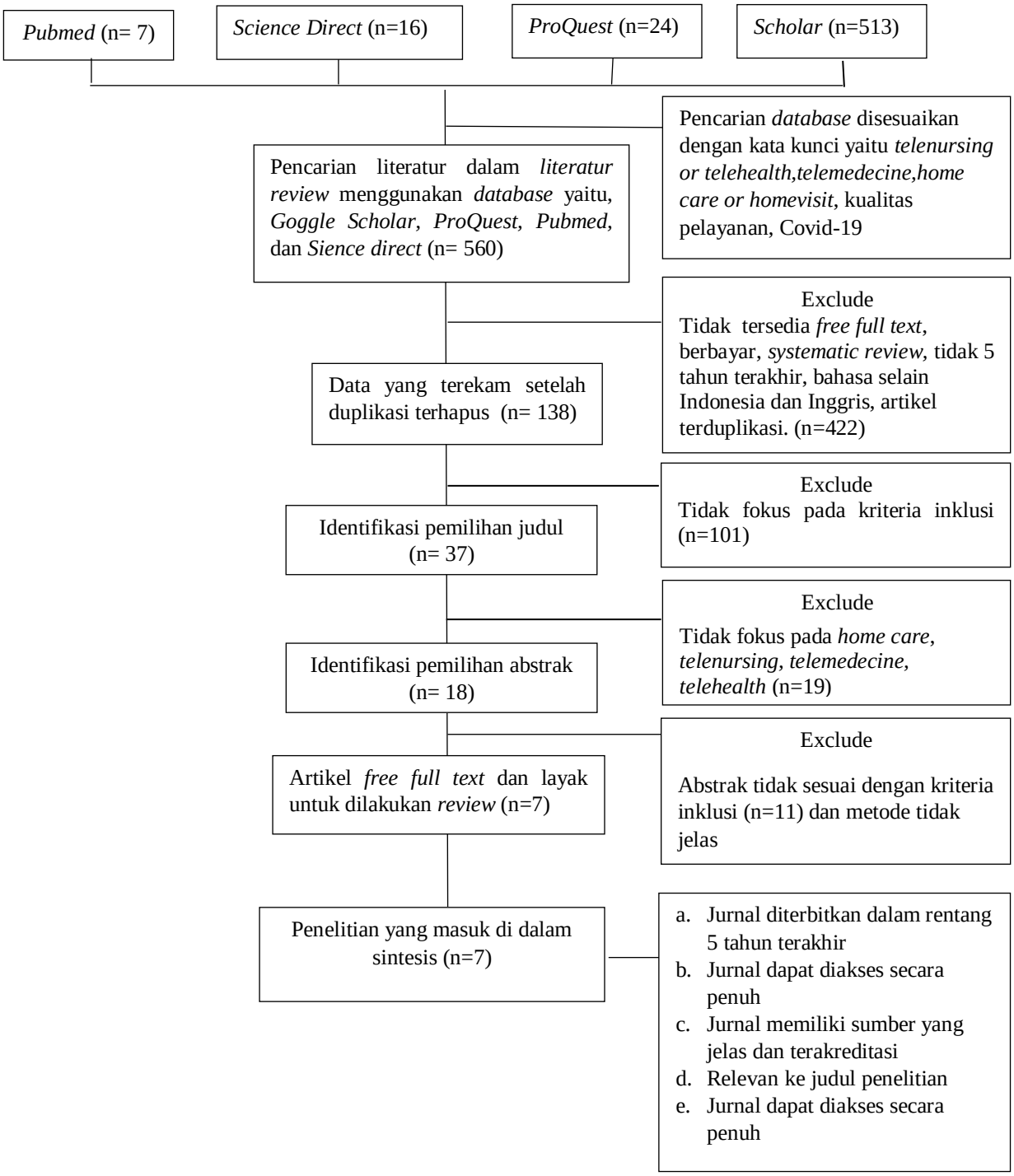
Pemilihan studi menggunakan *software* bibliografi seperti *Mendeley*. Langkah awal yang perlu dilakukan adalah melakukan *screening* abstrak dan diikuti dengan *screening* pada bagian teks lengkap. Artikel atau studi yang tidak relevan dan tidak sesuai judul penelitian dikeluarkan dari artikel terpilih. Kualitas studi dilakukan oleh

penulis dengan dibantu oleh pembimbing dengan menggunakan beberapa penilaian sebagai berikut:

a. *Currency* yaitu terkait waktu publikasi dan kebermaknaan hasil penelitian dari studi tersebut untuk saat ini
b. *Relevance* yaitu terkait kepentingan informasi yang diberikan oleh studi tersebut terhadap pertanyaan dari penulis
c. *Authority* yaitu terkait identitas author seperti nama, institusi, ataupun artikel berasal dari *peer review journal*
d. *Accuracy* yaitu menilai apakah informasi dalam studi dapat dipercaya dengan sitasi yang memadai serta melihat apakah ada kesalahan dalam penulisan
e. *Purpose* yaitu menilai studi berdasarkan tujuan penelitiannya apakah bersifat independen ataukah bertujuan menjual produk atau ide

Uraian pada bagian ini juga menyebutkan jumlah studi yang digunakan dan yang tidak digunakan sebagai bahan dalam penyusunan naskah literatur review (minimal menggunakan 5 artikel dari 5 sampai 10 tahun terakhir)

3.1.1 Hasil Pencarian dan Seleksi Studi



Gambar 3.1 Diagram *flow literature review* berdasarkan PRISMA 2009 (Polit and Beck, 2013)

BAB 4

HASIL DAN ANALISA

4.1 Hasil

4.1.1 Karateristik Studi

Hasil pencarian artikel pada penelitian berdasarkan topik *literatur review* "Penerapan *Telenursing* Terhadap Peningkatan Kualitas Pelayanan *Homecare* pada Pasien Covid-19" yang sesuai dengan kriteria inklusi di dapatkan tujuh artikel. Berdasarkan analisa yang di lakukan pada tujuh artikel dimana design penelitiannya menggunakan *one group pretest posttest*, deskriptif fenomenologis, wawancara, dan *pretest posttest experimental*. Secara keseluruhan artikel membahas tentang penerapan *telenursing* pada pelayanan *homecare.* Dari tujuh artikel tersebut, menunjukkan hasil bahwa keseluruhan artikel memiliki pengaruh penerapan *telenursing* terhadap pelayanan *homecare*. Berikut hasil analisis artikel yang ditampilkan dalam bentuk tabel sebagai berikut :

Tabel 4.1 Karateristik Studi

No	Karateristik Studi	Frekuensi	Presentase
1.	**Tahun Publikasi**		
	1. 2017	1	14%
	2. 2020	3	43%
	3. 2021	3	43%
	Total	7	100%
2.	**Sumber Jurnal**		
	1. Jurnal Internasional	6	86%
	2. Jurnal Nasional	1	14%
	Total	7	100%

3.	**Design Penelitian**		
	1. *One group pretest posttest*	1	14%
	2. Deskriptif fenomenologis	2	29%
	3. Wawancara	3	43%
	4. *Pretest posttest experimental*	1	14%
	Total	7	100%

Tabel 4.2 Hasil Pencarian Artikel

NO	Penulis dan Tahun Penerbit	*Database*	Judul	Design Penelitian, Sampel, dan Analisis	Hasil	Kesimpulan
1.	Rygg, Brataas and Nordtug (2021)	*Pubmed*	Oncology Nurses' Lived Experiences of Video Communication in Follow-up Care of Home Living Patients: A Phenomenological Study in Rural Norway	Design penelitian ini menggunakan pendekatan deskriptif fenomenologis, dengan pengumpulan data menggunakan metode wawancara dengan jumlah sampel yang disesuaikan dengan kriteria inklusi yang menggunakan purposive sampling. Analisis data berfokus pada esensi dari pengalaman langsung perawat ON.	Hasil penelitian menunjukkan perawat ON menyediakan VC sebagai suplemen dalam kegiatan tindak lanjut perawatan tradisonal dengan melakukan edukasi dan konsultasi kepada pasien.	Penggunaan VC dapat berkontribusi dalam hal pemberian perawatan karena mudah diakses dan juga dapat mengurangi waktu perjalanan perawat ON untuk kunjungan rumah. Penggunaan *telenursing* tetep harus memperhatikan aspek-aspek perawat seperti kehandalan perawat, bukti langsung, jaminan perawat, dan kerahasiaan pasien.
2.	Kord *et al*., (2021)	*Pubmed*	Telenursing home care and COVID-19 : a qualitative study	Penelitian ini menggunakan penelitian kujalitatif dengan metode deskriptif fenomenologis. Partisipan dipilih menggunakan metode purposive sampling dan mempertimbangkan kriteria inklusi dan eksklusi. Pengumpulan data menggunakan metode wawancara dengan aplikasi Skype dan telepon.Analisis data dilakukan dengan menggunakan metode tujuh langkah Colaizzi.	Hasil penelitian ini mengungkapkan penggunaan telenursing secara keseluruhan peserta menggunakan *smartphone* untuk melakukan kegiatan edukasi dan konsultasi antara perawat dan pasien.	Penggunaan *telenursing* dapat berkontribusi karena cepat dan serius di bidang perawatan pasien, pendidikan kesehatna, dukungan, tindak lanjut, dan pemberian konselling.

3.	Permana, Sindu, and Pageh (2021)	*Science Direct*	Developing Home Health Care Application for Patient During the Covid-19 Pndemic	Penelitian ini menggunakan penelitian deskriptif kualitatif. Pengumpulan data diperoleh dari observasi, wawancara, dengan mengggunakan suatu aplikasi *smartphone*. Wawancara dilakukan dengan jumlah 10 responden yang terdidri dari dokter, perawat, dan pasien. Pengembangan aplikasi layanan kesehatan ini menggunakan metode Agile.	Dalam pengembangan aplikasi dapat diakses melalui *smartphone* dengan menginstall aplikasi *Homecare*. Dengan ini perawat tetap dapat menggunakan *telenursing* dengan memonitoring pasien, konsultasi, dan juga memberikan edukasi.	Dengan penggunaan aplikasi ini segala sesuatu dapat dilakukan dirumah mulai dari pemesanan layanan, monitoring, edukasi, dan juga konsultasi.
4.	Hagi-Pedersen, Kronborg and Norlyk (2021)	*Science Direct*	Video Consultation as Nursing Practice During early in-Home Care for Premature Infants and Families Viewed from The Families 'Homes'	Design penelitian ini menggunakan studi kualitatif dengan pengamatan terfokus yang di dukung oleh konsultasi video. Data dikumpulkan melalui sembilan kunsultasi video antara perawat dan keluarga dengan analisis induktif berdasarkan pendekatan Granehelm dan Lundman (2004).	Studi ini berfokus pada pelatihan dalam pemberian komunikasi video guna meningkatkan potensi konsultasi video antara perawat dan keluarga pasien. Dengan adanya video konsultasi, dapat meningkatkan pengetahuan pasien.	Konsultasi video dapat memberikan kemudahan akses dan juga menyenangkan bagi pasien yang melakukan perawatan dirumah. Pasien dapat melakukan konsultasi dengan perawat melalui *smartphone*.
5.	Wulandari (2017)	*Google Scholar*	Pengaruh Aplikasi Telehomecare Terhadap Pengetahuan Penderita Tuberculosis Paru Tentang Penularan Penyakit Tuberculosis	Design penelitian ini menggunakan *one group pretest posttest design* dengan jumlah sampel 14. Data yang diperoleh dianalisis menggunakan wilcoxon signed rank test, hipotesa diterima dengan nilai $p<0,05$	Hasil analisa data peningkatan pengetahuan *pre test* dan *post test* dengan menggunakan Wilcoxon Signed Rank Test dengan interval kepercayaan 95% didapat nilai	Terdapat pengaruh dari penerapan *telehomecare* terhadap tingkat pengetahuan pasien

					p=0,02 dan hipotesa penelitian diterima yaitu ada perbedaan pengetahuan sebelum dan sesudah diberikan edukasi melalui *telehomecare*	
6.	May *et al.*, (2021)	*Proquest*	Challenges in Currect Nursing Home Caree in Rural Germany and How They Can be Reduced by Telehealth –an Exploratory Qualitative pre-post study	Design studi penelitian menggunakan studi pra-pasca eksplorasi kualitatif . Pengumopulan data menggunakan wawancara dengan total peserta 13, menggunakan konsultasi video. Analisis data dilakukan secara paralel oleh dua peneliti.	Studi menjelaskan bahwa setelah implementasi, komunikasi difasilitasi setelah pengenalan slot waktu yang di tentukan merupakan kunci utama untuk konsultasi video.	Penggunaan konsultasi video dalam pemberian asuhan keperawatan jangka panjang dapat mengurangi beban perawat dan juga menghemat biaya perjalanan bagi pasien dan perawat.
7.	Zahoransky and Lape (2020)	*Proquest*	Telehealth and Home health Occupational Therapy: Clients With and Perception of Occupational Performance	Studi penelitian ini menggunakan pretest-posttest kuasi eksperimental. Pengambilan sampel disesuaikan dengan kriteria inklusi dan eksklusi.	Hasil penelitian ini berfokus pada penggunaan *telehealth* melalui berbagai perangkat seperti tablet, ipad, *smartphone*, dan laptop dengan temuan yang diukur melalui intervensi.	Penelitian ini menjelaskan terkait kenyamanan peserta tentang penggunaan *telehealth* sangat efektif dalam menghemat waktu perjalanan, serta lebih.

4.1.2 Karateristik Responden

Karateristik responden pada *literature review* ini meliputi jenis kelamin responden, peserta, usia dan bentuk *telenursing* responden sebagaimana pada tabel 4.3 yaitu :

Tabel 4.3 Karateristik Responden

Penulis dan Tahun Penerbit	Karateristik Berdasarkan Peserta	Karateristik Berdasarkan Bentuk *Telenursing*
(Rygg, Brataas and Nordtug, 2021)	Mendiskripsikan bahwa karateristik peserta yaitu Perawat Onkologi = 4 orang Pasien Covid-19 = 8 orang Total = 12 orang peserta	Penggunaan *telenursing* pada artikel ini secara keseluruhan menggunakan *smartphone* dengan *video call*
(Kord *et al.*, 2021)	Mendiskripsikan bahwa karateristik peserta yaitu pasien dengan penyakit Covid-19 dengan jumlah 20 orang	Penggunaan *telenursing* pada artikel ini secara keseluruhan menggunakan *smartphone* dengan menginstall aplikasi Skype
(Permana, Sindu and Pageh, 2021)	Mendeskripsikan bahwa karateristik peserta terdiri dari 10 orang yaitu dokter, perawat, dan pasien	Penggunaan *telenursing* pada artikel ini secara keseluruhan responden menggunakan *smartphone*
(Hägi-Pedersen, Kronborg and Norlyk, 2021)	Mendeskripsikan bahwa karateristik peserta yaitu keluarga pasien sebanyak 5 orang	Penggunaan *telenursing* pada artikel ini secara keseluruhan menggunakan *smartphone* melalui aplikasi terenskripsi CareRoom dan LiveCare
(Wulandari, 2017)	Mendiskripsikan bahwa karateristik peserta yaitu pasien dengan jumlah responden 14 orang	Penggunaan *telenursing* pada artikel ini menggunakan kecanggihan teknologi yang ada seperti yaitu *smartphone*, faximail, dan teleradiologi.
(May *et al.*, 2021)	Perawat = 9 Dokter = 7 Asisten Medis = 5	Bentuk penggunaan *telenursing* pada artikel ini secara keseluruhan menggunakan *smartphone* melalui video konsultasi
(Zahoransky and Lape, 2020)	Karateristik peserta yaitu pasien dengan jumlah responden 9 orang	Bentuk penggunaan *telenursing* menggunakan berbagai perangkat teknologi meliputi *smartphone* , tablet iPad, dan laptop.

Karateristik responden berdasarkan peserta dari 7 artikel diperoleh rata-rata peserta yaitu tenaga medis seperti dokter, perawat, dan asistem medis serta pasien dengan penyakit Covid-19 yang memilih untuk melakukan perawatan dirumah. Karateristik responden dari 7 artikel berdasarkan bentuk penggunaan *telenursing* diperoleh secara keseluruhan menggunakan *smartphone* dengan *video call* dalam penggunaannya, namun 1 artikel juga menjelaskan bahwa tidak hanya menggunakan *smartphone* tetapi juga menggunakan tablet iPad, dan laptop untuk mengakses komunikasi dengan pasien. Berdasarkan bentuk penggunaan *telenursing* bahwa asuhan keperawatan dapat di berikan melalui jarak jauh dan sangat mudah sekali untuk dikses bagi pasien maupun tenaga medis.

4.2 Analisa

4.2.1 Mengidentifikasi jenis *telenursing*

Hasil *review* dari tujuh artikel yang diambil, melalui 4 *database* tentang bentuk penerapan *telenursing* dapat dilihat pada tabel berikut:

Tabel 4.4 Jenis *Telenursing*

NO	Penulis dan Tahun Terbit	Hasil Temuan
1.	(Rygg, Brataas and Nordtug, 2021)	Bentuk penerapan *telenursing* dengan menggunakan media konferensi video yang berbasis internet dengan *Video Call* (VC) dalam pemberian perawatan lanjutan.
2.	(Kord *et al.*, 2021)	Penelitian ini dilakukan dengan mewawancarai pasien dengan jarak jauh menggunakan aplikasi Skype, *video call*, dan via telepon yang berdasarkan prefensi pasien.
3.	(Permana, Sindu and Pageh, 2021)	Pelayanan *homecare* dilakukan oleh rumah sakit dan klinik dengan menggunakan aplikasi dan formulir chatting yang berbasis *smartphone* untuk memberikan perawatan intensif kepada masyarakat di rumah.
4.	(Hägi-Pedersen, Kronborg and Norlyk, 2021)	Penerapan *telenursing* dilakukan dengan konsultasi video melalui aplikasi CareRoom dan Live Care yang telah disediakan oleh ViewCare a/s Seborg. Sistem dengan antar muka yang menyerupai FaceTime atau Skype. Konsultasi direkam selama 10-28 menit.

5.	(Wulandari, 2017)	Dalam pemberian asuhan keperawatan,pemberian edukasi, dan *followup* kepada pasien diberikan melalui telepon seluler.
6	(May *et al.*, 2021)	Bentuk intervensi *telehealth* menggunakan konsultasi video karena memiliki potensi untuk mempercepat akses perawatan jarak jauh.
7.	(Zahoransky and Lape, 2020)	Pada penelitian ini peserta menggunakan perangkat teknologi seperti laptop, Ipad, *smartphone*, dan tablet untuk melakukan kegiatan intervensi *telehealth*.Semua peserta diintruksikan tentang penggunaan platform dan lingkungan rumah untuk memastikan bandwidth atau layanan internet memadai.

Berdasarkan tabel 4.4 hasil analisa 7 artikel menunjukkan bahwa jenis-jenis *telenursing* menggunakan kecanggihan teknologi yang ada yaitu seperti *smartphone* , iPad, dan laptop. Namun, secara keseluruhan artikel menggunakan *smartphone* dengan cara *video call*, video konsultasi, dan juga menginstall suatu aplikasi seperti Skype, LiveCare dalam memberikan perawatan kepada pasien.

4.2.2 Gambaran Bentuk Pelayanan *Homecare* dengan *Telenursing*

Hasil *review* dari tujuh artikel yang diambil, melalui 4 *database* tentang pelayanan *homecare* berbasis *telenursing* dapat dilihat pada tabel berikut:

Tabel 4.5 Pelayanan *Homecare* Berbasis *Telenursing*

NO	Penulis dan Tahun Terbit	Hasil Temuan
1.	(Rygg, Brataas and Nordtug, 2021)	Bentuk pelayanan *homecare* dengan *telenursing* yaitu dengan melakukan tindakan konsultasi dan edukasi. Namun dengan penggunaan *telenursing* pada pelayanan *homecare* tetap memperhatikan kerahasiaan pasien, jaminan, dan tindak lanjut pasien.
2.	(Kord *et al.*, 2021)	Pada pelayanan *homecare* yang berbasis *telenursing* perawat memberikan pendidikan kesehatan kepada pasien dengan mudah dan tepat yang disesuaikan dengan kebutuhan pasien seperti tentang pengobatan pasien, diet khusus, promosi kesehatan, dan juga pasien bisa berkonsultasi dengan perawat kapan saja.
3.	(Permana, Sindu and Pageh, 2021)	Pelayanan *homecare* berbasis teknologi dapat dikembangkan untuk memberikan pelayanan seperti *care*, edukasi, monitoring, dan konsultasi.

4.	(Hägi-Pedersen, Kronborg and Norlyk, 2021)	Pelayanan *homecare* berbasis konsultasi video, dapat memberikan kemudahan tentang komunikasi antara perawat dan keluarga pasien. Pelayanan *homecare* di berikan melalui edukasi, konsultasi, dan monitoring kepada pasien.
5.	(Wulandari, 2017)	Dalam penelitian ini, dengan *telehomecare* perawat tetap dapat memberikan kegiatan edukasi kepada pasien guna meningkatkan pengetahuan pasien.
6	(May *et al.*, 2021)	Bentuk intervensi *telehealth* dengan menggunakan konsultasi video tetap memperhatikan aspek-aspek keperawatan, dalam hal pemberian perawatan medis, edukasi, dan konsultasi.
7.	(Zahoransky and Lape, 2020)	Pada penelitian ini pemberian layanan *telehealth* dapat diberikan dalam hal monitoring, dan juga perawatan pasien selama terapi dengan memperhatikan kehandalan perawat.

Berdasarkan tabel 4.5 hasil analisa 7 artikel tersebut diketahui bahwa pelayanan *homecare* berbasis *telenursing* secara keseluruhan membahas terkait pelayanan *homecare* yang diberikan melalui *telenursing* dengan mempertimbangkan aspek-aspek perawat seperti jaminan langsung, bukti langsung, kehandalan perawat, dan juga kerahasiaan pasien. Pelayanan yang diberikan berupa pemberian asuhan keperawatan, monitoring, edukasi, dan juga konsultasi.

BAB 5

PEMBAHASAN

Pembahasan dari *review* 7 artikel yang didapat, terkait bentuk penerapan *telenursing* terhadap peningkatan kualitas pelayanan *home care* pada pasien Covid-19 yaitu:

5.1 Jenis *Telenursing*

Berdasarkan hasil identifikasi dari 7 artikel tentang *telenursing* , pada tabel 4.4 di ketahui bahwa bentuk penerapan *telenursing* secara keseluruhan menggunakan *smartphone* dalam pemberihan asuhan keperawatan pada pasien bisa dengan memanfaatkan kecanggihan teknologi yaitu konsultasi *online*. *Telenursing* merupakan metode baru dalam asuhan keperawatan guna mencegah terjadinya penyebaran virus Covid-19. Bentuk penggunaan *telenursing* meliputi penggunaan internet, *website,* media sosial, video konsultasi, *smartphone*, dan telepon dalam memberikan suatu perawatan kepada pasien (Lee, Chen, Haiso, 2007).

Telenursing dapat diartikan sebagai suatu proses pemberian, manajemen dan koordinasi asuhan serta pemberian layanan kesehatan melalui teknologi informasi dan telekomunikasi (CNA, 2005). Jenis-jenis *telenursing* meliputi *website*, media sosial, dan juga *smartphone* dalam pemberian perawatan kepada pasien. Dari hasil *review* artikel, jenis-jenis *telenursing* menurut (Kord *et al*, 2021) yang dituliskan bahwa setelah dilakukan penelitian 9,95% dari rata-rata menerima pelayanan kesehatan dengan menggunakan *telenursing* dan secara keseluruhan respondennya

lebih menggunakan *smartphone* dengan menginstall aplikasi skype. Pada artikel (Zahoransky and Lape, 2020) juga dijelaskan bahwa penggunaan *telenursing* tidak hanya menggunakan *smartphone* saja, namun juga bisa menggunakan Ipad, tablet, dan laptop. Dalam penggunaan *telenursing* juga di perjelas dalam jurnal (Rygg, Brataas and Nordtug, 2021) dijelaskan bahwa dalam situasi pandemi saat ini, perawat merasa penggunaan *telenursing* dengan *video call* sangat relevan dan perawat merasa mampu memberikan perawatan yang berkualitas bagi pasien positif covid-19 dengan gejala ringan yang melakukan perawatan dirumah saja, dengan demikian perawatan virtual dianggap sebagai suplemen yang berguna untuk tindak lanjut tradisional dan juga perawat dapat memonitoring kondisi yang sedang dialami pasien melalui *video call.* Dalam jurnal (Hägi-Pedersen, Kronborg and Norlyk, 2021) juga menjelaskan bahwa dengan menggunakan *smartphone* yang berbasis video konsultasi, dapat memberikan akses kemudahan bagi perawat dan pasien untuk melakukan perawatan, edukasi kepada pasien dan juga konsultasi via online.

Pemanfaatan *telenursing*, pada saat pandemi Covid-19 sangat efektif untuk mencegah terjadinya penularan penyakit Covid-19 di rumah sakit. Ada beberapa jenis penggunaan *telenursing* yaitu dengan laptop, *smartphone*, dan tablet iPad dengan menginstall aplikasi yang memudahkan pasien dalam melakukan proses pendaftaran, dan juga berkonsultasi dengan tenaga kesehatan, selain itu juga memudahkan bagi tenaga kesehatan dalam pemberian asuhan keperawatan.

5.2 Bentuk Pelayanan *Homecare* dengan *Telenursing*

Berdasarkan hasil *review* 7 artikel, pada tabel 4.5 secara keseluruhan membahas tentang pelayanan *homecare* yang berbasis *telenursing* dengan mempertimbangkan berbagai aspek seperti kehandalan perawat, bukti langsung, kerahasiaan pasien, dan bukti langsung. Penerapan *telenursing* dalam pelayanan keperawatan *home care* terdiri dari monitoring, konsultasi, edukasi dan pengkajian, media yang digunakan dalam penerapan tersebuut yaitu *handphone*.

Pelayan *homecare* dengan *telenursing* yaitu dengan kegiatan monitoring pasien yang merupakan suatu kegiatan untuk memantau, mengamati dan mengawasi suatu kondisi tertentu. Kegiatan monitoring dilakukan untuk membantu meningkatkan kepatuhan klien dalam menjalani pengobatan, seperti pengobatan penyakit degeneratif. Selain monitoring, pelayanan seperti pemberian edukasi kepada pasien juga diberikan, haal ini diperjelas dalam artikel (Wulandari, 2017) menjelaskan bahwa sebelum diberikan edukasi pelalui *telehomecare* pasien masuk kedalam kriteria kurangnya pengetahuan. Namun, ketika pasien dilakukan edukasi melalui *telehomecare* dan dengan diberikan 10 item pertanyaan, 70% responden mampu menjawab 10 item pertanyaan yang telah diberikan. Dapat disimpulkan bahwa, sebelum dilakukan pemberian edukasi melalui *telehomecare* responden memiliki tingkat pengetahuan meningkat. Sehingga dalam hal pemberian edukasi *telehomecare* sangat efektif. Menurut artikel (May *et al.*, 2021), pelayanan *homecare* berbasis *telenursing* dapat diberikan kepada pasien covid-19 dengan gejala ringan seperti edukasi, monitoring kondisi pasien, dan juga konsultasi online, namun tetap

memperhatikan aspek-aspek keperawatan seperti kehandalan perawat, tindak lanjut, bukti langsung, jaminan, dan kerahasiaan pasien.Pada artikel (Hägi-Pedersen, Kronborg and Norlyk, 2021) konsultasi dilakukan melalui aplikasi yang dapat diakses melalui handphone, terdapat fitur video call didalamnya sehingga klien dan keluarga dapat berkomunikasi dengan melihat satu sama lain tanpa harus bertemu secara langsung. Manfaat lain konsultasi ini adalah membuat klien atau keluarga klien benar-benar memperoleh jawaban atau informasi dari perawat atau dokter. Penelitian tersebut sejalan dengan tujuan dari pelayanan homecare yaitu meningkatkan, mempertahankan, dan juga memulihkan kesehatan pasien, mengoptimalkan tingkat kemandirian klien dan keluarganya, serta meminimalkan akibat yang ditimbulkan dari masalah kesehatan yang dialami klien.

Menurut opini peneliti, pelayanan *homecare* dengan berbasis *telenursing* selama pandemi sangat efektif untuk mencegah penularan penyakit Covid-19 dan dapat meningkatkan kualitas pelayanan *homecare*. Perawat dapat memberikan pelauyanan berupa edukasi, monitoring keadaan pasien, dan juga konsultasi dengan pasien melalui jarak jauh dengan mengakses menggunakan media *smartphone*. Sehingga komunikasi antara perawat dan juga pasien sangat diperhatikan karena komunikasi yang baik akan berdampak pada kepuasan pasien guna meningkatkan kualitas pelayanan *homecare*.

BAB 6

KESIMPULAN DAN SARAN

6.1 Kesimpulan

Berdasarkan hasil *review* 7 *artikel*, maka diambil kesimpulan tentang hasil *literatur review :*

a. Jenis-jenis *telenursing* yaitu diantaranya *smartphone*, laptop, tablet, dan iPad dengan menginstall suatu aplikasi Skype, LiveCare, *Homecare,* dan juga menggunakan *video call* ataupun video konsultasi.
b. Pelayanan *homecare* dengan *telenursing* dengan memberikan konsultasi, edukasi, dan juga monitoring kondisi yang dialami pasien. Namun, tetap memperhatikan aspek-aspek keperawatan seperti jaminan, bukti langsung, kerahasiaan pasie, dan kehandalan perawat.

6.2 Saran

a. Bagi perkembangan penelitian

   Agar dapat dilakukan penelitian terhadap kebutuhan telehelath dalam keperawatan sesuai dengan artikel yang telah dipaparkan pada *literatur review* ini.

b. Bagi institusi

   Agar dapat digunakan sebagai referensi untuk menambah ilmu dan memperkaya ilmu dalam bidang teknologi keperawatan

c. Bagi masyarakat

Masyarakat yang memiliki keluhan terkait kesehatan dan sedang berada jauh maupun dekat dari rumah sakit atau layanan kesehatan bisa langsung konsultasi secara virtual melalui telepon dan video.

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Developing home health care application for patient during the covid-19 pandemic

A A J Permana[1], I G P Sindu[2], I M Pageh[3]

[1,2] Informatics Engineering, Faculty of Engineering and Vocational, Universitas Pendidikan Ganesha, Singaraja, Indonesia
[3] Historical Education, Faculty of Law and Social Sciences, Universitas Pendidikan Ganesha, Singaraja, Indonesia

agus.aan@undiksha.ac.id, partha.sindu@undiksha.ac.id, made.pageh@undiksha.ac.id

Abstract. The term "Priyayi" or willing to be served in Indonesia as a social context really encourages start-up developers to develop products. Also, Covid-19 pandemic makes people anxious to visit hospitals or "Puskesmas" (Community Health Care Service). The development of home care applications is prospective in Indonesia, especially in Singaraja, Bali. It greatly assists the community to get health services in their homes so that it is safer and more comfortable than queuing for services at hospitals and clinics. This research is descriptive qualitative research. The applications are developed using the Agile Method. The data is obtained through observations, interviews, and previous scientific research and study. Based on the results of interviews, 80% of respondents wanted the development of this application. Furthermore, the result of Alpha testing showed that the system could ran well. The usability Testing Process used the System Usability Scale (SUS) questionnaire with 20 respondents resulted in a "Good" value (65,125) so that this application followed the needs of people who want to get health care at home during the Covid-19 pandemic.

1. Introduction

In the 4.0 technology and information era, the internet is connected to various devices and can provide various conveniences to the community. The development of technology in generation 4.0 brings convenience to human life. With more and more advanced technology-based services, people can easily fulfill their needs quickly and practically.

Internet technology, which was the result of World War II, eases the cyber world exploration using websites. Websites are connected thus anyone who has an internet connection can communicate anytime and anywhere. Mainframe computers (large computers) have also evolved into Personal Computers (PCs), Laptops, Tablets, Mini Tablets, and Smartphones. Smartphones make internet connection and web connection easier, due to the increasing capabilities of the devices at the hardware, software, and features levels.

The explosion of the Indonesian population, which has now reached 250 million, opens opportunities to offer various businesses and services via the internet and the web (Smartphone). Based on data from the e-marketer Digital Marketing Research Institute in 2018 showed that there were more than 100 million active smartphone users, bringing Indonesia to become the fourth Smartphone user country after China, India, and America [1].

Based on field observations, the number of Smartphone users has a positive impact on the Startup to develop smartphone-based applications that can be used to help people, such as *Matahari Mall, GoJek, Bukalapak, TokoPedia, AiryRoom*, etc. Those applications are familiar among Indonesian citizens. The new startup keeps coming to support local products such as *Codapay* (cut credit for payments), *HijUp* (modeling for Muslim women), *IDNtimes.com* (youth trend), *Jarvis Store* (Online Shop), *Ruang Guru* (Online learning), *Talenta* (employee attendance management), etc.

The satisfying service makes customers are willing to pay more and even makes them feel like a "new *Priyayi* in the Postmodernism era". International products and logos that are used as a symbol of the modernism does not act as a symbol of luxury anymore. For example, it was used to be a luxury and felt like *priyayi* when eating at KFC and McD. From a social point of view, the term *priyayi* appeared in Java. It is a term for a noble family belonging to *kraton* relatives who received Dutch education [2]. Feudal attitude refers to behavior that always wants to be respected, and always wants to be served, holding on to old values that have been abandoned [3]. Many of the rich people today have a *priyayi* attitude, which are willing to be served, giving unnecessary comments, and having a high consumptive character.

Postmodern spreads through video and computer technology. This can be seen from several films and television shows; the internet is a good example of this era [4]. Postmodern society is part of a more visual society (viewing society) because it is dominated by television and the internet. Nowadays, it is difficult to distinguish between real and fictional, for example, many robots face now resemble real humans. Many cannot distinguish between humans and robots through visual displays, like the one portrayed in the film 'The Matrix'.

In addition to postmodernism, currently, there is a new era called the pandemic era. This was caused by the Covid-19 virus, which was first detected in the city of Wuhan in China in January 2019. On March 2nd, 2020, the Indonesian government announced the first case of Covid-19 that caused activity restriction and implementation of health protocols. People are afraid to visit clinics and hospitals for fear of contracting Covid-19. The most frightening sight is that the rate of transmission of the Covid-19 virus in Indonesia, especially Bali, is very high. The pandemic is still raging and it is unclear when it will end. Even though governments in all countries have issued regulations regarding health protocols, new cases are still reported. The alarming situation in Indonesia is the death of medical personnel and paramedics due to contracting the coronavirus. This makes Indonesians anxious, panicked and makes them afraid to leave the house, socialize, and gather round. For healthy people, the situation is still tolerable. But not with unhealthy people who need treatment but are afraid to go to the hospital or clinic. The solution to this problem is by providing Home Care services. The community remains safe and comfortable at home thanks to this home care service [5]. The community can enjoy light treatments such as blood pressure checks, blood sugar checks, wound care, cleaning wounds after surgery, and handling minor illnesses that can still be done at home.

Based on observations of home care services carried out by hospitals and clinics using the chatting application and forms, it was found that in the pandemic era, the community strongly supported the development of a health service in the form of Home Care Clinic, an online-based services that can be accessed via Smartphone, to provide intense care to the general public at home and office or anywhere else without demanding the patient to wait and crammed in hospitals and health clinics. It is possible to develop technology-based health services in Indonesia to provide health services to patients such as care, health education, or safe and effective remote health monitoring[6][7]. Patients can download the application and install it on a Smartphone and then order services, connect directly with doctors, receive care and treatment directly at home. Home Care is a service commonly used in America since the 19th century[8]. Home Care can also bring sanctification for the senior community to obtain care and improve their quality of life [9]. The main purpose of this service is to provide health care to help the community. Health care consists of two types, namely medical and non-medical measures.

Home Care is a home medical service [10] which provides information on care and therapy services at home for patients with diabetes care, blood pressure checks, breathing apparatus, wound care after surgery and childbirth, or health care according to the need of the patient. This is done to help patien

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receive intensive care in their homes, by first entering the patient's home coordinates [11]. Hospital treatment also has a psychological impact on patients. By treatment from home, the patient feels less depressed than in the hospital. Home care services are continuous and comprehensive services provided to individuals and families to minimize the effects of disease [12]. The order process for this service can be done online by filling out the order form and can be accessed online via computers, laptops, and smartphones. This can break the Covid-19 infection because the working concept of this service is to assign the closest health officer to serve patients directly in their homes. Thus, this does not create a new Covid-19 cluster.

2. Method

2.1 Data Collection

The data were collected through observation, interviews, and literature review. The time required for the data collection process was 3 months, from January to March. Data collection was carried out long before Covid-19 hits Indonesia. The data was collected by coordinating with medical and paramedics at a hospital that provides a Home Care program, namely the *Kerta Usada* Hospital in Singaraja, Bali-Indonesia. The interview was carried out with 10 people which are doctors, nurses, and patients. Based on the results of interviews, 8 out of 10 respondents wanted the application to be developed because of its convenience, and 2 respondents stated that they did not understand this application. However, it was not enough because the data obtained was limited. The literature review provides business processes of the applications as well as the need of the user in developing this application, such as the use case in Figure 2.

2.2 Application Development

The development of the health service application used Agile Methodology or known as the short-term development methodology. The reason for choosing the Agile method was because the development process required rapid adaptation to any form of changes, less time was invested in documentation and analysis because the clients were continually viewed, tested the product, and also provided feedback. This became a needed process in the development of the Home Care application because it required fast feedback and must immediately revised according to users need. Agile modeling is also a set of values, principles, and practices for modeling software so that it can be used in software development projects effectively and efficiently. The process in Agile can be seen in Figure 1.

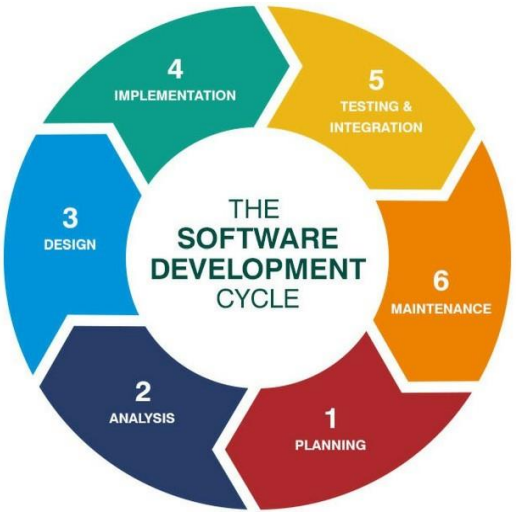

Figure 1. Agile Methodology [13].

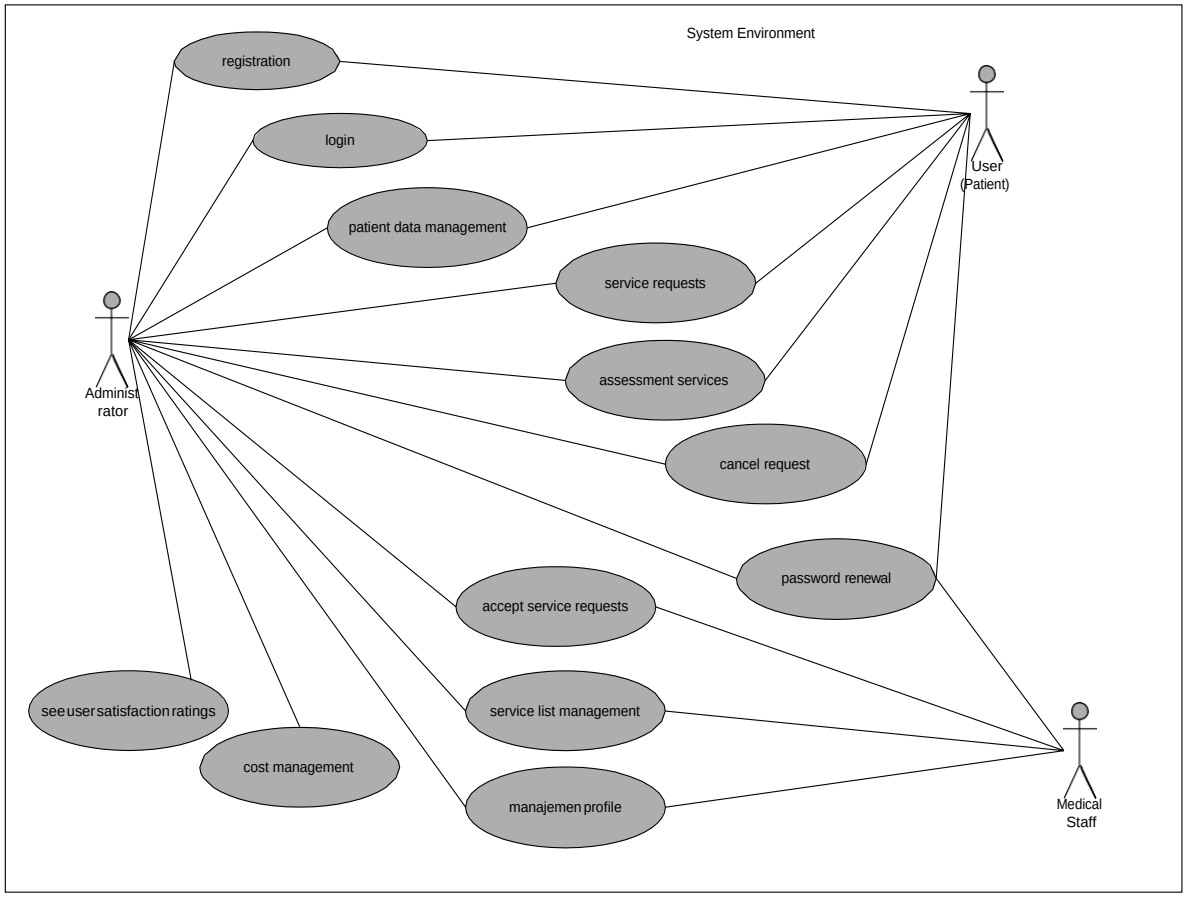

Figure 2. Use case of application home care.

- Planning Stage
  The planning stage is the earliest stage or the first stage of the agile model in the process of developing a mobile-based health service application. At this stage, data is collected to be used in the development of the application therefore the next stage would be easier after all the data had been collected. After all data is collected, the activity is continued to the analysis stage.
- Analysis Stage
  The analysis stage answers questions about potential users of the online-based health service application, the services that the application can provide, also the time and place the application can be used; as shown in Figure 2. This stage is used to make improvements and developed concepts for online-based health service applications if it is necessary. Likewise, it should be remembered that the results of the analysis phase are the analysis along with the initial design for the system, namely in the form of a use case diagram.
- Design (modeling) Stage
  The modeling phase is done by creating the interface design based on the pre-designed model. UML is a modeling method that replaces the object-oriented analysis method and object-oriented design (object-oriented analysis and design). UML serves to model all object-oriented systems. Modeling languages can also be used by humans or machines to make it easier for developers in discussing system design with a comprehensible modeling language. Based on the type of diagram, UML can be divided into several parts, namely, use cases, activity diagrams, sequence diagrams, and class diagrams. In addition, the designs prepared are database design and system interface design.

- Implementation Stage
  This stage aims to implement the design that has been made. The coding process is carried out on the website and mobile thus the application can be accessed online and via a smartphone. This process took 6 months to develop an application and then a testing process is carried out to find errors.
- Testing and Integration Stage
  Online-based healthcare applications are tested based on the initial design to ensure their performance. If the system does not match the initial design, the process will return to the first stage. Checks are done repeatedly to make sure there are no bugs as well as shortcomings and things that were not needed. The methods used to test the mobile-based Home Care health service application were White box and Black box. After completing the White box and Black box testing, it is continued by conducting Usability Testing using the System Usability Scale (SUS) questionnaire on a scale of 1-5 and the results were 65,125 from 20 respondents who are medical personnel, paramedics, and patients. This value is "Good" category. The activities carried out by the assessor in the White box test are as follows:
    1. Test the functions of the application.
    2. Test the suitability of workflow functions in the application with the requirements (requests) needed by the customer.
    3. Look for bugs or errors from the application interface (display)
    4. Integration of website-based service systems with mobile applications so that the data transferred can be synchronized.
- Maintenance Stage
  This is the stage of operating and maintaining the system. This stage is the software development life cycle that requires the longest time because maintenance includes correcting various errors that are not found in the previous stages, making improvements to the implementation of the system unit, and the development of system services as well as adding features and maintaining good data consistency both in the side of server or client.

2.3 Framework Code Igniter and Visual Studio Code

The framework according to [14] is software that has the aim of making it easier for mobile, web, or similar application developers to build an application. Each framework has basic command functions for developing applications that make it easier for developers to build applications faster with structured code. There are several frameworks used as follows.

Code Igniter is a framework used to build dynamic PHP applications. Code Igniter is a PHP framework with an MVC model (Model, View, and Controller) which is used in building dynamic websites using PHP which can speed up programmers to create a web. Besides being lightweight and fast, Code Igniter also has complete documentation and is supplied with examples of code implementation. This complete documentation makes Code igniter the framework of choice. In the case of this health care application, code igniter is used as a framework to create a design and build of a Web-based Home Care Service application.

Visual studio code (VS Code) is a lightweight and reliable text editor made by Microsoft for multiplatform operating systems, which means it is also available for Linux, Mac, and Windows versions. This text editor supports JavaScript, Typescript, and other programming languages with the help of a plug-in that can be installed via Visual Studio Code marketplace.

2.4 Android Studio

Android Studio is an Integrated Development Environment (IDE) that is modified or developed in such a way as to become a complex floating environment for creating Android operating system applications based on IntelliJ IDEA [15]. The features of the Android studio are as follows:

1. The base system uses Gradle, which is updated regularly and flexible
2. A complete feature on the default emulator

3. When testing the application, it is not necessary to build the application into the APK because there is an Instant Run feature that automatically builds the application to the connected device
4. There is an ADB Wi-Fi feature that enables the smart phone to act as an emulator without using a data cable
5. Push, pull feature, which eases developers to import and export code to GitHub, Git and others

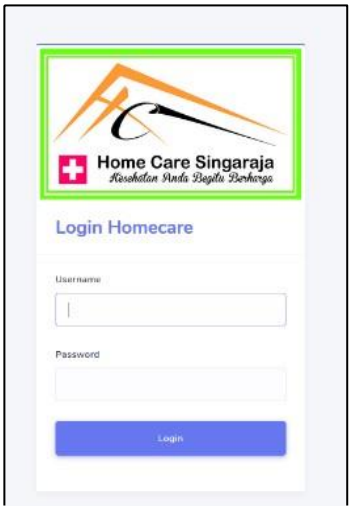

Figure 3. Login application on website.

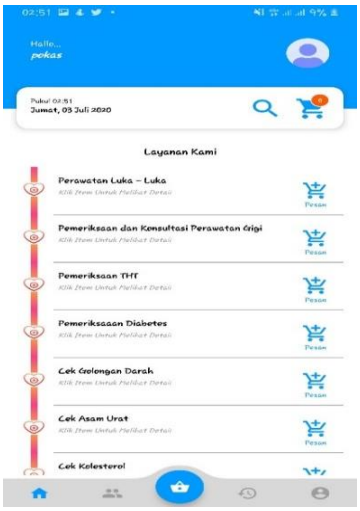

Figure 4. List of service base mobile.

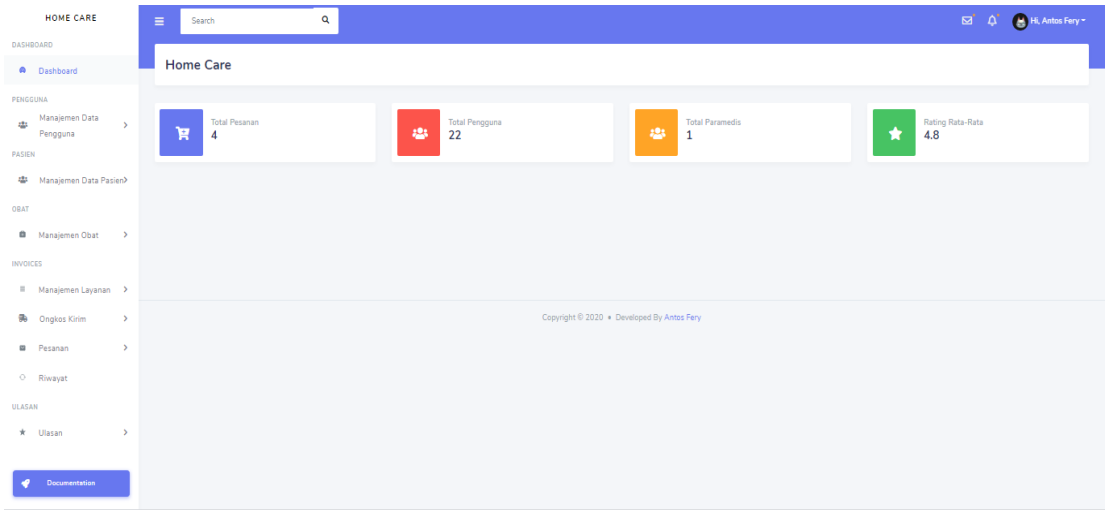

Figure 5. Administrator page on website.

3. Result and Discussion

The development of the Application was carried out and implemented properly according to the initial design. The application ran on two sides (1) server-side and (2) client-side. On the server-side, a website managed by an administrator was installed as shown in Figure 5. Admin could log in as shown in Figure 3 to perform several processes such as managing patient data, staff data, service data, transaction data, and customer satisfaction data. On the user-side (client-side), the application can be accessed via an Android smartphone by installing the Home Care application. After installing the application, users could register by using email, and an activation code is sent via email. Then, if the

user wants to order services, they have to fill in the form provided as shown in Figure 4, and then they can order services. The closest staff will receive notification from the customer, if the notification is approved by the staff, the Home Care process can be carried out. If there is any additional fee, the medical staff will confirm it to the family of the patient. Payment can be made via ATM transfer and recipe of transfer can be uploaded to the system by the patient. The system testing process was carried out as shown in Table 1.

Table 1. Testing Application.

No	Test	Admin on Website	User on Android	Description	Result
1	registration	√	√	Enter your e-mail, full name, user name and password correctly. If the registration process is successful, an activation email will be sent	running well
2	login	√	√	User enters the account username or e-mail and password. If successful, the user will be directed to the home screen.	running well
3	patient data management	√	√	The patient fills in the data according to the form. If successful, the user will be redirected back to the patient list page. Admin only checks the data that has been filled in by the patient.	running well
4	service requests		√	User can add services to the cart. The first way, the user can use the dialog. Set the amount using the plus and minus keys or enter manually with the keyboard. The second way, through the service details, set the amount using the plus and less buttons or enter manually with the keyboard.	running well
5	assessment services		√	The user enters a description of the rating and determined the star rating of the service. If successful, the user will be redirected back to the history list page.	running well
6	cancel request		√	User can cancel the order by deleting the service in the cart	running well
7	password renewal	√	√	User can update password to login	running well
8	accept service requests		√	Staff can view a list of service requests by users. The staff can press the accept button on the service request details. In addition, staff can also see the details of the service request.	running well
9	profile management		√	Staff can manage their personal profile	running well
10	service list management		√	The staff can see a list of service requests by the user	running well
11	cost management	√		The cost of treatment is standardized, if there are any additional services and medicines, it can be added by the officer. Maintenance costs include travel costs, which are managed by the admin.	running well
12	see user satisfaction ratings	√		Staff can see a history of the services that have been performed. The information displayed includes an assessment rating, address implemented services, total costs, patient name and other info related to patient satisfaction	running well

4. Conclusion

The Home Care application was successfully developed by applying the Agile method stages. The development process was carried out in a short time (about 6 months), amid many revisions both physically and structurally. This study aims to facilitate public access to health services without having to visit a hospital or clinic. With the existing limitations, both data and literature, finally the application was successfully developed. With this application, everything can be done from home, ordering services, and taking care of the patient can be done at home (Home Care). Everyone has the right to enjoy comfort in health services, especially in the midst of a pandemic that hits all countries around the world. This is relatively safe to minimize coronavirus transmission because people do not need to visit the hospital. The results of testing the system using the application method and Beta Testing with the White Box and Black box methods went well. The Usability testing process with SUS was in "Good" category, namely a value of 65,125.

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Oncology nurses' lived experiences of video communication in follow-up care of home-living patients: A phenomenological study in rural Norway

Lisbeth Østgaard Rygg [a,*], Hildfrid V. Brataas [b], Bente Nordtug [b]

[a] Faculty of Nursing and Health Sciences, Campus Namsos, Nord University, Norway
[b] Faculty of Nursing and Health Sciences, Campus Levanger, Nord University, Norway

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ABSTRACT

Purpose: To explore the lived experiences of oncology nurses (ONs) during three months of virtual care provided through video conferencing (VC) in the follow-up care for home-living patients with cancer in rural Norway.

Method: An exploratory study employing a descriptive phenomenological approach conducted with a purposive sample of four ONs working in primary health care in three municipalities. Individual interviews based on open-ended questions about the ONs' experiences of VC use in follow-up care were analyzed using methodology inspired by Clark Moustakas. The COREQ checklist was utilized in this study.

Results: ONs provided VC as a quality-promoting supplement to traditional follow-up. Their lived experiences of the phenomenon were described by the following themes: 1) Choice of VC based on care need considerations, 2) Use of VC on portable tablets facilitated contact and frequent follow-up, and 3) Adaption of relevant virtual care in person-centered and goal-oriented practice.

Conclusion: The use of VC may contribute to accessible and frequent quality care and reduce the ONs' travel time for home visits. This study points to a need to individualize and assess the appropriateness of virtual care in challenging cancer situations. Furthermore, there is a need for larger-scale studies on how VC may influence quality care.

1. Introduction

The focus of this study is the experiences of oncology nurses (ONs)' regarding follow-up of home-living patients with cancer using internet-based video conferencing (VC) in addition to telephone and face-to-face meetings in primary health care in rural Norway. This study explores the essence of ONs' lived experiences with VC as a new form of communication in follow-up care for home-living patients. The study provides relevant information for future efforts to streamline clinical practice, protect at-risk groups against viral infections, and reduce long-distance driving and its environmental impact.

Specialized health services have the main responsibility for cancer treatment, while primary health care services are responsible for home-based follow-up (Norwegian Ministry of Health and Care Services, 2009). To facilitate follow-up, many municipalities have ONs in primary health care. ONs are specialized nurses with knowledge of different types of cancer and their corresponding treatments, as well as how to relieve suffering (Norwegian Ministry of Education and Research, 2005). ONs act as a link between patients and home care nurses, general practitioners, and cancer therapists in hospitals. A key task for ONs is to promote self-management and quality of life among patients in all stages of disease, whether through short- or long-term follow-up (Norwegian Ministry of Education and Research, 2005).

The supportive care needs of oncology patients include helping to manage emotional aspects such as fear of recurrence, ensuring they are equipped with the necessary health-related information, and meeting their informational needs with regard to nutrition, fatigue, and self-management of symptoms and complications (Kotronoulas et al., 2017). Therefore, ONs' counseling abilities, skills to establish and maintain interpersonal and goal-related relationships (Hargie, 2016), provision of information and social support (Hyun et al., 2016), and shared decision making (Jorgensen et al., 2018; McCormack and McCance, 2017) are of great importance to patients' quality of life, well-being, recovery, and psychosocial functioning (Jacobs and Shulman, 2017; Moore et al., 2018; Tay et al., 2018). In demanding disease situations, patients may benefit from easy access to social support to meet their informational, emotional, practical, appraisal, and physical needs (Ali et al., 2018; de Leeuw and Larsson, 2013). A number of

* Corresponding author. Nord University, Postbox 1490, 8049, Bodø, Norway.
E-mail addresses: lisbeth.o.rygg@nord.no (L.Ø. Rygg), hildfrid.v.brataas@nord.no (H.V. Brataas), bente.nordtug@nord.no (B. Nordtug).

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studies indicate patients' needs for close follow-up (Scott, 2019). Research has also shown that patients with various forms of cancer, as well as cancer survivors, often have unmet informational and psychosocial support needs and may experience long wait times and limited access to health care providers (Faller et al., 2017; Galán, de la Vega and Miró, 2018; Hyun et al., 2016; Moghaddam et al., 2016; Piazza et al., 2017; Scott, 2019).

In follow-up, ONs often use home visits and telephone contact. With the dispersed settlement pattern characteristic of rural Norway, ONs drive long distances and thus spend much time traveling to visit patients (Holm and Angelsen, 2014). Strengthening online services for patient follow-up may help streamline ONs' time management. This presupposes that sufficient emphasis is placed on ensuring the security of patient information Norwegian Directorate of eHealth, 2020). A home-based telehealth service may provide patients and their primary ONs with the opportunity for contact using both sound and pictures over the internet. The use of VC is, therefore, recommended as a complement to traditional care (Fagerstrom et al., 2017). Furthermore, VC can play an important role in situations where it is necessary to reduce interpersonal contact. This has been demonstrated during the 2020 COVID-19 pandemic, with many general practitioners beginning to use VC consultations and people only being allowed to visit their relatives residing in nursing homes via VC (Zhang et al., 2020).

Regardless of the situation, the use of VC in nursing presupposes patient safety and nurses' knowledge and user skill (Rygg et al., 2018). Safety, defined as 'prevention of harm to patients', is the foundation upon which all quality care is built. Quality of care means that care is safe, effective, person-centered, timely, efficient and equitable (Michell, 2008). Person-centeredness is a form of practice rooted in empowerment (McCormack and McCance, 2017), with the value base in line with nursing theory building on existential phenomenology (Parse, 1992). The theory guides nurses to focus on quality of life from the perspective of each patient.

There are some published studies on the implementation of VC in home-based care (Interian et al., 2018; Nordtug et al., 2018; Rygg et al., 2018). Based on the literature, VC has proven useful as a form of communication in home-living patients in a variety of health situations requiring close follow-up (Nordtug et al., 2018). Furthermore, it has been reported that patients in community care consider VC counseling and guidance to be similar to in-person meetings (Nordtug et al., 2018; Rush et al., 2018a,b; Rygg et al., 2018; Skar and Soderberg, 2011). Some studies on follow-up during ongoing treatment of patients with breast cancer have demonstrated positive effects on patients' self-efficacy, symptom distress, and psychological well-being (Zhu et al., 2017). Other research has shown that patients with cancer who have access to online support and interaction with health care professionals cope better with their illness and everyday life (Rush et al., 2018a,b; Rush et al., 2018a,b).

However, few studies seem to address ONs' lived experiences of their own considerations and practice when using VC in follow-up care as an addition to traditional follow-up using face-to-face meetings and telephone calls. Aiming to fill this knowledge gap, we developed the following research question:

What is the essence of ONs' lived experiences of VC as a new form of communication in follow-up care for home-living patients?

2. Methods

2.1. Design

This exploratory study employed a descriptive phenomenological approach (Creswell and Poth, 2018), inspired by Moustakas' (1994) analytical methodology with its focus on descriptions of "what" is experienced of a phenomenon and "how" it is experienced. The use of VC meant a new situation in ONs' care for home-living patients. The phenomenological lens and research methodology were chosen because

of their relevance to providing detailed information about individuals' lived experiences of a situation (Greening, 2019). Lived experience in- volves the immediate, pre-reflective consciousness of life (Dowling and Cooney, 2012). Dowling and Cooney (2012) refer to Husserl (1970), describing the lifeworld as what individuals experience pre-reflectively, without resorting to reflections.

2.2. Data collection

Rather than evaluating the program, which could have been done in focus group discussions, we were exploring the essence of ONs' lived experiences of VC as a form of communication in their follow-up care using qualitative in-depth interviews (Creswell and Poth, 2018; Moser and Korstjens, 2018; Moustakas, 1994). Interviews were based on an open-ended question about ONs' lived experience of the use of VC in follow-up care of eight patients over a three-month period. The in- terviews were conducted in the ONs' offices, audio recorded, and tran- scribed verbatim. Two researchers with extensive experience in qualitative interviewing conducted the interviews. All three researchers were involved in transcription; the audiotapes thereafter were deleted.

2.3. Sample and sampling

The study was conducted in three rural municipalities in Norway with a total of 7500 inhabitants. With purposive sampling, this study utilized the following inclusion criteria: 1) ONs regularly involved with follow-up of oncology patients and 2) ONs with experience using VC in follow-up for a three-month period. There were only four ONs employed in these municipalities. All four ONs met the inclusion criteria, were willing to participate and were included in the study. The number of participants was small but within the range that is relevant in phenomenological research (Creswell and Poth, 2018). Saturation re- volves around both data relevance and occurrence (Fusch and Ness, 2015). It was considered possible to achieve data saturation with respect to rich data with relevant depth regarding the ONs' lived experiences of considerations and practice using VC as an addition to traditional follow-up as a delimited caring phenomenon. The sample group had significant and long term experiences in the field of care (Table 1. Participant characteristics).

2.4. Research ethics

Health care administrators in each municipality informed the ONs about the study of VC in follow-up care and provided the potential participants with written explanations from the researchers about voluntary participation in interviews, confidentiality and anonymity.

The researchers were not known by the ONs. All four ONs agreed to participate and provided written informed consent prior to the in- terviews. Approval to conduct the study was obtained from the Regional Committee for Medical and Health Research Ethics (Ref. no. 2016/968) and the National Data Inspectorate in Norway (Ref. no. 49571).

2.5. Analysis

The data were subjected to descriptive phenomenological analysis

Table 1
Participant characteristics.

	Age, years	Work experience as nurse, years	Work experience as ON, years
ON1	44	20	16
ON2	32	10	4
ON3	41	19	10
ON4	61	35	20

ON: oncology nurse.

(Creswell and Poth, 2018; Moustakas C, 1994). During data analysis, the focus was on the essence of the ONs' lived experience of the phenomenon. Thus, to determine overarching themes, specific statements were analyzed for what ONs experienced using VC in follow-up care and how they perceived the experience (Creswell and Poth, 2018; Moustakas C, 1994).

The first step was repeated examinations of the transcribed interview text, which provided a broad overview of the ONs' experiences. The next step was to mark statements of significance in the description of the ON's experiences. Two researchers searched for text segments within statements that could be isolated and extracted to illuminate the research phenomenon (Creswell and Poth, 2018; Moustakas C, 1994). The researchers sought to identify units about issues, problems or contradictions in the data material. Text segments were tested for relevance to the issue, and redundant units were eliminated.

Next, statements of relevance were thematized and grouped within themes (Moustakas, 1994). To elucidate the essence of experiences, we considered the literal content of *what* was experienced and *how* it was experienced, how nonverbal or paralinguistic cues were used, the chronology of events, and the frequency a type of experience mentioned (Moustakas, 1994). A textual-structural description of the meaning and essence of the experiences of each ON was construed. All researchers checked the description against the interview text to determine if the essence of the interviews had been correctly captured.

Integrating all individual textual-structural descriptions into a universal description of the experience, representing the group of ONs as a whole, we were seeking for common themes and meanings as well as variations that could bring out the uniqueness of individual voices. The data were rich in descriptions of practical considerations regarding the use of VC in ONs' follow-up. In a review of the analyses of one interview after the other, no new analytical information arouse when we went through the last interview, thus considered a sign of data saturation (Moser and Korstjens, 2018).

Table 2 provide an example of the structure of work, from preliminary reflections on statements of relevance, to associated formulated meanings, and theme cluster for one theme.

The Consolidated criteria for reporting qualitative research (COREQ) checklist was utilized in the study. With the intention to achieve as good intersubjective validity as possible, analytical considerations were discussed by three researchers with three different subject specializations; nursing, education, and psychology. The three had linguistic and cultural living backgrounds in the same geographic context as the informants, and therefore understood the informants' dialect usage. The researchers strived to critically consider statements as personal lived experiences about the actual reality – i.e. Noema correlating with Noesis (Rassi and Shahabi, 2015). Learning about the data material meant seeing how a problem was described or solved (single-loop learning), and then asking exploratory questions with the intention to counteract bias and gain a deeper understanding of underlying goals, values and thinking, i.e. double-loop learning (Argyris and Schön, 1996). Striving to achieve intersubjective validity, the results of the analyses also were sent to two informants. They accepted the results without any comments. All researchers discussed the descriptions in terms of the research question, theory, and literature and finally wrote a structural description of the nurses' lived experiences of the VC follow-up phenomenon.

Table 2
Theme, theme clusters, associated formulated meanings, and examples of significant statements.

Theme	Theme Cluster	Associated Formulated Meanings	Significant Statements
Choice of VC based on care need considerations	*Patients' health situation*	Choosing VC for patients in stable disease phases, and energy and attention to master the new aid.	*"At first it does not become natural for them, …they get a little stressed … They have not been very ill when they got it (tablet). I think they must get it before they are very ill, because then they have enough with the disease"* (ON1) *"… right now they have been in a calm phase"* (ON3). *"The patients are in an intermediate phase where they have either gone for treatment or have been unstable in their disease"* (ON2).
	Expected deterioration in health	Patients mastering VC facilitate easy of contact when a need for it raises	*"For these* (chosen) *patients, we know it will get worse"* (ON3). *"Of course, then (when the sickness worsens) it will be easier to get in touch with them and that may give them a better offer in the future"* (ON3).
	Seriously worsened illness	When patients are seriously ill, choosing home visits, this to reduce patients' strain, be close and provide support.	*"When they are so tired being sick, you do not videoconference, it will be too much for them"* (ON1). *"It would not have been appropriate to use VC because I think I might not have 'reached in' to provide adequate support in such a situation. … Safety is to be present"* (ON3). *"To talk about something that really touches the heart, you need to be close - So I hope tablets are not going to replace physical meetings entirely"*

3. Findings

Based on analyses of data from 140 min of interviews covering 102 units of significant text segments, our study explored whether ONs experienced virtual care as an acceptable supplement to traditional follow-up. In situations when ONs felt the use of VC was relevant, they felt they were able to still provide quality care; thus, virtual care was considered a useful supplement to traditional follow-up. The use of VC was limited to the follow-up of adult patients, i.e., those over 18 years of age. Adequate cognitive functioning was a prerequisite. Advanced age,

(ON4).

ON: oncology nurse; VC: videoconferencing.

on the other hand, was not an obstacle in itself. Eight patients were asked and willing to use VC with the ONs, ranging in age from 49 to 78 years (mean 69). The ONs selected patients with cancer in various organs.

The analyses illuminated the essence of ONs' lived experiences of the phenomenon as described by the following themes: 1) Choice of VC based on care need considerations, 2) Use of VC on portable tablets facilitated contact and effective frequent follow-up, and 3) Adaption of virtual care in person-centered and goal-oriented practice.

3.1. Choice of VC based on care need considerations

ONs were concerned that they should not burden patients by offering VC Follow-up. The offer, on the other hand, should be useful for them. Therefor choice of VC follow-up for suitable patients, was based on care need considerations. Theme clusters were 1) patients' health situation, 2) expected deterioration in health, and 3) seriously worsened illness.

3.1.1. Patients' health situation

When choosing patients for VC follow-up, ONs took factors surrounding the patients' health situation into account. One primary factor was the treatment phase: *"… right now they have been in a calm phase"* (ON3). The ONs felt it necessary to consider whether the patient had the energy and attention to learn to use a tablet. If patients found it problematic to master VC use, the ONs considered it to be an unnecessary and stressful experience. Therefore, they felt it was important to introduce VC when the disease was stable and the patient's attention could be aimed at mastering the new aid. By assessing the patients' health conditions, all four ONs chose patients in stable disease phases for VC follow-up. As ON2 explained, *"The patients are in an intermediate phase where they earlier have either gone for treatment or have been unstable in their disease"*.

3.1.2. Expected deterioration in health

The ONs also chose patients they considered would be in need of increased follow-up in the future: *"For these patients, we know it will get worse"* (ON3). If patients mastered the use of VC in the future, this was assumed to facilitate contact: *"Of course, then (when the sickness worsens) it will be easier to get in touch with them and that may give them a better offer in the future"* (ON3).

3.1.3. Seriously worsened illness

While using VC, situations could occur when illness worsened seriously. In such situations, the ONs followed up with home visits instead of VC; *"When they are so tired being sick, you do not videoconference, it would be too much for them"* (ON1). They felt it inappropriate and inadequate to provide supportive care in critical situations via VC. An example was when a cancer marker increased and the patient felt great fear. The ON felt a need to be present to provide necessary emotional support: *"It would not have been appropriate to use VC because I think I might not have 'reached in' to provide adequat*e support in *such a situation"* (ON3).

ONs emphasized the necessity of physical proximity to patients in 'heartbreaking' situations. ON4 said it this way: *"To talk about something that really touches the heart, you need to be close … so I hope tablets are not going to replace physical meetings entirely"*.

3.2. Use of VC on portable tablets facilitated contact and frequent follow-up

Use of VC on portable tablets facilitated contact and time-efficient better service with follow-up more frequent than when using only home visits. Theme clusters were 1) effective follow-up, 2) accessibility and confidentiality, and 3) contact reassurance.

3.2.1. Effective follow-up

The use of VC was experienced as effective follow-up in terms of frequency, quality and ONs' time use. When ONs used VC in follow-up, they had fewer home visits but more frequent consultations than with only traditional home visits. "*We have replaced home visits with a few more VC calls"* (ON2). They experienced frequent virtual follow-up, which gave a sense of quality in their service, as explained by ON3: "*We may give them a better service offer with VC"*.

Using virtual care as a supplement to regular home care, the ONs experienced this as an ability to provide more frequent follow-up and at the same time reduced driving over long distances to home visits: *"I think it's great. I save a lot of time"* (ON1).

3.2.2. Accessibility and confidentiality

Use of portable tablets as a tool for VC with patients facilitated accessibility. As ON3 said; *"Obviously, it is easier to get in touch"*. Because of the portable nature of tablets, the use of VC made contacting patients easier, regardless of where the ONs or patients were staying. ONs carried the tablets with them and they could talk to patients from places where they stayed. This meant that they had to rethink how they safeguarded patients' privacy. They were conscious of the social context when using sound and pictures and were aware of the need to have conversations in places that safeguarded the duty confidentiality about patients' privacy, for example, *"… not using it when I'm at the canteen"* (ON2).

Patients could also take the tablet with them. As ON1 said, "*And the tablet is a smart thing, because they can always have it with them; it gives them security"*. One ON experienced this advantage of VC when one of her patients was on a holiday and needed to contact her because of serious news about the disease.

3.2.3. Contact reassurance

The use of VC was perceived to foster a feeling of security for patients because they could get in touch if needed. Patients could also see on the display whether ONs were reachable. According to ON3, *"Patients feel safe without the need for me to go home to them … because it's ok"*. This ON experienced that one patient felt safe due to the contact possibility, expressing, *"I have the impression that she feels safe at home with this service - and she does not take more contact than usually [sic]"*. The ON experienced that this patient just called to check if the VC equipment functioned correctly: *"And if it's been a week or so, it happens that she just calls to test and check whether it works"* (ON3). The nurse felt that VC provided reassurance to the patients.

3.3. Adaption of relevant virtual care in person- and goal-oriented practice

The ONs' lived experiences during use of VC meetings shed light on the importance of the visual dimension in interaction. Virtual care using tablets was also experienced to be relevant in person- and goal-oriented practice. Theme clusters were 1) seeing each other, 2) virtual informational support, and 3) virtual patient mapping.

3.3.1. Seeing each other

ONs were focused on building good relationships with patients as individuals. They described person-centeredness as forming good relationships (*"getting in on people"*) and gaining an understanding of *"the whole person"*. ON4 explained it this way: *"I think that closeness is important - especially in order to build a good relationship so that you can really get to know people. With home visits - then you get in a way - yes - you get such a perception of the whole person - you do"*.

The ONs had been on home visits with all patients before they started virtual follow-up care using tablets. They had established personal contact building trust: "*… we 'build' patients' trust in home visits*" (ON2). VC did not provide the same experience of closeness as home visits. VC, specifically seeing and sensing the other person's expression, was experienced by ON4 in this way: "*… talking to a picture in a way"*. On the other hand, ONs experienced VC to be more personal than phone calls because they had the opportunity to observe each other while talking, as ON3 explained: *"It's more personal than just talking; you can make eye contact"*. ON2 shared a similar experience of the personal focus, saying, *"I find that I have a little more focus on the patient when I see him"*. Seeing each other when using VC helped both parties comprehend each other's messages and reactions. It also made ONs more conscious of how they behaved with patients: *"You have to think a little more about how you react because they are trying to read your expressions"* (ON3).

3.3.2. Virtual informational support

The ONs found virtual care to be useful in informational support. They experienced that patients had a need for repeated information exchange across service levels, and after hospital consultations, patients had a need for follow-up care. ONs were aware of what information patients received in the hospital, and ON1 experienced patients' need for follow-up, saying, *"Perhaps the patient did not understand or have [sic] forgotten half of what the doctor has said, and may feel that he has not even received information at all"*.

Using VC, the ONs experienced that they could provide necessar

and repeated information follow-up after patients' visits to specialist health care, *"… and afterwards you can continue to provide the necessary* support*"* (ON2).

3.3.3. *Virtual patient mapping*

In goal-oriented mapping practice, the ONs experienced VC as a useful tool. They used to '*go through'* usual mapping in cancer follow-up. By seeing the patient, ONs observed signs of tiredness, pain, or feelings such as fear, which they followed up with guidance. They also observed skin, medical equipment, and surgical wounds via VC. An example was an observation of a venous port during a VC meeting and as a result of the observation, the ON followed up with a home visit. Another example was observing a surgical wound: *"It had swelled up and the stitches were badly pulled together"* (ON4).

With a goal-oriented focus, ONs found that VC meetings eliminated unnecessary dialogue: *"With VC, we get straight to the problem"* (ON2). However, the ONs experienced that with VC, it was possible for both parties to forget to discuss details of importance in the health situation. ON1 told about one experience: *"I had a conversation once, and I felt like, oh - should I have been on a home visit here or should that VC have lasted longer? You know, I forgot to ask about something I had thought of"*. When such situations occurred, they experienced a need to make a new VC call.

4. Discussion

The ONs participating in this study indicated they were striving to provide quality follow-up care in accordance with competencies described in the oncology nursing curriculum (Norwegian Ministry of Education and Research, 2005). They seem to think and act from the person-centered perspective of experts rooted in oncology nursing culture (Benner, 1984; McCormack and McCance, 2017; Parse, 1992). The ONs' experienced the use of VC as a quality-promoting supplement to traditional follow-up care they usually provided for cancer patients in three Norwegian rural municipalities. The ONs were concerned that the use of VC should not have a negative effect on quality of care, which should be safe, effective, person-centered and timely (Michell, 2008). Therefore, they continuously assessed the appropriateness of the use of virtual follow-up. Assessments were carried out from the time patients were selected for VC follow-up, and then continuously. They described assessments based on considerations on patients' strain in health situations and care needs at the time as well as in the future. The ONs considered the process of familiarization with VC technology stressful for patients in serious health situations. Our results show that ONs were skeptical about the use of VC when the patient seemed very uneasy, for example, when the patient had been informed that their disease had worsened. Rather than VC meetings, the ONs thought home visits were appropriate in such situations. A recent review emphasizes the need for considerations regarding whether patients are at risk of extending distress (Badr et al., 2019). Research suggests that patients in such situations may benefit from close follow-up and easy access to support meeting psychosocial as well as physical needs (Ali et al., 2018; de Leeuw and Larsson, 2013; Scott, 2019). Studies also indicate that VC cannot replace physical presence in all nursing situations but can be a complementary tool in primary cancer care (Nordtug et al., 2018). This corresponds to considerations made by ONs in this study. Based on their lived experiences indicating the importance of closeness, these ONs felt it necessary to be physically close when providing support and guidance when patients were in demanding situations. These results indicate a need for more research in regard to the relevance and significance of virtual follow-up in serious health situations.

The use of VC on portable tablets was described as facilitating contact and frequent follow-up. For participants included in the study, the use of portable tablets promoted reassuring contact and facilitated more frequent follow-up than traditional home visits. Both patients and ONs could contact each other wherever they were. The lack of restrictions with regard to time and place made it easier for patients to seek

consultations at will. The ONs could then provide person-centered quality care (McCormack and McCance, 2017; Michell, 2008; Parse, 1992). Knowing that patients in need could make contact via the tablet at any time of the day likely contributed to ON's reassurance that their follow-up was sufficiently close and frequent. It was also easy to contact the patient again if one had forgotten to ask about something or recor- ded something additional without the need to drive far by car again.

VC appeared to be beneficial in regard to the efficient use of ONs' working time. The use of VC in rural areas led to fewer long, time consuming journeys. Using VC, ONs had fewer home visits, but follow- up increased using virtual care. This positive effect of using VC in close follow-up of home-living patients in a variety of health situations is in line with the findings of other research (Nordtug et al., 2018; Rygg et al., 2018).

Using VC and thus avoiding home visits can also be beneficial to the health of cancer patients with impaired immune systems. Virtual follow- up care may reduce potentially harmful interpersonal contact. Recent research shows that there is an increasing trend in the use of internet- based communication among patients with cancer and their health care providers (Jiang et al., 2019). Reducing contact through the use of online audiovisual communication can be very important during periods of viral epidemics and pandemics such as the COVID-19 outbreak of 2020.

This study explored ONs' lived experiences of VC use as an adapta- tion of virtual care in person- and goal-oriented practice. The ONs participating in this study showed a focus on relationship building and person-oriented practice. In oncology nursing, close relationships with patients are central, and involvement and emotional closeness are necessary and inevitable in psychosocial care (Roberts and Snowball, 1999). Therefore, there is a need for professional nursing expertise (Benner, 1984). The Norwegian Ministry of Education and Research (2005) describe ONs as special nurses with necessary competence and expertise in the field.

Using tablets, the ONs were conscious to conduct their VC in places where they could maintain patient confidentiality and safety. Such an ethical approach is integral to the protection of patients' integrity and dignity (Ministry of Health and Care Norway, 1999). Using VC in follow- ups, the ONs highlighted the importance of the visual dimension of communication, which is of importance with regard to interpreting and understanding the patients' signals and for maintaining social relations with patients (Hargie, 2016; Motsching R, 2014). Seeing the patient was perceived as beneficial for assessment of the patient's reactions in the health situation. Conversations were goal directed, and the visual aspect was convenient for mapping and monitoring care needs and the provi- sion of patient-centered counseling. Telephone calls do not allow the ONs to observe and assess a patient's condition in the same way that VC does (Rush et al., 2018a,b; Rush et al., 2018a,b; Rygg et al., 2018). On the other hand, the literature reports contradictory findings in terms of the ability to interpret nonverbal communication using VC. Some studies show a recognized loss of subtleties in communication, such as facial details and expressions that are difficult to discern (Taylor et al., 2012). However, our findings highlight the benefits of being able to see each other and interpret nonverbal messages, which is especially beneficial in the case of patients with hearing loss. These ONs thought they could see and interpret the patient's nonverbal expressions of fear, fatigue, and pain. Perhaps this was due to the fact that the ONs were experienced and knew the culture well. It may be different with patients from other cultures or inexperienced ONs. This indicates the need for more research on the visual dimension of virtual versus face-to-face communication. For healthcare professionals using tablets, other research has identified some difficulty in observing physical details, such as the color of a patient's skin (Nordtug et al., 2018). By compar- ison, our study indicates that ONs may observe skin, medical equipment, and surgical wounds via tablets. This may be due to an improvement in image quality that has occurred in recent years. In VC interactions with patients, the ONs evaluated and assessed some patients' support needs

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based on virtual clinical observations.

This study indicated that ONs were person-centered and goal-oriented. Their lived experiences of VC use was compatible with an understanding of quality care, described as timely, efficient, effective, patient-centered, and safe (Michell, 2008). As expert nurses, they relied on their clinical knowledge to comprehensively assess the patient's situation and act on the basis of a deep and intuitive understanding of the circumstances (Benner, 1984). Previous research emphasized the importance of ON follow-up as an "artistry" in the sense of person-centered caring (Brataas et al., 2009). In this study, ONs reported that the use of VC led to short and goal-directed conversations. Discussion of relevant topics sometimes was forgotten during VC. These findings indicate a need for further research about the quality and limitations of the use of virtual care in the follow-up care of home-living patients with cancer.

4.1. Strengths and limitations

This study provides useful data in a little explored area. The study included all four ONs in three rural Norwegian municipalities. Despite its limitations of a short duration (three months) and few (four) participants, this study was strengthened by being focused in terms of the phenomenon studied, and the results being based on thorough analysis of more than 100 relevant text sequences. The findings show accordance between the four participants in terms of what and how their lived experiences with the phenomenon were, indicating data saturation.

The analyses were conducted rigorously by closely adhering to the chosen methodology and collaboration of the three researchers. Although complete bracketing was not possible, we intended to reduce researcher biases by following steps by Greening (2019). First we clarified what knowledge existed in the field, and then during interviewing, we strived to disregard our own preconceptions. To reduce biases due to inherent assumptions, two researchers analyzed the data material while continuously discussing the credibility of the findings. Thereafter they discussed findings with a third researcher who also looked thoroughly at whether and how the findings were rooted in the data material. To have intersubjective validation of the themes presented, follow-up emails were sent to two of the participants for member checking of the themes.

4.2. Implications for clinical practice

The study highlights the benefits of VC as a supplement in clinical practice, and nurse leaders in primary care can play a significant role in advancing and improving the efficiency of care for patients with cancer by integrating virtual care into traditional care. The visual aspect of VC makes this tool useful for observations, information exchange, and patient counseling. During future pandemics, the use of VC may offer protection to cancer patients with a compromised immune system.

5. Conclusion

The use of VC may contribute to accessible, frequent and patient-safe follow-up and simultaneously reduce the time ONs spend traveling for home visits in rural areas. This topic is timely as nurses strive to tackle challenges related to the COVID-19 pandemic. Virtual care as a shift in the way ONs manage patients in the community may be of great importance for people suffering from cancer. Nevertheless, this study points to the need to individualize and assess the appropriateness of VC use in a variety of situations. There is a need for larger-scale studies on how VC use may influence quality of care for patients in varying health situations and for longitudinal investigations carried out in rural as well as urban areas.

CRediT author statement

Lisbeth Østgaard Rygg: Conceptualization, Methodology, Funding

acquisition, Investigation, Resources, Data curation, Validation, Visu- alization, Project administration, Writing - original draft.

Bente Nordtug: Conceptualization, Data Curation, Investigation, Funding acquisition, Writing - Review & Editing

Hildfrid V. Brataas: Conceptualization, Methodology, Data cura- tion, Validation, Writing - original draft, Review & Editing, Supervision, Funding acquisition

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Declaration of competing interest

No conflict of interest has been declared by the authors.

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Original research

Telenursing home care and COVID-19: a qualitative study

Zeynab Kord,[1] Zhila Fereidouni,[2] Mohammad Saeed Mirzaee,[3] Zeinab Alizadeh,[4] Mohammad Behnammoghadam ,[5,6] Malihe Rezaei,[7] Naeem Abdi,[8] Fatemeh Delfani,[9] Parisa Zaj[10]

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For numbered affiliations see end of article.

Correspondence to
Mr Mohammad Behnammoghadam and Ms Malihe Rezaei, Department of Nursing, Yasuj University of Medical Sciences, Yasuj, Iran; mbehnam1363@gmail.com, maliherezaei8954@gmail.com

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ABSTRACT

Background The COVID-19 pandemic has led to many challenges such as increased number of patients and the risk of the disease progress in the world's healthcare systems, especially nursing. The capacity of technology can help nursing in such conditions. The aim of this study was to explore the lived experiences of patients with COVID-19 with home care by using telenursing.

Methods The present study is a qualitative research conducted using the descriptive phenomenological method. The participants were selected using purposive sampling method and considering the inclusion and exclusion criteria. After obtaining ethical approval, data were collected through semistructured interviews. Open-ended questions and follow-up were used in the interviews. The interviews were conducted using Skype application and telephone. All data were recorded, and MAXQDA software was used to manage the data. Data analysis was performed using Colaizzi's seven-step method. Lincoln and Guba's criteria were used to evaluate the trustworthiness of the data.

Results The main themes and their subthemes included 'facilitators' (improvement of relationships, adequate education and counselling, adequate care and support, improvement and promotion of health) and 'barriers' (lack of previous knowledge and experience, infrastructure problems, confusion in hospital programmes and the pressure caused by the COVID-19 pandemic).

Conclusion Given the potential capacity of telenursing, strong field studies are recommended to be conducted in this area. The results of such studies can contribute to the rapid and serious use of telenursing in the area of care, education, support, follow-up and counselling of patients.

Key messages

What was already known?

- Telenursing was one of the most important methods for nursing care. Telenursing can improve quality of care and patient outcomes.

What are the new findings?

- The results of the present study revealed that accurate identification of the facilitators and barriers of telenursing for the home care of COVID-19 patients could contribute to the effective and efficient implementation of this technology

What is their significance?

- Clinical: Caregiving facilitators can facilitate the implementation of nursing care and, consequently, improve the health of patients.
- Research: to apply the results of this research with regard to the use of telenursing as quickly as possible in the field of care, education, patient support, and patient follow-up and counseling through conducting strong field research

and vomiting in patients.[1] As a pandemic, the COVID-19 crisis has given rise to many problems in the health system of different countries.[2] A large number of patients and referrals to hospitals has increased the number of hospitalisations, treatment costs and work pressure on nurses.[3–5] From the outset of the pandemic, nurses as health-care staffs have always provided a variety of hospital, social and home services.[6 7] Given the various conditions and care needs of patients with COVID-19, continuity of care

BACK

GROUND

COVID-19 is a viral disease that causes various respiratory symptoms and other symptoms such as taste problems, nausea

for these patients is important as it may facilitate the treatment process, improve the condition of the disease and control its complications.[8] Home care is an aspect of continuity of care which can be effective in facilitating the treatment process of the patients who do not need hospitalisation, and their care needs can be managed and

followed at home.[9 10] Continuity of home care is one of the important duties of nurses, which can be done either in-person or in-absentia.[11] In-absentia methods such as remote care through technology are used to provide necessary and fair care services to the patients who are at home and do not have access to some particular services.[12 13] Nurses can use available technologies such as mobile phones, computers and existing communication applications such as Instagram, WhatsApp and Telegram in order to continue care and provide ongoing care services.[10 14] It is also possible to manage and provide care services through using precreated e-learning programmes such as Medscape or creating training programmes which can be installed on electronic devices. Telenursing involves the use of technology tools and facilities for providing remote healthcare services.[15] Nowadays, the use of technology is inevitable in the life of people[16 17] so that it can be used effectively in different critical situations. Telenursing provides access to health services, which can affect the condition of remote patients.[18] Nursing services performed in telenursing include patient triage, symptom management, education and control of using care tools such as oxygen capsules and masks through telephone and at home.[19–22] Counselling, education, diagnosis and record of patients' information are also possible through telenursing.[23] Among advantages of telenursing, mention may be made of continuous equitable care and access to remote services.[10 24 25] Telenursing is also effective for telecommunications and the use of technology for inaccessible regions such as villages.[26 27] Telenursing and the use of technology are increasingly developing in remote nursing care.[28] Understanding the experiences of patients will help us how to use telenursing for investigating the barriers and facilitators of it in patients with COVID-19. Qualitative research is the best way for understanding the experiences of patients with COVID-19 with life as well as care processes, facilitators and barriers.[29] Qualitative research, without intervention, examines the experiences of individuals as they actually happen. The most appropriate method of qualitative research for investigating the lived experiences of patients is a phenomenological method.[30] Phenomenology represents experiences which have occurred in one's life.[31] Descriptive phenomenological method is used to investigate the main structure of people's experiences and explain them as completely and accurately as possible.[32] Given the fact that there was no study examining the lived experiences of patients with COVID-19 with telenursing in home care, the present study was conducted in Iran to explore the lived experiences of patients with COVID-19 with home care through telenursing.

METHODS

The aim, design, and setting of the study

The aim of this study was to explore the lived experiences of patients with COVID-19 with home care by using telenursing. The present study was a qualitative research conducted using descriptive

phenomenological method in the period from April to July 2020. The study setting was a hospital in yasuj city in Iran. The study aimed to investigate and determine the lived experiences of patients with COVID-19 with home care through telenursing.

Study participants

In this study, 20 participants were selected using purposive sampling method. Determining no sample size, sampling was continued until data saturation was reached. The samples included patients with COVID-19 who were discharged from the hospital and were continuing their care at home and through telenursing. Inclusion criteria consisted of having a positive COVID-19 test, history of hospitalisation in COVID-19 ward, literacy, ability to use Skype and mobile phone, ability to communicate and having adequate time for interview. Exclusion criteria were the patient's reluctance to participate in the study, limited cooperation caused by the patient's connection to ventilator or other restrictive devices at home.

Data collection procedures

Semistructured interviews were used for data collec- tion. The time of each interview ranged from 40 to 90 min. The following are examples of questions asked in interviews: 'Tell us about your experience of tele- nursing in home care.' Or 'How has been your daily experience of telenursing in home care?' Follow-up questions were used during the interviews to access more data and deepen understanding of the patients' experiences. In order to maintain social distancing and prevent the transmission of the disease and as it was impossible to attend the patients' home, remote interviews were conducted by Skype application and via mobile phone based on the patients' preferences. The interviewer was experienced in conducting qualitative interviews. With the permission of the patients, all interviews were transcribed and then typed verbatim by the interviewer. In order to manage the information and text of the interviews, MAXQDA V.10 software was used with respect to the principles of confidentiality and privacy.

Data analysis

Colazzi's seven-step method was used for data analysis. The first step was the collection of descriptions based on which the patients' experiences and descriptions of home care were collected in the form of telenursing (video call via Skype, telephone call and recording of interviews). The second step or understanding the depth of the meanings was done by delving deeper into the text of the interviews to discover the meanings (verbatim transcription of the interviews, rereading the transcribed text, delving deeper into the patients' utterances and gaining a general understanding of them). In the third step or extraction of important sentences, very significant statements were

extracted from the participants' utterances (return to the patients' utterances, use of underline to identify more important statements). In the fourth step, or the process of giving meaning to important statements, new meanings/concepts were given to the extracted expressions (extracting explanations and important parts of patients' statements and giving them meaning through specific and new concepts). In the fifth step or categorisation of concepts/meanings and topics, the related concepts were categorised (the resulting concepts were put in similar and specific categories). In step six or the exhaustive description of the intended subjects, the categorised concepts were described and examined in more detail (the intended phenomenon was described clearly and unambiguously). Finally, in step seven, or validation of the findings, the data were validated using the Lincoln and Cuba criteria (including credibility, transferability, dependability, and confirmability).

Trustworthiness

Different methods were used to increase the validity of the study. For instance, the data were coded and classified independently by the researchers, and the extracted codes were reviewed by the research team. For credibility, the researchers frequently contacted patients and read the interviews regularly. For transferability, the researchers used thick description to describe all details of the research, from sampling to data collection and analysis, as well as review and comparison of the data. Also, the participants were selected with maximum variation. For dependability, peer review and review of the encodings were performed by two qualitative research experts. To establish confirmability, the researchers used biased method of questioning (using more than two questions to investigate the phenomenon).

RESULTS

Finally, 20 patients with COVID-19 participated in the study. The mean and SD of the patients' age was 42.15±6.643. Eleven (55%) women and nine (45%) men participated in the study. Fifteen (75%) participants were married, and five (25%) were single. Participants P1, P4, P7, P12, P14 and P18 lived in rural areas and other participants in urban areas.

Four (20%) participants had a history of receiving telenursing, and 16 (80%) participants did not hither to use any telenursing services. The mean and SD of the days of patients' hospitalisation was 12.15±2.254. Also, the mean and SD of the days of receiving home care services through telenursing was 9.95±2.416 (table 1).

A total number of 200 concepts were obtained from the statements of the subjects, from which two main themes and nine subthemes were extracted. The main themes and their subthemes included 'facilitators'

Table 1 Characteristics of the participating patients

ID	Age	Sex	Marriage	Telenursing history	History of admission in hospital (days)	Telenursing home care history (days)
P1	35	F	Married	No	13	14
P2	39	M	Married	Yes	10	8
P3	35	F	Married	No	14	7
P4	35	F	Married	No	15	7
P5	40	M	Single	No	14	7
P6	42	F	Married	No	14	14
P7	46	M	Married	No	13	10
P8	49	F	Married	Yes	13	11
P9	43	F	Married	No	10	9
P10	32	M	Single	No	9	9
P11	47	F	Married	No	10	14
P12	52	F	Married	No	14	13
P13	50	M	Married	No	14	12
P14	51	M	Single	No	8	11
P15	51	M	Married	Yes	9	10
P16	48	F	Married	No	10	9
P17	36	M	Single	No	14	9
P18	37	F	Married	No	15	10
P19	34	F	Single	Yes	11	8

P20	41	M	Married	No	13	7
M±SD	42.15±6.643	–	–	–	12.15±2.254	9.95±2.416
Total	N=20					

F, Female; ID, Identification; M, Male; M±SD, Mean ± Standard Deviation; N, Number; P, Participant.

Table 2 Concepts, subthemes and themes obtained in the study

Themes	Subthemes	Concepts
Facilitators	Improvement of relationship	Adequate relationship, the establishment of relationship, intimate relationship, mutual trust
	Adequate education and counselling	Effective education, adequate consultation, counselling provision, acceptable education, follow-up and counselling, constant education and counselling, counselling adequacy
	Adequate care and support	Continuous care, effective care, useful care and support, comprehensive support, support and defence of the patient, continuity of care
	Improvement and promotion of health	Rapid recovery, promotion of health and well-being, more health, feeling more better, accelerating the health process
Barriers	Lack of previous knowledge and experience	Low awareness, insufficient experience, insufficient awareness and cognition, lack of previous experience, lack of previous knowledge
	Infrastructure problems	Poor internet, hardware-related problems, the difficulty of working with software, lack of necessary infrastructure, cost-related problems, financial issues, costliness
	Confusion in hospital programmes	Lack of a plan, confusion in the implementation of telenursing programme, no priority of telenursing, lack of proper instructions
	Pressures caused by the COVID-19 pandemic	Problems caused by COVID-19, numerous patients, a high number of hospitalised patients, pressures of the disease, problems of the pandemic

COVID-19, Coronavirus disease 2019.

(improvement of relationships, adequate education and counselling, adequate care and support, improvement and promotion of health) and 'barriers' (lack of previous knowledge and experience, infrastructure problems, confusion in hospital programmes and pressure caused by the COVID-19 pandemic) (table 2).

FACILITATORS

The first main theme extracted from the categorisation of important concepts in the study was 'facilitators.' Findings obtained from the statements of the patients showed that the most facilitating factors effective in the telenursing process for COVID-19 home care included improvement of relationships, adequate education and counselling, adequate care and support and improvement and promotion of health.

Improvement of relationships

It was extracted from the statements of the patients that because of the impossibility of physical presence in the hospital, telenursing had led to a closer and more effective relationship between nurse and patient. In such a situation, the patients have been able to communicate more easily with their nurses. For the patients, communication was a serious and vital matter in gaining access to care, especially remote care, and they believed that through telenursing, the nurse has more time to dedicate to patients. Contrary to the expectations of the patients, remote communication between the nurse and the patient was established correctly, leading to the patient's sense of closeness to and trust with the nurse. The patients opined that telecommunications functioned better than their physical presence in the hospital.

> I think a good relationship was established between the nurse and me…I felt more intimacy. (P3)
> My nurse pays closer attention to me; although there is a distance between us, our relationship is stronger than when I was in the hospital. (P12)

> This communication system is much better than going to the hospital regularly, especially in this condition. Our close relationship has somehow led to a mutual trust. (P8)
> I was very comfortable and eager; I was no longer shy to ask my nurse any question; she also trusted me a lot. (P2).

Adequate education and counselling

The patients mentioned that all of their questions and concerns were fully answered by the nurse and that they were given adequate education. The nurse provided easy and appropriate education on a variety of needs, such as questions about medication, diet and the use of equipment. The nurses provided their educa- tion in simple language as patiently as possible and in line with the needs of the patients. They believed that the nurse had provided adequate counselling in the required areas and had followed the issue. The nurses consulted the patients about any issue occupying their minds, and nurses also provided the required counsel- ling to them with extra motivation and energy.

> I got an accurate and complete answer to every question of mine. (P16)
> When a question was raised, and I asked it, the nurse answered such that I fully understood. (P1)
>
> Apart from asking her about my issues, she also provided me with good advices. (P9)
>
> The educations provided by the nurses were simple and understandable; I could easily understand what she meant. (P15)
>
> Not only did she provide me with consultations, but she also followed my work to be sure I had done it. (P18)
>
> 'My nurse was very energetic and eager to teach me, and I asked her to give me consultation in most of my works as she taught me accurately and adequately. (P4).

Adequate care and support

According to the patients, remote care and continuous support provided by the nurses were so helpful. Various cares such as health, nutritional, medical and respiratory cares of patients with COVID-19, which were considered very important by the patients, were carefully provided by the nurses. The nurse developed the care plan based on the preferences and values of the family and the individual. The care plan provided the patients with a sense of calmness and reduced anxiety. According to the patients, the nurses followed their care accurately and implemented it completely. Adequate support was provided by the nurses for the patients who were at home in order to implement a care plan and assess the condition by the patients. The patients were supported by the nurses so that in most cases, the support needs and outside the home follow-ups were done by the nurses. In any condition, the nurses emphasised that the patient was right and that the nurse was obliged to defend their rights and resolve their problems. Serious support and ongoing care plans for the patients were acceptable to them and their family members. They were completely satisfied that their care was purposeful and provided in a specific framework.

> I didn't know that there should be a plan for care, and the plans provided by my nurse gave me solace. (P5)
>
> When the nurse explained to me what to do, I was motivated to perform the care carefully. (P19)
>
> All my family members participated in my care, and we proceeded according to the nurse's plan. (P4)
>
> Each time I was to receive care, the nurse asked me questions about my and my family's values. (P6)
>
> While the necessary care was provided by the nurse, she followed up the implementation of the care and what I had to do; even the outcome was important to the nurse. (P1)
>
> My counselor was very supportive of me and followed up my works, especially in this situation where I could not do my works in person. (P17)
>
> My nurse told me that it was her duty to support me completely, and she showed this practically by following up. (P13)
>
> I didn't really see any difference between home and hospital; the only difference was that I was much more comfortable at home, and my nurse was constantly caring for me. (P3)
>
> I felt very secure that I was taking care of myself and that I was being cared for. (P18)

Improvement and promotion of health

According to the patients, telenursing created a condition in which their health was improved. Remote care improved the patients' health and made them recover faster. The patients believed that comprehensive and continuous control of them by the nurse and at home accelerated the process of health and relieved the feeling of discomfort. Constant promotion of health is

effective when patients are involved in their care. Tele- nursing helps to identify patients' problems and solve them, thereby improving the patients' condition. Tele- nursing even contributes to the discovery of health- related strengths and weaknesses and the creation of a supportive path to improve the health of patients.

> Every day I feel I'm getting better. (P2)
> With this kind of remote care and given that I'm constantly receiving attention, I feel that my recovery process is faster. (P7)
> The nurse discovers my problems from the distance and talks to me about them. I participate in the care process. (P10)
> I feel healthier and better since the day I was cared for remotely. (P3)
> My strengths and weaknesses are revealed that helps me regain my health sooner. (P17)
> I thought I would have recovered later if home care had not been continued; by telenursing, I recovered sooner than I expected. (P15)

BARRIERS

Another main theme that emerged from the important concepts extracted from the patients' statements was the 'barriers' to telenursing for home care of patients with COVID-19. This theme included the subthemes of lack of previous knowledge and experience, infrastructure problems, confusion in hospital programmes and the pressure caused by the COVID-19 pandemic.

Lack of previous knowledge and experience

A small number of the patients talked about previous telenursing experiences, emphasising that such experiences were effective in accepting telenursing and preparing them for remote care. According to the patients, the lack of initial knowledge and understanding about the process and the existence of remote nursing care methods was an important challenge for them. Some patients found this method interesting, but they also found it stressful as they were exposed to a new type of care without any prior knowledge in which almost unfamiliar tools were used through an unknown method. Although the necessary educations and guides were provided by the nurses, an unknown perception was created in the minds of patients about the consequences of telenursing, which was due to the lack of prior knowledge. Most patients emphasised that they had no prior knowledge of remote education and care.

> I had no previous familiarity with telecommunication; I didn't know at all that there is a way of taking care of patients at home. (P14)
> The remote method was not so familiar to me. I had heard about it, but had no experience. (P11)
> I had experienced it before. I think anyone who experiences telenursing can accept it better for the next time. (P1)
> I was stressed that what this method would look like or what would be the outcome of using this method.

> I was apprehensive about being in this situation or not being able to cope with it. (P16)
> As this method is very new and I had never heard of it before; it was interesting to me, but I wish I already knew about and was aware of telenursing. (P20)
> I didn't think that patients could be cared for by telenursing. But, I wish patients would be educated and informed about it from the beginning so that there would be no ambiguity about it in the mind of patients. (P7)
> I, who was not aware of and did not know enough about this method, was very afraid of participating in it. (P12)

Infrastructure problems

The patients stated that the existence of facilities and tools is very effective in implementing the remote care method. Perhaps the main obstacle to the implementation of this method is the issue of facilities. The internet platform, high-speed internet, financial efficiency and economic issues were emphasised by the patients. Moreover, the hardware through which the patients communicated with the nurse and even how to work with the recommended hardware or software was a challenge for the patients. They emphasised that the use of facilities and time for the telenursing process interfered with their daily activities, causing them to become exhausted and indifferent to telenursing.

> I sometimes had Internet problems, and this interrupted the connection process. (P12)
> Although I had a cell phone, sometimes working with the applications recommended by my nurse was difficult for me. (P9)
> Apart from having Internet problems, it was also costly for me as video call finished my internet package very quickly. (P6)
> I had never worked with a laptop before; it was really hard, and I had to ask others to help me. (P13)
> You had to spend more time on it, and it prevented you from doing your other activities; I think regular working with mobile and the Internet is boring as well. (P18)
> 'Constant purchase of Internet packages was costly; working with the related instruments and providing the equipment and facilities was itself also a challenge. (P11).

Confusion in hospital programs

The patients said in their statements that the hospital did not have a precise and coherent plan for the follow-up and continuation of remote care for patients with COVID-19. Existence of basic guidelines and structures developed by the hospital can strengthen telenursing and lead to its better and more scientific implementation. This reflects the hospital's confusion with regard to the current condition of telenursing for patients with COVID-19 at home. Some patients believed that this confusion might have been due to

the fact that telenursing and remote home care are not the priorities of the hospitals.

> I think the hospital itself was confused and had no specific telenursing program for COVID-19 patients. (P5)
> The hospital's program was not coherent; perhaps the program was more nurse-centered. (P4)
> No specific guideline or program was offered on telenursing during the hospitalization period. (P2) A good and complete program can certainly lead to better telenursing. (P19)
> Well! The condition of the disease made the hospital more confused about telenursing. (P10)
> I feel that telenursing has not been among the hospital's priorities in the current situation. (P16)
> I expected the hospital to focus more on providing a clear and concise plan for telenursing and how it is implemented. (P5).

The pressure caused by the COVID-19 pandemic

The results showed that the pressure caused by the pandemic was an important obstacle to telenursing from the patients' point of view. Based on the after- math of the COVID-19 pandemic, such as numerous hospitalisations, a high number of infected people, and societal challenges, telenursing is not prioritised by the healthcare centres. Accordingly, the patients believed that during this period, telenursing could have a poten- tial capacity to facilitate the care and support of a large number of patients, especially in their homes.

> I think the number of patients is so high that there is no time to take care of them by telenursing. (P20)
> In this hard condition of pandemic, telenursing is not really a priority, as there is a lot of pressure on the medical staff. (P11)
> It seems that there is no time to implement telenursing in the current situation with so much pressure on the staff and the high number of hospitalized patients, but I think the implementation of telenursing is itself a supportive capacity to help the medical staff. (P18)
> Although the number of patients is high and hospitals are under pressure, it seems that telenursing can manage and care for so many patients at home. (P12).

DISCUSSION

The results of the study obtained from discovering the experiences of patients with COVID-19 showed that there was a set of facilitators and barriers with regard to the implementation of home care through telenursing. Caregiving facilitators can facilitate the implementation of nursing care and, consequently, improve the health of patients. Promotion of health is one of the important goals of nursing care, which along with improved condition of patients, should always be considered in the field of nursing care. In order to transform traditional nursing into a technology-based and updated nursing, it is necessary to pursue the use of telenursing in the field of

nursing care more seriously and to do so, sufficient resources and support are required.[33] To facilitate the establishment of effective telenursing, patients and the target population should be understood effectively so that we can have a correct understanding of the remote care process.[34] The findings of the study showed that telenursing had a significant effect on improving the relationship between the nurses and patients with COVID-19. In another study, telenursing improved the relationship between nurse and patient and successful communication was one of the achievements of telenursing.[35] According to the patients, adequate education and care support could occur through telenursing. Given that a pandemic can increase the possibility of transmission of infection among individuals, this condition can provide the nurses with the opportunity of providing remote nursing care.[36] In the intervention programme, the group that received remote care was better able to control their disease condition than the control group.[37] The results of a study showed that using remote care increased self-care and reduced fatigue in patients.[38] In some specific conditions, patients need to use remote care.[39] The quality of life of patients can be improved through using remote education and care.[40] Remote care programme can be used because of its cost-effectiveness, availability to follow-up on patient care and its ability to increase patient efficiency and recovery.[41] Given the significant effect of remote care on reducing anxiety in patients with COVID-19, it was recommended in a study to use this technology for home care.[42]

The needs of patients with COVID-19 include educational needs, adherence to medication, control of medical side effects, diet follow-up, psychological counselling, adherence to standards of care, healthcare and follow-up of disease outcomes, which can be facilitated through using telenursing.[7] Another finding of the study was the barriers to effective telenursing for patients with COVID-19, including lack of prior knowledge, the significance of necessary infrastructure, lack of clear hospital guide- lines and pressure caused by COVID-19. Severe conditions caused by COVID-19 have challenged the implementation of high-quality remote care.[43] Lack of information of policymakers about remote care and lack of adequate monitoring are the most important challenges of this technology during the pandemic in Iran.[44] Technology-related issues such as lack of instructions, inadequate education, lack of support are among the problems of remote nursing which have led to serious problems for nurses and patients.[45] Although COVID-19 pandemic has been associated with many challenges, the use of remote technology seems to be a necessity during this period.[46] [47]

One of the limitations of this study was the difficult cooperation of patients and their family members in interviews and participating in the study, which was removed by explaining the objec- tives and necessity of the research to them. One of the criteria for inclusion in this study was that the participants had the ability to work with the software in question, and if they did not have this ability, they did not enter the study.

CONCLUSION

The results of the present study revealed that accu- rate identification of the facilitators and barriers of telenursing for the home care of patients with COVID-19 could contribute to the effective and efficient implementation of this technology. Although the COVID-19 pandemic has led to a complex condition for nursing care systems, this condition can be used as an opportunity to strengthen the application of technology in nursing and improve the health of patients in this critical condition. The results of this study can help us to identify the capacities of telenursing and its progres- sive use in the area of nursing services in the near future. The reason is that nursing care as a leading profession needs to strengthen itself based on the current needs of society and technology. Given the appropriate access of Iranian people to the internet, telenursing can be used more seriously in remote nursing care. Therefore, it is recommended that more efforts be made to apply the results of this research with regard to the use of telenursing as quickly as possible in the field of care, education, patient support and patient follow-up and counselling through conducting strong field research. Supporting people by providing the necessary facilities to use telenursing is a very good suggestion for future research.

Author affiliations
[1]Department of Anesthesiology, Dezful University of Medical Sciences, Dezful, Iran
[2]Department of Medical Surgical Nursing, Nursing School, Fasa University of Medical Sciences, Fasa, Fars, Iran
[3]Department of Medical Surgical Nursing,School of Nursing and Midwifery, Iran University of Medical Sciences, Tehran, Iran
[4]Department of Anesthesiology, School of Medicine, Yasuj University of Medical Sciences, Yasuj, Iran
[5]Department of Critical Care, Yasuj University of Medical Sciences, Yasuj, Iran
[6]Critical Care Nursing, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran
[7]Department of Nuursing, Yasuj University of Medical Sciences, Yasuj, Iran
[8]Department of Anesthsiology, School of Paramedicine, Yasuj University of Medical Sciences, Yasuj, Iran
[9]Department of Medical Surgical Nursing, Iran University of Medical Sciences, Tehran, Iran
[10]Department of Anesthesiology, School of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

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ORCID iD

Mohammad Behnammoghadam http://orcid.org/0000-0002-6493-7025

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RESEARCHARTICLE

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Video consultation as nursing practice during early in-home care for premature infants and families viewed from the families' homes'

Mai-Britt Hägi-Pedersen[1,2] | **Hanne Kronborg**[2] | **Annelise Norlyk**[2]

[1]Department of Pediatrics, Slagelse Hospital, Region Sjælland, Slagelse, Denmark

[2]Department of Public Health, Faculty of Health, Aarhus University, Aarhus, Denmark

Correspondence
Mai-Britt Hägi-Pedersen, Department of Pediatrics, Slagelse Hospital, Region Sjælland, 4200 Slagelse Denmark.
Email: mhp_research@haegi.dk

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Abstract

Aim: This study examined how communication between nurses and families in video consultations in a neonatal early in-home care program unfolded in the context of parents' homes.

Design: A qualitative study based on focused observations supported by audio-recorded video consultations.

Methods: The data were collected through nine video consultations between nurses and families in an early in-home care program. The transcribed material was examined using inductive content analysis.

Findings: The analyses revealed the following themes: “Setting the scene,” “Weight as a point of reference” and “The pros and cons of technology.” The video consultations unfolded in a relaxed atmosphere, but also as one-way communication dominated by nurses, with the infant's weight as the focus. The study finds that a focus on training in video communication is needed to take full advantage of video consulta- tions' potential.

KEYWORDS
communication, nurses, nursing, nursing home care, observation, preterm, telenursing

1 | INTRODUCTION

Premature infant birth, defined as birth before gestational age 37 weeks (Broedsgaard & Wagner, 2005), is increasing worldwide (The Partnership for Maternal, Newborn, & Child Health, Save the Children, & World Health Organization, 2012). Premature infants need care and treatment in neonatal wards due to their immature and underdeveloped organs in the time after birth (Broedsgaard & Wagner, 2005) until they are stable, when the family gradually takes over primary care (Ortenstrand et al., 2001). Families of stable premature infants are offered early in-home care to smooth the transition from admission to discharge (Brodsgaard et al., 2015; Evanochko et al., 1996; Hägi-Pedersen et al., 2020; Holm, Clemensen, et al., 2019; Lundberg et al., 2016; Ortenstrand et al., 1999, 2001; Sturm, 2005). Early in-home care allows infants to stay at home for tube feeding and the establishment of breastfeeding (Brodsgaard et al., 2015) with close contact and support from neonatal nurses. Early in-home care started with home visits based on the possibility

Abbreviations: HSDPA, High Speed Downlink Packet Access; LTE, Long-term Evolution.

Clinical trial registration: REG-113–2014 and SJ-431.

TABLE 1 The characteristics of the infants and early in-home care

	Infant	Infant	Infant	Infant	Infant
Infant age at birth, gestational weeks	32 + 3	27 + 5	30 + 0	34 + 6	32 + 4
Number of recorded consultations, *N*	2	2	2	1	2
Number of planned consultations, *N*	10	4	6	2	9
Number of unplanned consultations, *N*	0	1	0	2	3
Location of ward	Zeeland	Zeeland	Zeeland	Jylland	Jylland
Length of in-home care, days	34	29	33	10	30
Exclusive breastfeeding one month after discharge	+	+	–[a]	+	+

[a]Never started breastfeeding.

of close, hands-on contact with the infant and family (Ortenstrand et al., 1999). However, hospitals with broader catchment areas often needed to offer in-hospital consultations due to organizational and distance-related challenges.

In Denmark, early in-home care programs are becoming standard care. The reorganization and centralization of health resources have generated a need to rethink how this care can be provided. The use of video consultations has been implemented in the last few years in the Danish context of early in-home care for premature infants (Hägi-Pedersen et al., 2020; Holm, Clemensen, et al., 2019). The potential of the use of video technology (Johansson et al., 2017) as a consultation method provides expanded opportunities, such as the advantages of visual contact and non-verbal cues between the parties, compared with the use of telephones. Video consultations are supposed to be efficient and convenient (Donaghy et al., 2019) for users; however, it is not known how technology affects the communication between nurse and family in the neonatal setting and how video consultations unfold.

Most neonatal wards adhere to the model of family-centred care (FCC) (Brodsgaard et al., 2015; Dellenmark-Blom & Wigert, 2014), defined as "a philosophy of care that fundamentally is about supporting and respecting the family's participation in their child's care through a partnership approach. Partnership is described by Coyne et al. as an approach to healthcare decision-making between the family and health care provider" (Coyne et al., 2018) based on the idea that families build on their strengths by participating in experiences that enhance control and inde- pendence through the recognition of each family's unique needs, resources and skills. Studies have shown that nurses are in con- trol of the degree of partnership (Brodsgaard et al., 2015) and that early in-home care is consistent with the concepts of FCC, where parents are the infant's primary caregiver and the nurse serves as a consultant (Dellenmark-Blom & Wigert, 2014). Thus, FCC relies on well-established communication between nurse and family. Accordingly, the communication between the neonatal nurse and family is essential in the setting of early in-home care.

Further studies have shown that families feel that video consultations during in-home care empower them in their roles as parents (Brodsgaard et al., 2015; Holm et al., 2019).

In summary, it seems that video consultations might succeed in supporting communication between parents and nurses. However, there is a lack of knowledge concerning how video communication unfolds in early in-home care. Consequently, the aim of this study was to describe how communication between nurses and families in video consultations in a neonatal early in-home care program un- folded in the context of families' homes.

2 | METHOD

The study takes its inspiration from Spradley's focused observations (Spradley, 1980) supported by recordings of the communication be- tween families and nurses during video consultations in a neonatal early in-home care program.

2.1 | Early in-home care program

Care in the neonatal wards was provided by nurses (RNs). The parents were informed about the early in-home care program on admission to the neonatal ward. When an infant started breastfeeding or bottle feeding and the family wished to go home and fulfilled the criteria for early in-home care, the family was offered the early in-home care program (Hägi-Pedersen et al., 2020). During early in-home care, the family handled the care of the infant, including tube feeding until the infant was fully breastfed or bottle-fed. Families had two to three planned video consultations per week that involved communication and the exchange of infor- mation and knowledge, including receiving advice on the infant's nutrition, the infant's current weight and bottle/breastfeeding, among other topics, from the nurses in the wards. In addition to the planned video consultations, families could contact the ward at all hours of the day.

TA B L E 2 An example of the meaning unit, codes, category and theme

Meaning unit	Codes	Category	Theme
pumping equipment sitting out to dry	Sterilization	The location of the consultations	Setting the scene
boy is playing on the floor	Playing		
mother asks the father to find her notes	Preparation	Pausing daily life	

natal experience ranged from 2.5–20 years.

2.3 | Participant observation and recorded communication

To cover both the video consultations and how they unfolded in the context of the families' homes, the data collection consisted of both observations and audio recordings of the nurses' and families' communication during the video consultations. The observation and recording took place from June 2017–July 2018. The observations were conducted in the families' homes mainly during the first and second planned video consultations between a nurse and a family. In total, nine consultations were observed. The observations were carried out by the first author, who has been a neonatal nurse for 8 years.

The observations were based on passive participant observation (i.e. focused observations) (Spradley, 1980). During the consultations, the observer sat near the family but in the background, so the focus of the observation remained between the nurse and family. To support the collection of data on how communication between nurses and families unfolded during the video consultations, a field note guide was created based on Spradley's dimensions—space, actor, activity, object, act, event, time, goal and feeling—to provide a rich description of the social situation (Spradley, 1980). The observations started approximately 10 min before the scheduled consultation. After each observation, the observer wrote prose text containing her immediate thoughts about the situation.

The video consultations were performed through the encrypted applications CareRoom and LiveCare provided by ViewCare a/s

Inductive content analysis was performed based on the approach of Graneheim and Lundman (2004). Initially, all the transcribed text was read several times to gain a sense of the whole. Then, the transcriptions were ordered in meaning units by asking "what the text says" (Graneheim & Lundman, 2004) about the communica- tion between the nurse and family and how the video consulta- tions unfolded.

The meaning units were labelled with codes according to the study aim of describing how communication unfolded between nurses and families in video consultations in an early in-home care program in the context of parents' homes since labelling meaning units with a code allows the data to be thought about in new and different ways (Graneheim & Lundman, 2004). The analysis continued through the ordering and grouping of the codes into subcategories, with similar content organized into broader categories according to meaningful patterns. After the broader categories were identified, the meaning units were read again and compared with the categories to ensure links between them. Finally, the underlying meaning, that is, the latent content of the categories, was formulated into themes (Graneheim & Lundman, 2004). During the whole process, all the au- thors discussed the emerging categories and themes until consensus was reached. The analysis process is illustrated in Table 2. Text sam- ples from the transcribed material are used to support the findings of the analysis.

2.5 | Ethical considerations

The study was registered with the Danish Protection Agency, file number REG-113-2014 and the Danish National Committee on Health Research Ethics, file number SJ-431. The ethical principles of

the Declaration of Helsinki were followed. All the participants were contacted by the first author to ensure they consented to the participation of the first author during the consultations with the nurses. Written consent was obtained from the families and the nurses before participation. Anonymized transcription and reporting were used to ensure the anonymity of the families and nurses.

2.6 | Findings

The analysis of the material revealed three themes: “Setting the scene,” “Weight as a point of reference” and “The pros and cons of technology”. The themes are elaborated by categories.

2.7 | Setting the scene

This theme covers the context where the video consultations unfolded in the families' homes in the early in-home care program.

2.7.1 | Category: The location of the consultation

The mother was home with the father and/or the infant's older siblings. They had already planned where the consultation would take place. Usually, the families had made a few notes with questions and specific information they needed:

> In my walk through the kitchen, I see breast pumping equipment sitting out to dry. The big boy is playing on the floor in the living room. The family chats while the mother is breastfeeding the infant on the couch. The mother asks the father to find her notes. The father heads to the table and hands the notes to the mother and sits down with the big boy on the floor…
>
> (Field note)

The infant played a central role in the determination of where the video consultation would occur, often near the infant's crib/nest. The homes were filled with artefacts of home life: laundry, sterilized nipple shields and bottles, toys, coffee cups, etc. There was often a scale near the infant's changing place, with a piece of cloth on it, indicating that it had been used recently. The families' homes and their surround- ings exuded peace and serenity. As the set time for the consultation approached, the families gathered around the phone on the sofa or around the dining table together with their prepared notes. The par- ents instructed older siblings to be quiet during the conversation with the nurse.

Thus, for the mother and father, involvement in early in-home care was a joint project. The consultations appeared important as daily life were put on standby when the consultations were taking

place. For example, the television would be paused with a “frozen” picture, or laundry might be left partially folded.

2.7.2 | Category: Pausing daily life

Although daily life was on standby, the video consultations allowed the families to engage in activities around the consultations. For ex- ample, an older sibling might want the father to perform gymnastics with her or to obtain coffee from the kitchen. Additionally, during the consultations, the mother and father comforted or fed the infant or talked to or comforted the other siblings. After finishing the con- sultations, the families resumed their daily lives, for example eating breakfast and they talked little about the consultations after they had ended the video call. When the parents talked about the video consultations, they reminded each other that their baby was doing well.

2.8 | Weight as a point of reference

Communication in the video consultations followed a specific pat- tern where the nurse asked most questions, and it was primarily one-way. The questions were mostly related to factual information, such as nutrition and weight and less about the well-being of the family and infant; however, the nurse always reminded the families that if they were the slightest bit uncertain, they were welcome to go to the hospital. The nurses asked questions about topics such as breastfeeding and elimination, but overall, the nurses' navigation from the start to the end of the consultations was anchored in ques- tions related to the infants' weight.

2.8.1 | Category: The infant's weight

The consultations all started with the nurse asking, “How are you doing?” or commenting on the infant's weight: “Have you weighed him today?” “How is he doing with his weight?” “When did you last weigh him?”. Hence, the nurses seemed to refer to the infant's weight to obtain factual information about the infant's well-being and provide or modify advice. The families also used the infant's weight to make decisions about the infant's nutrition and determine how much the infant had grown. The families responded to ques- tions such as “How is the infant doing?” with answers about the infant's weight gain or current weight. One mother commented on her infant's weight as follows: “…well, we also weighed him an extra time because we were so completely, it cannot be true…” Thus, the infant's weight acted as a very important point of reference for both the nurses and families.

At the beginning of the consultations, the infant's weight was talked about either positively, for example “…he is busy getting big now” and “You have a boy who is getting big?”, or less positively, for example “Yes, it's only 18 grams that he has put on in the last

3 days". These positive comments by the nurse and the parents' acknowledgment of the infant's thriving created a relaxed tone during the consultation.

2.8.2 | Category: Short and closed questions

The questions asked by the nurses were primarily short and closed. The parents answered with nods, "yes" or "no" responses or short comments that seemed to be a recognition of the nurses' advice or questions. Accordingly, the conversation shifted quickly between the participants. During the communication between the nurses and parents, the nurse often thought aloud when giving advice on the next step(s) in the care of the infant. This strategy seemed to have several purposes, ranging from buying time to formulate advice and determine how to present it to filling awkward pauses in communication.

> Nurse: So that's why I think you should give him uhh… (pauses to check the computer) a period when you don't put food in it [the tube]; uhh… maybe you should start at 12 noon or at 2 p.m. and then let him eat in the evening instead of in the morning uhh … do you understand what I mean?

As illustrated above, the nurses followed up with a closed question concerning the parents' understanding and acceptance of the advice given.

When the nurses did not have any more questions for the parents, they invited them to ask questions or talk about any difficulties: Nurse: "Okay, that's fine. And what else do you think we should talk about today?" This kind of invitation opened up the communication and the families responded with longer sentences or asked their prepared questions.

2.8.3 | Category: Acquaintance

In the consultations, the nurse's acquaintance with the family was important in establishing a relationship with the family. Accordingly, the depth of the questioning in the consultation seemed to vary in relation to the nurse's knowledge of the family and the infant's history. The nurse's preparation and/or acquaintance with the family meant that the nurse did not (have to) ask for factual details about the infant or about how long the family had been at home. Thus, nurses who knew the families started asking questions about the infant's status and it made it easy for the parents and the nurses to smile, use humour and joke together. (*Laughing*) Nurse: "Does it work well at home?' Mother: 'Yes, it does; it is great – great to come home'. Nurse: 'It looks cozy. Mother: 'Thank you'". In contrast, nurses who did not have factual knowledge of the families started by ask- ing several questions about the infant's status and weight and said they needed to read from the computer while they were talking. This

approach to the consultations influenced the communication, making it more formal and superficial and the consultations shorter.

2.9 | The pros and cons of technology

Several disruptions occurred during the consultations. Change in direction during the communication was often caused by a disturbance due to technology. For example, the camera might be turned in a different direction, the alarm for the infant's next meal might go off, or something might happen on the screen. These disturbances created ruptures in the communication.

2.9.1 | Category: Keeping the consultation on track

The nurses or the parents had to repeat themselves or were distracted from the topic being discussed. However, the disruption could unintentionally change the consultations. In one instance, the nurse and the mother had just talked seriously about breastfeeding issues, when the nurse unintentionally turned the screen and as the nurse fumbled to turn the screen back again, the mother and nurse had a longer, funny, informal talk about this: *Mother:* “Nice moving boxes (laughs). Hope no one has left their shoes (ed: a Danish term for dying)…” The nurse returned to dealing with the infant, but the topic changed. In another situation, the father was running around the room chasing a wasp. The mother was distracted and grinning while trying to keep her eyes on the screen. In such comical situ- ations, nurses were sent on a detour: they found these situations amusing but often returned to formal conversations with a new question. Thus, interruptions and detours affected the communica- tion and could lead to unfinished communication about potentially important issues.

2.9.2 | Category: Confidence with the technology

Often, loss of contact occurred during the consultations due to the technology and the nurses had to call the families again. The challenges usually concerned problems hearing each other. This could mean that some of the consultation time was used to change settings on the phone or looking for a headset to ensure good sound during the consultations. Nonetheless, both parties joked about the sound difficulties (e.g. “Dad says, ‘It's good when it (ed: technology) works’”) or attributed these challenges to a poor Internet connection/network in the area.

The nurses' confidence with video also influenced the communi- cation. When nurses used video to see the infant sleeping in the crib or in the mother's or father's arms, video appeared an opportunity to engage in pleasant communication despite not being present in per- son in the family's home. This approach of seeing the infant through the camera was met with recognition in the form of smiles and quiet laughter by the parents.

However, some nurses seemed less confident with video or less attentive to the location of the camera, perhaps commenting on their own appearance on the screen. In other cases, the nurses did not point the screen at themselves but rather only showed a small portion of themselves or did not show themselves at all. On one occasion, the consultation started rather oddly. The nurse had forgotten to turn the camera towards herself, so the camera was pointed at the nurse's feet during the consultation. The family could not avoid noticing this but did not comment on it. Instead, the family acted as if they could see the nurse, holding the screen in front of them during the consultation. Nonetheless, the consultation had the same progression as others in terms of the questions.

3 | DISCUSSION

The findings of how communication between the nurses and families in video consultations unfolded in the early in-home care program showed a relaxed atmosphere in the families' homes. They also showed that the video consultations were one-way communication dominated by the nurses with the infant's weight as the central topic. The communication between the nurses and families was influenced by detours and disturbances.

The theme “setting the scene” indicated that families had become settled at home by the time of the consultations. Family life had begun with all the practical concerns in parenting a premature infant and being at home seemed to create a relaxed atmosphere. This is supported by previous interview studies that reported families emphasizing that coming home from the hospital allowed them be in a free and unrestricted area, which provided freedom and greater independence and made them feel relaxed (Dellenmark-Blom & Wigert, 2014; Holm, Brodsgaard, et al., 2019). As illustrated in our findings, families prepared for the consultations and paused their daily lives before and during the consultations. This indicates that the consultations were significant, as also noted by Holm, Brodsgaard, et al. (2019) and Lindberg (2013). According to Lindberg (2013), parents consider video consultations a source of assistance and still maintain bonds with the staff at the unit.

Our findings also highlighted that parents were familiar with the importance of the infants' weight, illustrating an apparent mutual understanding of the significance of premature infants' weight and weight gain in the neonatal period, as also stated by MedlinePlus (2020), Moro et al. (2015) and Ortenstrand et al. (1999). Studies providing knowledge for early in-home care have all recommended weighing the infant to confirm that he or she is doing well and developing as he or she should (Brodsgaard et al., 2015; Hägi-Pedersen et al., 2020; Holm, Clemensen, et al., 2019; Ortenstrand et al., 1999). Weight is an objective, simple, non-invasive method (Schlegel-Pratt & Heizer, 1990) of gathering important information about infant thriving. However, our study highlighted that the status of weight as a point of reference deeply influenced how the communication between the nurses and families unfolded during the video consul- tations. Our findings suggested that this focus on the infant's weight

combined with the nurse-dominated consultation could convey that the consultation is primarily founded on the paradigm of medical sci- ence. Our findings indicated that this approach to communication, where nurses primarily collected information through standardized questions, could mean that nurses only used video to a limited ex- tent to gather further information about the infant or family. Instead, they primarily used video to create a positive relationship with the family. This finding is in line with Lindberg et al. (2009), who found that nurses did not find video significant during consultations as is- sues parents raised often did not require the use of video. This in- dicates that the potential of video is not only to gather important information, such as breastfeeding positions or the infant latching on to the breast.

The theme "Weight as a point of reference" illustrated that early in-home care video consultations were primarily nurse-dominated one-way communication. This finding is supported by Dorell et al. (2016), who also found that nurses considered themselves the leaders of video conversations; they felt that these conversations were difficult but became easier after several times. Our findings showed that parents accepted the way the consultations worked, as parents rarely asked questions or asked for further information and discussion about the advice given. According to the theory of active listening, closed questions only allow very limited responses (Rogers & Farson, 1957) and limited responses could therefore have resulted from the nurses' use of closed communication. However, the use of closed communication combined with the nurses' frequently think- ing aloud in the consultations could also have been a response to the unstable technology and the need to resume the consultations. The nurses' domination of the consultations and the way they commu- nicated might also indicate an asymmetry of power between nurses and parents in early in-home care video consultations. As argued by Delmar (2012), parents' room for action may be constrained by paternalistic administration when parents are not given the chance to talk about topics and phenomena that concern them. Our findings regarding the nurse-dominated consultations could therefore indicate that parents were not given the chance to open up about their potential concerns or questions due to a power asymmetry between themselves and the nurses. However, our findings also indicated a relaxed atmosphere in the families' homes. Thus, the parents' being in the unrestricted space of their homes may have tended to neu- tralize these power relations. Furthermore, our findings showed that the primary interest of both parties was the well-being of the infant and according to Burbules (1986), if there is no conflict of interest, a potential power asymmetry will not develop.

Our finding that the consultations were dominated by closed communication could indicate that the video consultations did not offer room for the nurses to use FCC. This might be of concern as studies have concluded that nurses view FCC theory as a frame of reference for the partnership to involve the family in decision-making (Coyne et al., 2011). Additionally, interview studies of parents of premature infants have shown that parents felt empowered and that they were being heard by the nurses concerning their observations of their infants (Brodsgaard et al., 2015; Holm, Brodsgaard,

et al., 2019). Consequently, it could be argued that our findings suggest that the nurses were not practicing FCC due to the domination of this one-way communication consisting of closed questions related to infants' thriving. However, our findings might not have indicated a lack of FCC. Rather, they may have illustrated the needs of parents who were empowered by being at home with their infant and therefore only required limited support. This idea is supported by a study stressing that parents felt supported by knowing that they were welcome in the hospital if they had any uncertainties (Holm, Brodsgaard, et al., 2019). Hence, further studies are needed to shed light on how parental empowerment is developed and achieved in the context of early in-home care.

The theme "keeping on track" showed that video consultations are two-sided. On the one hand, video provided easy and quick access to communication. On the other hand, communication through video was difficult to keep on track. Our findings showed that although video consultations offered easy access to the families, they were vulnerable to interruptions that could change the order of topics or prematurely terminate communication about potentially important topics.

Our findings also highlighted that face-to-face visual contact was sometimes limited due to nurses not being confident with the technology. Similarly, Clemensen et al. (2008) found that communication through video phones constrains the natural flow of conversation in terms of delays and difficulties in interpreting non-verbal cues and expressions. The importance of face-to-face contact was supported by Hammersley et al. (2019), who reported that both health professionals and patients rated face-to-face contact as better than only telephone as patients found that being listened to, treated with care and concern and taken seriously were best achieved through face-to-face consultations. Hence, in communication through video, information sharing may be limited when the consultation is not face to face—for example when the nurse is not visible to parents, which sometimes occurred in our study—as it is difficult to read body language and non-verbal cues.

Additionally, and similarly to other studies about telecommunication and video communication (Lindberg et al., 2009; Østervang et al., 2019), our findings illustrated nurses' lack of confidence using video. Consequently, our findings stressed that the use of video consultation requires a focus on training in video communication and confidence with the use of video.

3.1 | Study limitations

Combining participant observation with recording of the communication enabled us to gain in-depth insight into how the video communication unfolded in early in-home care and enabled thorough description of the context. Thus, we could establish credibility by providing a truthful and in-depth description of how the communication between nurse and parents unfolded. However, this study is limited by the number of participants and does not represent all families receiving video consultations. Furthermore, the families

with potential to participate in the study had to fulfil several criteria to enter early in-home care, resulting in the exclusion of families requiring extra focus on relational challenges between the infant and parent. Nonetheless, the intention of the study was not to make gen- eralizations about video consultations but to offer new insights that contribute substantially to current understandings about how video consultations unfold in the context of families' homes.

The observer tended to avoid influencing the consultations by placing herself in a position where she could see both the family and the nurse on a family's screen while remaining invisible to both par- ties. However, former relationships between the nurse and the fam- ily and the nurse's possible preconceptions of the family may have influenced the communication observed.

As the authors had different backgrounds, critical questions were continuously addressed throughout the study to avoid possible influence of the observers' preunderstandings. Furthermore, all the authors discussed each step together in the analysis process to enhance dependability through reflexivity in the author group (Graneheim et al., 2017; Graneheim & Lundman, 2004).

4 | CONCLUSION

This study provided insight into how communication during video consultations unfolded in the context of families' homes. The study highlighted that the participating families were doing well at home and had begun their daily lives with the infants at the time of the consultations. The study showed that the consultations were dominated by the nurses and primarily focused on factual information with the weight of the infant as the focus of the communication.

The video consultations provided easy and pleasant access to in-home care for families, but the supposed potential of video to gather information about the infant or family, such as breastfeeding positions, was used only to a limited extent. The video consultations were subject to disturbances, which made it difficult for the nurses to keep the consultations on track. Furthermore, the study sug- gested that the use of video consultation requires a focus on training in video communication and confidence with the use of video.

5 | IMPLICATIONS

This study showed that using video consultations during early in-home care for premature infants and families has the potential to fully succeed in the future. Based on our findings, we recommend the following:

- At the nurse level, there should be a focus on training in communication and the importance of using the medium to interact with families.
- At the policy level, stable video technology with enhanced screens and devices to meet the need for wider visual contact must be developed.

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CONFLIC T OF INTEREST

There are none to declare.

DATA AVAIL ABILIT Y STATEMENT

Due to the nature of this research, participants of this study did not agree for their data to be shared publicly, so supporting data are not available.

ORCID

Mai-Britt Hägi-Pedersen https://orcid. org/0000-0002-4349-4755

Hanne Kronborg https://orcid.org/0000-0002-1042-6748

Annelise Norlyk https://orcid.org/0000-0002-8512-228X

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PENGARUH APLIKASI *TELEHOMECARE* TERHADAP PENGETAHUAN PENDERITA TUBERCULOSIS PARU TENTANG PENULARAN PENYAKIT TUBERCULOSIS (*The Effect of Telehomecare application to the knowledge of patient with pulmonary tuberculosis about Tuberculosis disease transmission*)

Ning Arti Wulandari
Program Studi Pendidikan Ners, STIKes Patria Husada Blitar
email: ningarti83@gmail.com

Abstract: *Tuberculosis (TB) disease is transmitted through a "droplet infection". Currently it is still very difficult to cut the chain chain of transmission of tuberculosis disease, this is due to lack of knowledge of patients about the prevention of transmission of tuberculosis. Forms of health services to patients with tuberculosis currently focuses on treatment. Education is actually also given but still less than the maximum due to limited time to have a health officer reach too broad. Therefore the use of technology in providing nursing care to tuberculosis patients at home. The technique used telehomecare, where officers will provide education and followup to tuberculosis patients through cellular telepone. The purpose of this study was to identify the effect of telehomecare application to the knowledge of pulmonary tuberculosis patients about Tuberculosis disease transmission. Method: The design of this study was one group pretest posttest design, conducted from 18 April to 30 June 2012 with a sample of 14 pulmonary tuberculosis patients in the work area of Puskesmas Kanigoro Blitar district taken from the entire population. The data obtained analyzed with Wilcoxon Signed Rank test. The results of this study showed there were differences in knowledge before and after being given education via telehomecare with a value of p= 0.02. Discussion: Telehomecare program could be applied in Puskesmas, clinic or hospital to improve nursing care service*

Keywords: *tuberculosis, telehomecare*

Abstrak: Penyakit tuberculosis (TB) menular melalui "*droplet infection*". Saat ini masih sangat sulit untuk memotong matai rantai penularan penyakit tuberculosis, hal ini disebabkan karena kurangnya pengetahuan penderita tentang pencegahan penularan penyakit tuberculosis. Bentuk pelayanan kesehatan kepada penderita tuberculosis saat ini menitik beratkan pada pengobatan. Edukasi sebenarnya juga di berikan tetapi masih kurang maksimal karena keterbatasan waktu yang miliki petugas kesehatan jangkauan yang terlalu luas. Oleh sebab itu penggunaan tehnologi dalam memberikan asuhan keperawatan kepada penderita tuberculosis dirumah. Tehnik yang digunakan adalah telehomecare, dimana petugas akan memberikan edukasi dan *followup* kepada penderita tuberculosis melalui telepone seluler. Tujuan penelitian ini adalah mengidentifikasi adanya Pengaruh aplikasi telehomecare terhadap pengetahuan penderita tuberculosis paru tentang penularan penyakit Tuberculosis. Metode: Desain penelitian ini adalah *one group pretest posttest design*, dilakukan18 April sampai dengan 30 Juni 2012 dengan sampel 14 penderita TB paru di wilayah kerja Puskesmas Kanigoro Kabupaten Blitar yang diambil dari seluruh populasi. Data yng diperoleh akan dianalisis dengan Wilcoxon Signed Rank test. Hasil penelitian ini ada perbedaan pengetahuan sebelum dan setelah diberikan edukasi melalui telehomecare dengan nilai p=0,02. Pembahasan: Program telehomecare dapat diaplikasikan di Puskesmas, klinik maupun rumah sakit untuk meningkatkan pelayanan asuhan keperawatan

Kata Kunci: tuberculosis, *telehomecare*

Tuberculosis merupakan penyakit infeksi menular yang disebabkan oleh Mycobacterium tuberculosis yang sering bermanisfestasi di paru. Penyakit tuberculosis menular melalui "*droplet infection*" atau udara. Saat ini tuberculosis merupakan penyakit paru yang menjadi prioritas untuk ditangani. Penanggulangan TB yang selama ini diakukan oleh pemerintah antara lain promosi kesehatan baik kepada individu, keluarga ataupun kelompok, imunisasi BCG, penggalangan kerjasama dan kemitraan dengan program terkait. Pemberantasan penyakit tuberculosis (TB) secara nasional di Indonesia telah berlangsung sejak tahun 1969 namun hasilnya belum memuaskan (Depkes RI, 2009)

Penyakit TB merupakan ancaman bagi pembangunan Nasional, karena sekitar 75% penderita TB merupakan kelompok usia produktif secara ekonomi (15–50 tahun). Diperkirakan seseorang penderita TB dewasa akan kehilangan rata-rata waktu kerjanya antara 3 sampai dengan 4 bulan. Berdasarkan data dari Puskesmas Kanigoro temuan kasus (*Case Detection Rate*) tahun 2010 adalah 12% dan 2011 mengalami peningkatan 23% dari jumlah penduduk 72,551. Sedangkan CNR (*Case Notification Rate*) di Puskesmas Kanigoro di tahun 2011 adalah 30,32 per 100.000 penduduk (Depkes RI, 2009). Beberapa faktor yang mempengaruhi keberadaan penyakit TB antara lain faktor medis, sosial ekonomi, budaya, sikap dan perilaku masyarakat. Sosial ekonomi rendah mengarah pada perumahan yang telampau padat, sehingga ventilasinya buruk dan meningkatkan terjadinya penularan penyakit TB terutama pada anggota keluarganya. Sikap dan perilaku dalam pencegahan penularan yang dimiliki oleh penderita maupun keluarganya sangat mempengaruhi penyebaran penyakit TB (Crofton, 2002)

Menurut Notoadmodjo (2010) perilaku kesehatan adalah suatu respon seseorang terhadap stimulus yang berkaitan dengan sakit dan penyakit, system pelayanan kesehatan, makanan serta lingkungan. Menurut Bloom (1908) dalam Notoatmodjo (2010) membagi perilaku menjadi 3 domain antara lain; pengetahuan, sikap dan perilaku itu sendiri. Pengetahuan merupakan hasil tahu dan terjadi setelah melakukan pengideraan terhadap suatu objek tertentu. Menurut Notoatmodjo (2010) sikap mempunyai komponen pokok antara lain; kepercayaan dan konsep terhadap suatu objek tertentu, kehidupan emosional terhadap suatu objek dan kecenderungan untuk bertindak. Sehingga dapat disimpulkan setelah seseorang tahu tentang suatu objek tertentu maka akan membentuk kepercayaan terhadap objek yang di ketahui dan meningkatkan keterkaitan emosional dari subjek tersebut, sehingga akan mempengaruhi terbentuknya sikap yang utuh (*total attitude*).

Beberapa cara untuk meningkatkan pengetahuan seseorang yang salah satunya dengan pendidikan kesehatan. Berdasarkan hasil wawancara yang dilakukan dengan petugas kesehatan pemegang program TB di Puskesmas Kanigoro, selama ini telah dilakukan pendidikan kesehatan dan konseling kepada penderita dan keluarganya secara individu dan kelompok, namun tetap belum maksimal. Hal ini terbukti dari hasil evaluasi pengetahuan penderita TB tentang pencegahan penularan penyakit yang dilakukan pada tanggal 30–31 Oktober 2012 di wilayah kerja Puskesmas Kanigoro dari 7 orang penderita, 5 orang mempunyai pengetahuan kurang dan 2 baik. Petugas kesehatan pemegang TB sebenarnya sangat menginginkan melakukan asuhan keperawatan keluarga dengan kunjungan rumah. Jarak rumah penderita satu dengan yang lain sangat jauh (± 10 km) dapat memakan waktu yang lama untuk melakukannya sehingga harus mengorbankan pekerjaan yang ada di dalam Puskesmas. Salah satu cara meningkatkan asuhan keperawatan dan jangkauan pelayanan kesehatan adalah dengan menggunakan tehnologi keperawatan yaitu *telenursing* atau *Telehealth nursing* (Greenberg, 2000).

Telenursing didefinisikan sebagai suatu proses manajemen dan koordinasi asuhan serta pemberian layanan kesehatan melalui tehnologi informasi dan telekomunikasi (Canadian Nurse Assosiation, 2005). Tehnologi yang digunakan dalam aplikasi telenursing antara lain; telepon, *personal digital assistans*, mesin faximail, internet, video, audio conference, teleradiologi, sistem informasi computer bahkan melalui *telerobotic* (Scotia, 2008). Telenursing sendiri terdiri dari dua bagian yaitu *telephone nursing* dan telehomecare (Greenberg, 2000). *Telephone nursing* digunakan pada proses keperawatan untuk memberikan asuhan keperawatan dengan menggunakan telepon, yang paling sering dilakukan adalah *telephone nursing* dalam melakukan *triage* atau yang disebut *telephone triage*, bentuk kegiatan yang dilakukan adalah memberi saran, informasi, arahan, manajemen gejala, mengatasi masalah dan manajemen penyakit. Sedangan telehomecare dilakukan berdasarkan prinsip-prinsip perawatan pasien dirumah. Bentuk yang dilakukan dalam *telehomecare* antara lain pengkajian dan

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intervensi, edukasi, *supportif care*, *discharge followup* dan manajemen sebuah penyakit. Aplikasi *telehomecare* ini lebih menghemat waktu, tenaga dan biaya.

Untuk meningkatkan pengetahuan penderita TB tentang pencegahan penularan penyakitnya, penggunaan *telehomecare* ini sangat efektif. Dengan aplikasi *system* ini maka petugas kesehatan pemeggang program TB tidak perlu kehilangan banyak waktu dan tenaga untuk memberikan edukasi kepada penderita.Tehnologi yang dapat digunakan dalam aplikasi *telehomecare* di wilayah kerja Puskesmas Kanigoro adalah *telephone seluler* yang hampir seluruh orang memilikinya. Berdasarkan uraian diatas peneliti ingin mengaplikasikan telehomecare dalam memberikan edukasi tentang pencegahan penularan penyakit sehingga dapat memutus mata rantai penularan penyakit TB di wilayah kerja Puskesmas Kanigoro.

BAHAN DAN METODE

Desain penelitian ini adalah *one group pretest posttest design.* Populasi dalam penelitian ini adalah penderita tuberculosis paru di wilayah kerja Puskesmas Kanigoro Kabupaten Blitar yang berjumlah 14 dan peneliti mengambil seluruh populasi menjadi sampel. Variabel dependent adalah *telehomecare* dan *variable dependent*nya adalah pengetahuan penderita tuberculosis paru tentang pencegahan penularan penyakit. Instrumen penelitian adalah kuesioner. Penelitian dilaksanakan pada 18 April sampai dengan 30 Juni 2012 . Pengumpulan data dilakukan dengan mendatangi rumah responden untuk meminta persetujuan kemudian dilanjutkan dengan pretes, dilanjutkan kunjungan rumah yang ke dua untuk memberikan edukasi yang kemudian ditindaklanjuti dengan menggunakan telephone selluler untuk *followup* edukasi yang telah diberikan pada hari ke 3, 8 dan 15 kemudian peneliti mengadakan kunjungan rumah yang ke tiga untuk melakukan posttes. Hasil penelitian akan dianalisis dengan menggunakan Wilcoxon Signed Rank test, hipotesa penelitian akan diterima bila nilai P<0,05.

HASIL PENELITIAN

Karakteristik penderita penderita tuberculosis di wilayah kerja Puskesmas Kanigoro Kabupaten Blitar yang berjumlah 14 seperti didalam table di bawah ini

Tabel 1 Penderita penderita tuberculosis di wilayah kerja Puskesmas Kanigoro Kabupaten Blitar

Karakteristik responden	f	%
Jenis Kelamin		
Laki-laki	9	64
Perempuan	5	36
Total	14	100
Usia		
25-34 tahun	3	22
35-44 tahun	1	7
45-54 tahun	2	14
55-64 tahun	8	57
Total	14	100
Pendidikan terakhir		
SD	2	14
SLTP	3	22
SLTA	9	64
Total	14	100
Pekerjaan		
Masih bekerja	5	36
Tidak Bekerja	9	64
Total	14	100

Berdasarkan Tabel 1 didapatkan bahwa 64% responden berjenis kelamin laki-laki. Berdasarkan usia 57% responden berusia 55–64 tahun, 64% responden berpendidikan terakhir SLTA dan 64% responden sebelum sakit bekerja dan setelah sakit ini sudah tidak dapat bekerja.

Tabel 2 Distribusi perbedaan pengetahuan tentang penularan penyakit tubercullosis Responden di Wilayah kerja Puskesmas Kanigoro sebelum dan setelah di berikan Telehomecare

No Responden	Pre Tes		Post Tes	
	f	%	f	%
1	3	30	9	90
2	6	60	9	90
3	6	60	7	70
4	3	30	5	50
5	3	30	5	50
6	4	40	8	80
7	5	50	6	60
8	1	10	3	30
9	7	70	8	80
10	4	40	6	60
11	8	80	10	100
12	8	80	8	80
13	7	70	7	70
14	4	40	7	70

Wilcoxone Signed Rank Test p=0,02

Berdasarkan Tabel 2 diatas menunjukan adanya peningkatan pengetahuan pada 86% atau 12 responden. Hasil analisa data penilaian tingkat pengetahuan *pre test* dan *post test* dengan menggunakan Wilcoxon Signed Rank test dengan interval kepercayaan 95% didapatkan nilai p=0,02 maka hipotesa penelitian diterima yaitu ada perbedaan pengetahuan sebelum dan setelah diberikan edukasi melalui *telehomecare*.

PEMBAHASAN

Pengetahuan penderita tuberculosis paru tentang penularan penyakit Tuberculosis sebelum diberikan edukasi melalui *telehomecare*

Pengetahuan merupakan hasil tahu dan terjadi setelah melakukan pengideraan terhadap suatu objek tertentu (Notoadmodjo, 2010). Menurut kriteria untuk menilai tingkatan pengetahuan menggunakan nilai; (1) tingkat pengetahuan baik bila score atau nilai 76-100%, (2) tingkat pengetahuan cukup bila score atau nilai 56-75% dan (3) tingkat pengetahuan kurang bila score atau nilai d”56%. Berdasarkan hasil penelitian didapatkan rata-rata nilai dari responden adalah 50%. Berdasarkan kriteria penilaian tingkat pengetahuan *score* 50% tergolong tingkat pengetahuan kurang. Pengetahuan dipengaruhi oleh faktor internal dan eksternal. Faktor internal yang dapat mempengaruhi pengetahuan antara lain pendidikan, minat, pengalaman dan usia, sedangkan faktor eksternal antara lain ekonomi, informasi dan kebudayaan (Notoadmojo, 2010).

Pendidikan sebagai suatu usaha untuk menjadi kepribadian dan kemampuan di dalam dan diluar sekolah dan berlangsung seumur hidup. Pada dasarnya semakin tinggi pendidikan seseorang maka akan semakin luas wawasannya dan lebih mudah menerima informasi dan pembaharuan. Sebagian besar responden 64% berpendidikan terakhir SLTA sedangkan yang memiliki pengetahuan kurang 57% dapat dimungkinkan walaupun pendidikan terakhirnya SLTA, tetapi masih ada yang mempunyai pengetahuan kurang. Ini membuktikan bahwa pengetahuan tidak hanya di dapat dari pendidikan formal saja tetapi juga pendidikan nonformal misalkan pelatihan.

Faktor lain yang dapat mempengaruhi pengetahuan seseorang antara lain adalah usia. Usia terhitung mulai saat dilahirkan sampai saat berulang tahun. Semakin cukup umur tingkat kematangan dan kekuatan seseorang akan lebih matang dalam berfikir dan bekerja (Notoadmodjo, 2010). Berdasarkan hasil penelitian ini didapatkan 57% responden berusia 55–64 tahun. Semakin tua seseorang maka semakin banyak pengalamannya sehingga mempunyai banyak wawasan dan semakin kondusif dalam menyelesaikan masalah. Dapat disimpulkan bahwa usia responden dalam penelitian ini tidak mendukung rata-rata pengetahuan responden yang masih kurang (57%). Hal ini mungkin di pengaruhi oleh kurangnya informasi tentang penularan penyakit tuberculosis paru yang didapatkan oleh responden selama ini. Karena selama ini pendidikan kesehatan yang dilakukan oleh petugas kesehatan hanya sebatas informasi tanpa media dan dilakukan pada saat pasien mengambil obat di Puskesmas. Tetapi ada juga yang obatnya diambilkan oleh keluarga sehingga petugas tidak mempunyai kesempatan bertatap muka langsung dengan klien. Kondisi seperti inilah yang mengakibatkan kurang efektifnya pendidikan kesehatan dan konseling yang dilakukan petugas untuk memutus mata rantai penularan TB melalui pendidikan kesehatan pencegahan penularan penyakit TB.

Pengetahuan penderita tuberculosis paru tentang penularan penyakit Tuberculosis setelah diberikan edukasi melalui *telehomecare*

Hasil penelitian ini pada Tabel 2 didapatkan adanya peningkatan pengetahuan setelah dilakukan telehomecare. Nilai rata-rata pretes adalah 5 yang artinya rata-rata responden dapat menjawab pertanyaan 50% dari 10 item pertanyaan, sedangkan nilai rata-rata postes adalah 7 yang artinya rata-rata responden dapat menjawab pertanyaan 70% dari 10 item pertanyaan, dapat disimpulkan bahwa sebelum dilakukan *telehomecare* responden memiliki pengetahuan kurang dan setelah di berikan *telehomecare* pengetahuannya meningkat menjadi cukup.

Pengetahuan yang meningkat dalam penelitian ini secara teori dapat dikaitkan dengan pendidikan. Notoadmodjo (2010) berpendapat bahwa semakin tinggi pendidikan seseorang maka akan semakin mudah menerima atau menyesuaikan diri dengan hal baru, karena pendidikan mempengaruhi proses belajar. Responden dalam penelitian ini 64% mempunyai pendidikan terakhir SLTA sehingga dengan pemberian edukasi melalui *telehomecare* dapat lebih mudah menerima informasi. Sedangkan hubungannya dengan usia semakin tua seseorang pengalamannya akan semakin banyak, selain itu usia dapat mempengaruhi daya tangkap dan pola pikir sese-

orang. Sehingga semakin bertambahnya usia akan semakin meningkat pula daya tangkap dan pola pikirnya dan pengetahuan yang diperolehnya akan semakin membaik. Berdasarkan penelitian ini 57% responden berusia 55–64 tahun sehingga lebih mudah menangkap informasi yang diberikan melalui telehomecare.

Pengaruh *telehomecare* terhadap pengetahuan penderita tuberculosis paru tentang penularan penyakit Tuberculosis

Hasil analisis dari hasil penelitian dengan menggunakan *Wilcoxone Signed Test* didapatkan nilai p=0,002, sehingga hipotesa penelitian diterima yang artinya ada pengaruh *telehomecare* terhadap pengetahuan penderita tuberculosis paru tentang penularan penyakit Tuberculosis. Peningkatan pengetahuan setelah diberikan *telehomecare* sesuai dengan pernyataan Durrani dan Khoja (2009) yang mengatakan bahwa *telenursing* di Asia dapat meningkatkan kualitas asuhan keperawatan dengan memberi akses yang luas terhadap konsultasi dan meningkatkan pengetahuan klien. Salah satu pelayanan *telenursing* adalah *telehomecare* yang mempunyai bentuk pelayanan antara lain pengkajian dan intervensi, edukasi, *supportif care, dischanger followu*p dan manajemen terhadap penyakit (Greenberg, 2000).Dalam penelitian ini peneliti melakukan edukasi tentang penyakit tuberculosis yang meliputi definisi, penyebab, tanda gejala dan cara penularan penyakit yang dilakukan di rumah responden dengan media booklet dan kemudian di tindak lanjuti (*followup*) dengan menggunakan *telephone selluler* pada hari ke 3, 8 dan 15. Bentuk *followup* yang dilakukan pada responden antara lain mengevaluasi kembali materi yang telah di sampaikan peneliti, mulai dari definisi, penyebab, tanda gejala dan cara penularan penyakit.

Aplikasi telehomecare ini sangat efektif, karena selama ini pemberian asuhan keperawatan pada penderita TB hanya terbatas dilakukan di Puskesmas saja. Ada 4 responden yang bertempat tinggal > dari 8 Km dari Puskesmas sehingga sulit untuk dilakukan *homecare*, tetapi dengan *telehomecare* perawat dapat memberikan pelayananan kapan saja dan penderita TB dan keluarganya bebas menghubungi perawat kapan saja untuk mendiskusikan penyakitnya. Dalam pelaksanaan *telehomecare* responden dan keluarganya sangat antusias. Selama ini responden yang lebih aktif menghubungi sebelum hari yang telah ditentukan peneliti melakukan *followup*. Artinya dengan *telehomecare* responden tampak lebih memperhatikan dan berpartisipasi aktif dari pada pemberian edukasi melalui konseling yang terbatas di Puskesmas saja. Hal ini dibuktikan dengan adanya peningkatan rata-rata pengetahuan dari 50% atau kurang baik menjadi 70% atau cukup baik. Salah satu faktor pendukung pelaksanaan antara lain jenis telephonen selluler yang digunakan oleh responden. Jenis *telephone selluler* yang digunakan dapat mempengaruhi daya tangkap sinyal. Selain itu beberapa hal yang dapat mempengaruhi atau menghambat pesan yang disampaikan pada komunikasi jarak jauh menurut Anwar (2007) antara lain gangguan karena kebisingan, distorsi atau misinterprestasi yang bersifat psikologis sehingga dapat mengubah makna atau pesan yang disampaikan.

SIMPULAN DAN SARAN

SIMPULAN

Ada pengaruh telehomecare terhadap pengetahuan penderita tuberculosis paru tentang penularan penyakit tuberculosis.

SARAN

Program *telehomecare* dapat diaplikasikan di Puskesmas, klinik maupun rumah sakit untuk meningkatkan pelayanan asuhan keperawatan

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Challenges in current nursing home care in rural Germany and how they can be reduced by telehealth - an exploratory qualitative pre-post study

Susann May[1*], Kai Jonas[2], Georgia V. Fehler[1], Thomas Zahn[2], Martin Heinze[1,3] and Felix Muehlensiepen[1,4]

Abstract

Background: Telemedical care of nursing home residents in Germany, especially in rural areas, is limited to a few pilot projects and is rarely implemented as part of standard care. The possible merits of implementing video consultations in longer-term nursing care currently lack supporting evidence. In particular, there is little documentation of experiences and knowledge about the effects and potential benefits of the implementation in presently existing structures. The goal was to assess the effect of implementing medical video consultations into nursing home care addressing the following research questions:

- How is medical care currently provided to nursing home residents, and where do problems in its implementation arise?
- How can video consultations be used to reduce difficulties arising in everyday care?
- How does implementation of video consultations impact day-to-day nursing home care delivery?

Methods: Twenty-one guided interviews (pre-implementation $n = 13$; post-implementation $n = 8$) were conducted with a total of 13 participants (physicians, nurses and medical technical assistants). Narratives were analysed using qualitative content analysis. The results were contrasted in a pre-post analysis.

Results: Challenges described by the participants before implementation included a requirement for additional organisational and administrative efforts, interruptions in the daily care routine or delayed treatments, and risk for loss of patient-relevant information due to process diversity. After implementation, communication was facilitated upon introduction of assigned time slots for video consultations. Clinical information was less likely to be lost, additional work was spared, and medication and therapeutic and assistive devices were provided more quickly.

* Correspondence: susann.may@mhb-fontane.de
[1]Center for Health Services Research, Brandenburg Medical School Theodor Fontane, Seebad 82/83, 15562 Rüdersdorf, Germany
Full list of author information is available at the end of the article

Conclusions: Telehealth cannot replace physical, in-person visits, but does offer an alternative form of service delivery when properly integrated into existing structures. Our results suggest that the use of video consultations in nursing homes can reduce the burden and additional workload, and increase the efficiency of care provision for nursing home residents. Video consultations can complement in-person visits to nursing homes, especially to address the shortage of medical specialists in rural areas in Germany. To promote implementation and acceptance of video consultation in nursing homes, we need to increase awareness of its benefits and undertake further evaluation of video consultations in nursing home care.

Keywords: Telehealth, Video consultation, Rural areas, Physician shortage, Nursing homes

Background

Telehealth interventions, particularly via video consultations, are emerging as a relevant contribution to medical care. Telehealth has the potential to expedite access to care and to facilitate "healing at a distance" of individuals separated geographically from care providers [1]. In rural areas, various barriers impede access of patients to their physicians. On the one hand, traveling to a physician can impose physical, psychological, and financial hardships on seriously ill rural patients, especially among the elderly [2]. On the other hand, barriers due to access and high volume of patients in the practice can preclude timely in-person home visits by physicians in a rural setting. In rural and remote communities, the impeded access due to health services can contribute to poorer health outcomes [3]. In this setting, telehealth has become an important tool for improving health care [4]. Implementing video consultations into standard practice could further address the difficulties arising from physician shortages in rural areas of Germany [5, 6].

Study results indicate that implementation of telehealth interventions is an effective way to deliver health services to rural communities, with positive influences on the quality, coordination, and organisation of health care services [7], bringing a reduction in unnecessary emergency admissions and hospitalizations rates [8–10]. Furthermore, earlier studies report on financial savings, reduced physical restraints, and improved vital signs related to telehealth in nursing homes [11, 12].

There have also been investigations of telemedicine in nursing homes, but few details are known about its effects on nursing care and daily routines of health professionals in the extended care setting [13]. The present study was conducted as a part of the MUT project (Model for the implementation of telemedical care of nursing home residents by outpatient physicians in rural areas) of the German Federal Ministry of Health (grant number: ZMVI1-2520TEL002) [14], which enables telemedical support of health care and supports the necessary technical, legal, training, and organizational conditions. The MUT-project emerged from another project (CAREcomm) [15]. The aim of the project was to identify innovative solutions for the organisation of

medical and health care in regions with sparse population, over-ageing and weak infrastructure. The MUT project was performed in the German federal state of Brandenburg, a state of 2.5 million inhabitants with a low physician density. Due to the relatively sparse popu- lation, provision of medical care is challenging. The fed- eral state of Brandenburg is characterised by the lowest density of contract physicians in Germany. This is com- bined with a high utilization rate of outpatient medical care - due, among other things, to the demographic and morbid structure of the population, causing high work- loads among health care practitioners and challenges in health care delivery [16]. The MUT project focusses on finding simple and economical telehealth solutions that can be integrated into everyday care with minimal dis- ruption of existing structures, and enabling translation to other institutions potentially benefiting from the MUT experience.

In particular, this study addresses the problems in current home nursing care in rural Germany and how such problems can be alleviated through integrating tele- health into existing structures. We intend the findings of this study to transfer readily to other actors and medical institutions. Thus, we now report on our exploratory qualitative pre-post study based on the following re- search questions:

- How is medical care currently provided to nursing home residents and where do problems in its delivery occur?
- How can video consultations be used to reduce problems encountered in everyday nursing home care?
- How does present implementation of video consultations impact day-to-day nursing home care delivery?

Methods

Study design

To document participants' perspectives on the implementation of video consultations and to promote their successful implementation, we conducted an exploratory qualitative pre-post study among all parties in the health

care process (physicians, nurses and medical technical assistants). We analysed responses to guided, problem-centered interviews [17] using inductive qualitative content analysis to derive replicable and valid overall conclusions of the state of affairs before and after implementation of video consultation. The results were contrasted in a pre-post analysis.

Participants

The MUT project team organised local information events aimed at physicians and nursing home staff involved in the MUT project [14]. Through the support of volunteers networking in the communities and in the health sector, a total of five information events could be organised in different institutions (e.g. in nursing homes or in town halls). Advertisement yielded recruitment of four physicians, their medical technical assistants and representatives of two nursing homes for the MUT project. In both institutions, all employees were informed about the study and their consent to participate was invited. A total of four physicians, three medical technical assistants and six nurses were recruited for the present study. Detailed information about the sample can be found in section results in Tables 1 and 2.

Data collection

The preliminary interview guide was developed through participation in two workshops organised by the MUT project. The workshops as part of the MUT project activity aimed at coordinating the project content, objectives, and defining infrastructural requirements for the implementation of video consultations (please refer to supplementary material infrastructural requirements) with the participants of the MUT

Table 1 Interview partner characteristics prior to implementation of video consultations

Participant ID	Occupation	Sex
MUT_101	Nurse	Female
MUT_102	Medical technical assistant	Female
MUT_103	Nurse	Male
MUT_104	Physician	Female
MUT_105	Medical technical assistant	Female
MUT_106	Physician	Male
MUT_107	Nurse	Female
MUT_108	Physician	Male
MUT_109	Medical technical assistant	Female
MUT_110	Physician	Female
MUT_111	Nurse	Female
MUT_112	Nurse	Female
MUT_113	Nurse	Female

Table 2 Interview partner demographics in post- implementation interviews

ID	Occupation	Sex
MUT_201	Physician	Male
MUT_202	Physician	Female
MUT_203	Nurse	Female
MUT_204	Physician	Male
MUT_205	Medical technical assistant	Female
MUT_206	Medical technical assistant	Female
MUT_207	Nurse	Female
MUT_208	Nurse	Female

project. Physicians, nurses, and medical technical assistants talked about problems they encountered in daily health care provision and the processes and structures that might potentially be supported by video consultations. The researchers (SM, FM, GF) were observers at the workshops. Based on their transcripts and memos, they drafted a preliminary interview guide, which was first tested in three pre-interviews with two nurses and one physician, and then adjusted to accommodate their responses. The final interview guide consisted of the following main topics: current medical care provided to nursing home residents, typical problems in everyday care, the potential use of video consultations to reduce these problems, and the impact of implementing video consultations on day-to-day nursing home care delivery (please refer to supplementary material interview guide 1). The second interview guide (post-implementation) addressed the findings of the first interviews and focused on perceived changes in the process (please refer to supplementary material interview guide 2).

In addition, we collected socio-demographic data about the informants, including gender and profession. In order to reduce the risk of infection during the present COVID-19 pandemic, the interviews were con- ducted via telephone. The baseline phone interviews prior to the implementation of telehealth took place in September 2020, and the post-implementation interviews in November and December of the same year. The interviews were recorded and transcribed verbatim, and the transcripts were pseudonymized according to data protection guidelines.

Data analysis

Data collection and analysis were conducted in parallel by two researchers (SM, FM), based on Kuckartz's struc- tured qualitative content analysis [18] using MAXQDA software (Verbi GmbH). Categories were developed in- ductively, so as to encompass the relevant material in

the transcripts using data-driven development of a category system. Next, the category system was applied to the entire interview material. At this stage, data collection had already been completed. To ensure traceability, application of the category system was validated by a member check, whereby the researchers independently applied the developed category system to the entire material (SM, FM). Data collection and analysis were circular and continued until no substantially new findings emerged and theoretical saturation was reached. This manuscript has been compiled in accordance with the Consolidated Criteria for Reporting Qualitative Research (COREQ) [19]. For the presentation of the results, representative quotes of the discussion transcript were selected, translated into English, and are included in this text.

Ethical considerations

This study was approved by the Ethics Committee of the Brandenburg Medical School Theodor Fontane (E-01-20,200,717). After receiving a study information pack, potential informants were invited to provide a written informed consent prior to participating in the study.

Results

Pre-implementation interviews

A total of 13 (ten female, three male) health care professionals participated in the baseline interviews prior to implementation of video consultations. Six participants were nurses from two nursing homes, four were physicians and three were medical technical assistants (see Table 1). Participants were asked to identify current process structures and problems. Furthermore, they were asked to name problems that might be alleviated with video consultations and to express their expectations regarding the advent of telemedicine. The interviews lasted an average of 32 min.

Depiction of current practice (pre-implementation)

To make a request for an acute care visit to the nursing home (1, please refer to Fig. 1 for the flowchart), the nurse contacts the primary care physician's office via telephone (2) or fax (3). The choice of contact method is at the discretion of the nurse, or following the previously established method of contact between the nursing institution and the medical practice. When contact is made by telephone, the medical assistant at the physician's surgery takes the call (4) and

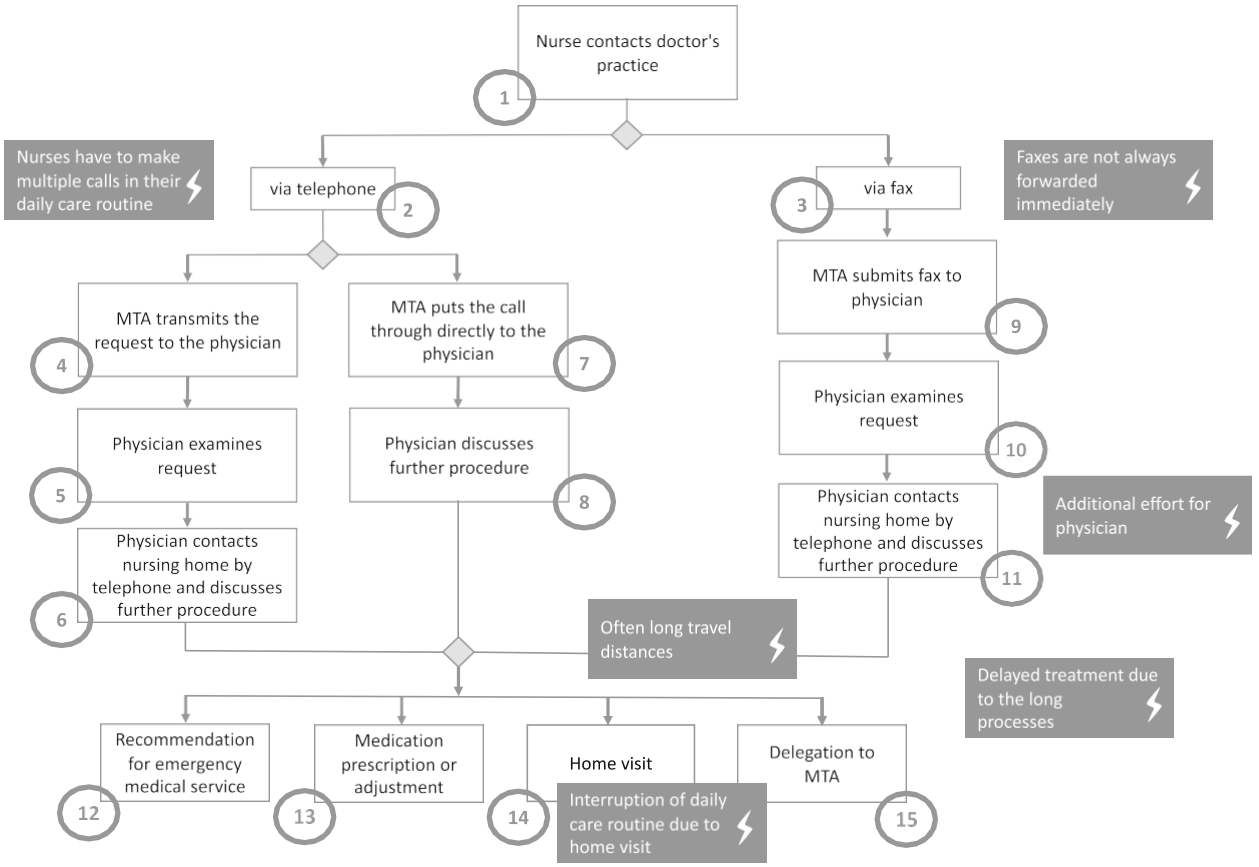

Fig. 1 Problems in the current process

records the request in writing for transmission to the doctor (5). The physician reviews the request and contacts the nursing facility by phone to discuss the issue (6). In some cases, the medical technical assistant may put the call through directly to the physician (7), such that the physician and the nurse can discuss directly the issue (8). The medical technical assistant decides upon direct or indirect communication based on the current workload in the practice. In summary, the process for planning a face-to-face home visit varied in between participating medical practices. In the case of fax communication from the nursing home, the medical technical assistant receives the fax and transmits it to the physician (9). In this step, the physician checks the request (10) and then contacts the care facility by telephone (11). When subsequently contacting the nursing home, the following scenarios of care are possible: the physician recommends that the ambulance service be contacted for hospital transfer (12), the physician prescribes or adjusts a medication, or (13), schedules a nursing home visit by the physician (14) or by a medical technical assistant (e.g., for blood sampling or wound documentation) (15).

Problems in the current process

When describing the process for requesting external medical support, the interviewees were asked to name the current obstacles that they perceived in the delivery of care. It emerged that when nurses contact the medical practice by phone, they often had to make several calls to reach the medical technical assistants:

> „*Some just answer the phone, some only have certain times when they answer the phone, and then the pressure is rising [...]. So I try to do it on the side, because I can't sit in front [of the phone] the whole time and try again in ten minutes, because then the time for the care runs out again.*" (MUT_101, Pos. 88)

In cases calling for a regular physician home visit, participants frequently noted that nurses would have to interrupt on short notice their daily care routine to be able to participate in the visit.

> „*He [the doctor] comes at peak times, when it's lunchtime and you're the only nurse in the living area. I'm either supposed to hand out the medicine or accompany the doctor. I'm a bit grumpy when I have to run away. People need their midday medicine; they're waiting at the lunch table. Then he [the doctor] hangs around for ten minutes, waiting again for you to come.*" (MUT_113, Pos. 20)

When contacted via fax, while faxes arrived directly at the practice, they are not always promptly transmitted to the physician, resulting in delays in arranging an ap- pointment for face-to-face consultation.

„For example, if the resident has 39.4 fever and somehow it is not possible to see what he/she had. [...]. I called the general practitioner and was told that we should send [the inquiry as] a fax. Then, of course, I get angry. I need an answer NOW and not in the afternoon, when the fever has risen even higher, so I would need someone to give me some in- formation and I can't send a resident to the hospital because of such a temperature. " (MUT_107, Pos. 6)

In this context, the medical technical assistants have a mediating function. This may not only lead to delays be- fore a consultation can be initiated, but may also result in the loss of information relating to patients and their care.

„The problem is that a written request always comes in by fax and then we fax it back again […]. That means it is always done by fax, because it is [even more] difficult by phone. This happens during our practice hours, when the MTA [medical technical assistant] can't say much about it, the time is short and that is really a big problem. That's when infor- mation gets lost." (MUT_106, Pos. 18)

If contact is made by fax, the physician must contact the nursing home again by telephone to arrange an ap- pointment, which requires additional effort on the part of the physician.

„Yes, for example, everything is currently processed via fax communication. So, when the nursing home makes an inquiry, it is usually made by fax. I usu- ally like to make a phone call, because everything is too vague for me and I want to have it explained. And then I have to answer again by fax. So even though I usually discuss it in advance, I still have to make another written order, for example, so that the colleagues there, the geriatric nurses, have a written order and can work more [assurance] for themselves, and of course that process always duplicates itself somehow." (MUT_110, Pos. 8)

In addition, the time expended in visiting the nursing institution, which leads to additional work for the physi- cians, was also identified as a source of inefficiency. Stakeholders on both sides described that there are often delays in treating nursing home residents because of the often very protracted process to initiate counseling.

> „*From the moment when we send out a fax, it actually takes a day before we even get a response.*“ (MUT_112, Pos. 26)

The physicians, on the other hand, mentioned that they first have to locate the responsible nursing staff on the unit, which frequently wastes a lot of their time.

> „*When I went to the nursing home and had my faxes in hand, [indicating] to whom I had to go, I always went to the ground floor living area and said,* “*I have this one [patient] and that one [patient], I don't have this and the other one [patient]*”. *And then I always have to run to the next living area and first of all look for the nursing staff. That is always difficult.*“ (MUT_104, Pos. 20)

A detailed illustration of problems reported in the current process can be seen in Fig. 1.

Sample post-implementation interviews

Eight people (six female, two male) took part in the post-implementation interviews; there were three physicians, three nurses, and two medical assistants due to dropout of one physician, three nurses and one assistant (see in Table 2). The focus of the second session was the analysis of the realisation of video consultations in everyday care, and changes in the process description of the consultations after implementation of telemedicine. Other topics were the problems encountered in implementation, and perceived advantages from telemedicine and its potential for improving the care of patients in nursing homes. The interviews lasted an average of 35 min.

Depiction of practice after the implementation of videoconferences

Ten weeks after the implementation of videoconferences in everyday care, the stakeholders were asked to describe the revised process: The physician first makes a recommendation for a fixed, weekly time slot for video consultations (1). The video consultations are prescheduled, not arising in response to acute issues. Next, a nurse checks if there are patients who acutely need a physician visit and transmits the patient-relevant information via the video conferencing system 1 day before the scheduled video consultation time slot (2). In this process, all patients are individually assigned an appointment for their respective issues. At the beginning of the video consultation, the nurses and the physician dial into the video consultation software. For this purpose, the nurses use a tablet with the video consultation software in- stalled. The videoconference is carried out from the nurses' offices, from where the nurses can also view the

patient records. First of all, they provide an overview of the patient's medical report to the physician connected to the system. They initially provide an overview of the patient's medical record to the physician in order to sub- sequently discuss the patient's case. Afterwards, patients come to the nurse's office if they are mobile. For immo- bile patients, the video consultation is conducted in the patient's room.

Following the video consultation (3), the physician can then initiate a medication prescription or adjustment measures (4), arrange an additional face-to-face appoint- ment (5) or another video consultation (6) (see post- implementation flowchart in Fig. 2).

Impact on current process post implementation

Stakeholders outlined the following changes: A fixed, weekly time slot for video consultations allows scheduled visits to be made for selected patients, as well as enab- ling ad hoc meetings. This affords the opportunity for nurses to address acute problems without needing to contact the practice again.

> „*By creating this one time slot for visits, there is def- initely also a certain amount of reliability, planning reliability for the nursing staff. [We are] able to ad- dress specific problems in a focused manner, and then together with the patient if necessary.*" (MUT_202, Pos. 35)

The use of video consultations and direct appointment setting eliminates the medical technical assistants' inter- face and patient- and care-relevant information is not likely to be lost.

> „*It doesn't have to go through an additional person who receives the same information and passes it on to me, and I still then have the nurses describe it to me again in person, because as I said, the loss of in- formation had otherwise already occurred.*" (MUT_202, Pos. 10)

Through the use of electronic visits, continuity of care can be increased and information on patients can be ex- changed conveniently. Video consultations reduce inter- ruptions in the day-to-day care of nurses, and physicians no longer have to search for the responsible nurses in the nursing home. If physicians visit the nursing institu- tion spontaneously, this can sometimes lead to longer waiting times for the doctor because the nurses have to accompany them on their ward round at the cost of per- forming their everyday nursing work. The physicians de- scribed that the video consultation hours helped to reduce delays in the daily care routine.

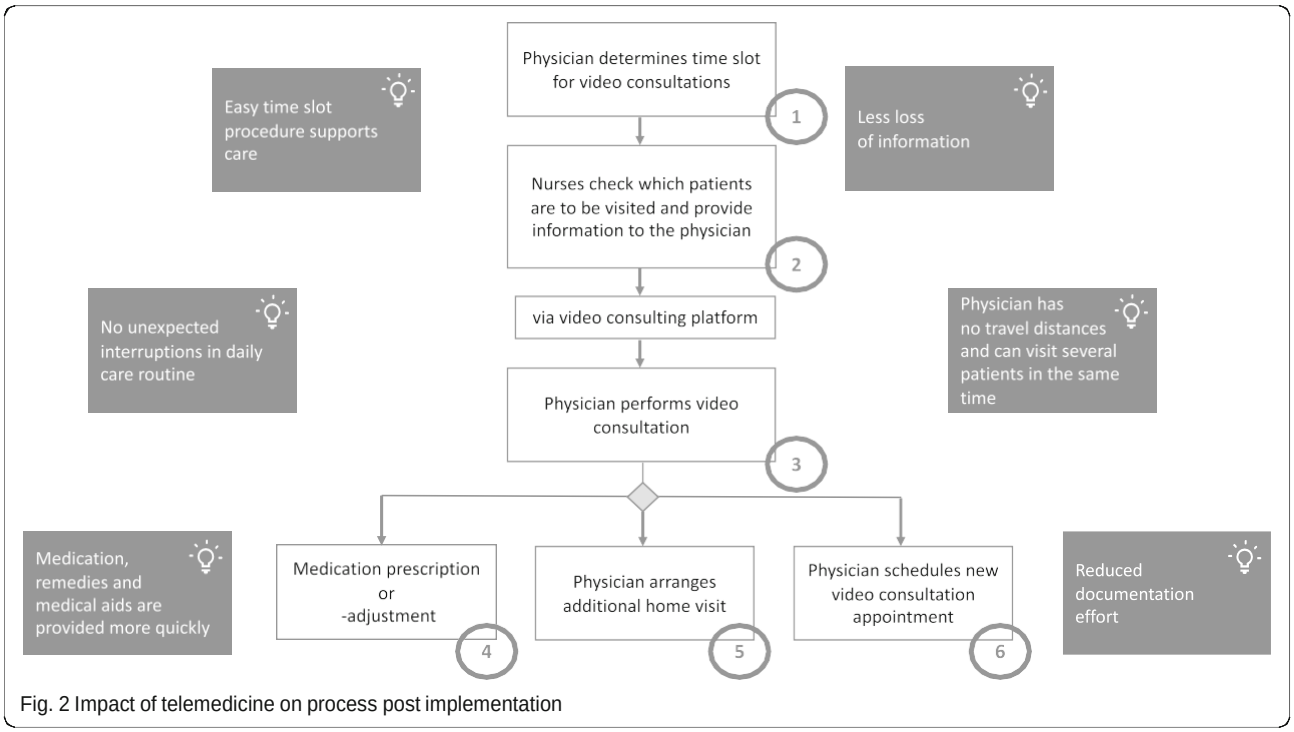

Fig. 2 Impact of telemedicine on process post implementation

> „*I then had first look for the nurse, and had to wait five minutes and then I'm [expletive]. Because I also lacked the time. It's also time pressure. It's an extra task for me that I haven't planned for during the many home visits, and then I have an extra task and I have to wait until one of the ladies or gentlemen [nurses] comes by. Of course, this also affects my mood and puts pressure on my time with the patients. So, I have to say,* "*Well, come on, guys! Quickly, quickly! I have to move on!*". *And now I can do that [visitation] from my armchair with a cup of coffee.*" (MUT_204, Pos. 8)

In addition, travel requirements are eliminated and, if necessary, the attending physicians can care for several patients in the nursing home along with other patients in their regular practice routine during this allotted telehealth time.

> "*I just do not have an extra trip and thus also save time. There and back, look at the patient, document the treatment. I have a time saving of almost an hour.*" (MUT_204, Pos. 16)

The nurses transmit the patient-relevant information 1 day before the scheduled appointment to provide the doctors with the necessary information in advance. Through direct communication via video consultation, medical aids and appliances can be prescribed more quickly, and medications can be prescribed or adjusted.

> „*So, I say to Dr. W., it's much quicker than if he came here and I discussed everything with him first, and yes, he can decide more quickly who is in imme- diate need of a visit on site* (MUT_207, Pos. 8)

The documentation in the video consultation software also reduces the organisational and administrative effort, especially for the physicians.

> „*Yes, the [need for] faxes is changed, but of course it is still the case that we order the medication in this way; that is normal. But the [need for] communica- tion via faxes about present concerns of the residents, when we needed a consultation, when we needed a new treatment care order or something, that is now all settled in this one appointment. This means that there is really only a single e-mail or invitation at that moment via D. [the video consultation soft- ware], [which identifies] what the consultation is about, meaning that - let's say - seven, eight, nine faxes no longer have to be sent out!*" (MUT_208, Pos. 6)

A detailed illustration of the impact on the process post implementation can be seen in Fig. 2.

Discussion

This study aimed to explore the capacity of telehealth to support physicians in a rural region, as well as identify- ing the conditions to ensure successful implementation

of this technology into nursing homes in rural Brandenburg. Our findings confirm that telehealth can indeed improve patient care, increase accessibility and continuity of medical care, and reduce the expenditure of effort by nursing staff, technical assistants, and physicians alike. The interviews provide a better understanding of the potential benefits and barriers that should be considered when implementing video consultations in nursing home everyday care.

Impact on current process

Prior to the implementation of video consultations, the process for scheduling an in-person medical home visit varied between the different medical practices. Our investigation established a process that appears to fit well into everyday practice and has benefits for care delivery. Through previous coordination and scheduling, telehealth time slots were allocated in a structured manner. Our study shows that establishing a convenient time slot procedure is the key factor for a successful and supported expansion of video consultations, which is consistent with the findings in another study [20]. The feeling of not being driven by time constraints led to a more relaxed atmosphere among the doctors and nurses, and simultaneously improved their communication and cooperation. In addition, nurses were no longer interrupted in their work routines, while physicians were spared the extra effort required by travel and seeking out the appropriate nurses on site.

The basic prerequisite for efficient care of nursing home residents is seamless communication between all professionals involved in the care process [21]. In our exploratory qualitative pre-post study, we identified that a slow flow in data exchange, as well as limitations in the accessibility of the individual actors in everyday care, were the main causes of inefficiency in the care process. Due to these factors, clinical processes were slowed down, and additional work was created, which together leads to dissatisfaction in everyday care among the involved healthcare professionals. Our follow-up study indicated a notable improvement in these issues upon telehealth implementation.

Berland and Bentsen stated that medical errors are often caused by a lack of information or poor communication, and only very rarely due to deficient competencies or motivation of the treating and caring professions [22]. Consequently, by improving the exchange of information (as identified in the present study), there can be faster and more efficient provision of care, which is likely to avoid treatment errors, thus leading to greater patient safety. This is consistent with previous findings in the literature [23]. Our study also showed that the elimination of medical technical assistants as the de facto interface between nurses and physicians in the

communication process resulted in less loss of clinical information. Thus, the introduction of direct communication through scheduled video consultation leads to fas- ter care and an increase in patient safety.

In addition, participants reported that medications, remedies, and treatment aids were prescribed or adjusted more quickly after telehealth implementation. The communication via video consultation improved the transfer of information and often the speed and accuracy by which health care recommendations could be com- municated and implemented. This results from physi- cians having had the necessary information on specific medical issues beforehand, which could then be ad- dressed directly during the consultation. In addition, in- formants noted the possibility of holding ad hoc meetings, which, due to time constraints, could rarely be realised during a regular face-to-face visit. This led to improved processing of patient-related needs, whereby patient concerns could be discussed promptly and thus processed more quickly.

The implementation of video consultations has resulted in time savings at various levels; there was a reduction of documentation efforts, savings in travel time for physicians, and facilitation of timely care of patients. By eliminating unnecessary travel, physicians were able to conduct video consultations during the time they might otherwise have been traveling to or from the nurs- ing home, thus increasing their capacity for providing care. These results are line with previous studies [11, 24–26]. Of course, it must be noted that there was ini- tially an additional effort ("learning curve") required for implementation. However, the benefit to care out- weighted the encumbrances from investing in a tablet or webcam and creating access through a video consult- ation provider. This was likewise shown in a pilot pro- ject during COVID-19 pandemic, where videoconferencing had to be implemented within 24 h to reduce the risk of infection [27]. The circumstances of the COVID-19 pandemic also highlight the importance of providing care via telehealth to non-infected people, which should surely reduce contamination and ensure ongoing medical care in this and future pandemics. Our study also revealed various advantages of video consulta- tions compared to telephone consultations. Health care practitioners are able to visually examine their patients and thus i.e. assess wounds, which is particularly import- ant in nursing home care. Plus, the visual contact creates a more personal and trusting atmosphere and opportunities for reassurance, also with regard to non-verbal communication signs, especially for people with limited verbal communication ability. Furthermore, in Germany, video conferencing offers doctors better reimbursement options than telephone conferencing; allowing the reim- bursement of diagnostics and therapy with video

conferencing, whereas with telephone consultations, only advice on a disease might be compensated. While the cost of implementing videoconferencing is higher than for teleconferencing, it is still moderate as digitisation in health care progresses. In this case, the expenses include the purchase of a tablet for the nursing home or corresponding hardware in the practices and ensuring adequate internet connection. In the scenario described here, however, the telephone as a medium of communication has not been abolished and continues to serve as a means of contact for urgent cases or similar events.

To obtain a broader integration of telehealth, in this case video consultations, into routine care it is important to emphasize its benefits for the work environment of health care professionals. The present results indicate that telehealth can improve working conditions and lead to higher satisfaction at work, which is consistent with findings of prior studies [28, 29]. To foster the further implementation and adaption of video consultations specifically in nursing home care, we must raise awareness of its benefits for all stakeholders. A broader familiarisation with video consultations would support decisions by institutions to deploy telemedicine services in remote regions [30].

Strengths and limitations

The qualitative study design with a pre-post data collection has the advantage that the descriptions of the perceived problems with usual processes and the beneficial effects of telehealth can be described in detail, with direct recording of the experiences of the participants through a structured interview approach. The qualitative study design allowed for an in-depth understanding of the impact of implementing video consultations on primary healthcare in nursing homes in rural Germany. Due to the open and exploratory approach, interview partners were able to give considered narrative accounts of their experience.

The study provided information about the impact of video consultations in one rural region in Germany, but further research is needed to examine its relevance in other regions in Germany and other national health systems. At this point, the challenges of video consultation in nursing home care have not been analysed in detail, though we believe this is important and will be considered in our subsequent research efforts. Furthermore, we have not yet investigated its utilization in specialised medical care, such as dental or neurological care. Our recruitment strategy of participants from nursing homes and associated physician practices may have led to a selection bias for those interested in telehealth, and the dropout to follow-up may have lost respondents with more negative experiences. We note that the physician practices and nursing homes experienced staff shortages

due to the COVID 19 pandemic, which likely had an im- pact on the recruitment of participants and facilities, and reduced the sample size especially of nurses for follow-up interviews. We have not offered a cross check of the interview transcripts to the participants.

Conclusion

To accommodate better the present shortage of physicians and nursing staff, telehealth interventions such as scheduled video consultations, will probably come to complement traditional in-person consultations in future health care delivery. While telehealth cannot entirely re- place face-to-face visits, it does offer an alternative mode of service delivery that is amenable to integration into existing structures. Our results suggest that using video consultations in long term nursing care can reduce the burden and expense of travel for physicians and spare nursing staff unnecessary distraction for routine duties, this increasing health care efficiency and productivity.

Further research should focus on patients' perspectives and explore how older and often multimorbid patient clientele perceive video consultations. In addition, we consider analysis on the applicability of video consulta- tions among non-physician health professionals, e.g., therapists or pharmacists, to be of particular importance to support nursing home care. And finally, there is also a lack of health economic considerations of the use of telemedicine in the nursing home care.

Abbreviations

MUT: Model for the implementation of telemedical care of nursing home residents by outpatient physicians in rural areas; MTA: Medical technical assistant

Supplementary Information

The online version contains supplementary material available at https://doi. org/10.1186/s12913-021-06950-y.

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Authors' contributions

All authors were involved in drafting the article and critically revising it for important intellectual content, and all authors approved the final version to be submitted for publication. SM & FM had full access to all the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis. SM and FM were involved in study conception and design. SM collected data and all authors participated in the analysis and interpretation.

Additional file 1. Pre-Implementation Interview Guide.

Additional file 2. Post-Implementation Interview Guide.

Additional file 3. Supplementary Material: Depiction of infrastructural requirements for the implementation of video consultation identified in the workshops.

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Availability of data and materials
All data relevant to the study are included in the article or uploaded as supplementary information. For further questions regarding the reuse of data, please contact the corresponding author (susann.may@mhb-fontane.de).

Declarations

Ethics approval and consent to participate
All ethical issues were addressed. This study was conducted with the approval of the Brandenburg Medical School local ethics of the committee (E-01-20200717). After receiving a study information pack, potential informants were invited to provide a written informed consent prior to participating in the study.

Consent for publication
Not required.

Competing interests
None declared.

Author details
[1]Center for Health Services Research, Brandenburg Medical School Theodor Fontane, Seebad 82/83, 15562 Rüdersdorf, Germany. [2]bbw Hochschule Berlin, Berlin, Germany. [3]Department of Psychiatry and Psychotherapy, Immanuel Klinik Rüdersdorf, Rüdersdorf, Germany. [4]Faculty for Health Sciences Brandenburg, Potsdam, Germany.

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Publisher's Note

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TELEHEALTH AND HOME HEALTH OCCUPATIONAL THERAPY: CLIENTS' PERCEIVED SATISFACTION WITH AND PERCEPTION OF OCCUPATIONAL PERFORMANCE

MISSI A. ZAHORANSKY, OTD, OTR/L, FAOTA[1], JENNIFER E. LAPE OTD, OTR/L[2]

[1] TOTAL REHABILITATION SPECIALISTS, CLEVELAND, OHIO, USA

[2] CHATHAM UNIVERSITY, PITTSBURGH, PENNSYLVANIA, USA

ABSTRACT

Home health care agencies are restructuring service delivery models to address quality of care and client satisfaction while containing costs. New regulatory changes and the public health emergency due to the COVID-19 pandemic precipitated an immediate need for alternative care models. Telehealth has been recognized as a feasible delivery model to provide health care. This quasi-experimental pretest-posttest study examined the feasibility of performing occupational therapy telehealth visits as an adjunct to on-site visits for homebound clients (N=9). The Outcomes and Assessment Information Set (OASIS) data collection set, Canadian Occupational Performance Measure (COPM), and a survey were used to collect data. This combination of visits resulted in clinically and statistically significant improvements in client perception of performance and satisfaction with activities of daily living. Findings showed that participants favorably perceived this service delivery model met their therapy needs and they would recommend it to others. Results of this study warrant a larger study involving physical and speech therapy services.

***Keywords**: Canadian Occupational Performance Measure (COPM), Cost-based home telehealth, Home health care, Outcome and Assessment Information Set (OASIS), Occupational therapy, Telehealth, Telemedicine, Telerehabilitation*

By 2034, for the first time in history, older adults will outnumber children in the United States (US Census Bureau, 2018). With the aging population choosing to remain in their home environment, Medicare expenditures for home health care services has increased. The Medicare Payment Advisory Commission reported that Medicare spending was $17.7 billion for home health care in fiscal year 2017 and that home health utilization increased 60% from 2002 to 2016 (MedPAC, 2019).

The public health emergency (PHE) resulting from the COVID-19 pandemic served as an impetus for all areas of healthcare to explore alternative options for care delivery. For the first time, occupational therapy practitioners could use telehealth to provide therapy services to Medicare beneficiaries as a result of expanded reimbursement through the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) (AOTA, 2020). Though physicians and nurses have been utilizing telehealth for many years, telehealth adoption by other health care professionals has been relatively slow due to limited reimbursement (CDC, 2020). The COVID-19 pandemic facilitated the use of telehealth in the home health care setting by easing restrictions, reducing barriers, and providing reimbursement for telehealth services by providers not previously recognized as telehealth providers by CMS (CDC, 2020). Many organizations rapidly transitioned to telehealth to meet the needs of clients and decrease the spread of COVID-19. The American Occupational Therapy Association (AOTA) recognizes that telehealth can be an effective service delivery model across practice settings, including in the home health setting (AOTA, 2018).

Dorsey and Topol (2016) identified three trends that can directly apply to occupational therapy. One trend addressed cost containment and the second was the emergence of treating chronic conditions. The third trend, which is directly applicable to this study was the expansion of telehealth into the home environment. Telehealth has been successfully used in many practice settings, but due to limited reimbursement, its use as a service delivery model in home health care has been limited. Thus, there is a need for research to demonstrate the feasibility of telehealth as a service delivery model for occupational therapy services in the home health care setting. Due to growth of the older adult population, rising costs of health care, and a changing

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reimbursement climate, home health care agencies need to restructure care service models to address quality of care and client satisfaction while containing costs.

The Centers for Medicare and Medicaid Services (CMS) published the final rule for payment changes for home health care agencies and one of the primary tenets to the new payment methodology was the exclusion of any additional monies for therapy services after January 1, 2020. Under the prior payment model, therapy qualified a home health care agency for additional monies in a tier-based system, and one could argue that therapy was a revenue source for home health care agencies. In the new model of payment, although therapy appears as an expense, payment is based in part on change in functional status in clients as measured by the Outcome and Assessment Information Set (OASIS) assessment tool. Payment based on change in functional status provides a logical indication that occupational therapy services should play a prevalent role in home health care services. The 21st Century Cures Act (2016) mandated the need for information on the current use and barriers to telehealth services and dictated that CMS address telehealth within home health care. CMS (2018) clarified the definition of "remote patient monitoring" for telehealth services and stated it is now an allowable administrative cost if the home care agency uses it to "augment the care planning process." CMS (2018) further stated that while currently there is no payment for home health telehealth services, they plan to monitor and analyze cost, impact, and client outcomes with telehealth services as well as to "consider ways to more broadly support such technology as part of home health." CMS expressed the belief that "therapists involved in care planning, as well as other skilled professionals acting within their scope of practice, may utilize remote client monitoring to augment this process" (p. 56526). This mandate allows for telehealth visits to be part of a viable service delivery model for home health care agencies. The new payment system has agencies assessing ways to manage costs efficiently for all disciplines, with focus on overall visit numbers and determining the priority of service utilization.

It is important for occupational therapy practitioners to be as efficient as possible with limited therapy sessions as driven by payment for therapy services. As a result, it is crucial that agencies explore how alternative service delivery models may complement existing models to facilitate effective client-centered care.

The purpose of this study was to examine the effectiveness of a combination of occupational therapy on-site visits and telehealth visits (i.e., a hybrid service delivery model) on quality outcomes and client satisfaction. There have been few studies to date specifically exploring the efficacy of this model in the home health care setting.

METHODS

A quasi-experimental pretest-posttest study was conducted by an occupational therapist (first author). The pilot study was conducted over an eight-week period in Greater Cleveland, Ohio. Participants received individualized occupational therapy home health intervention via a combination of on-site and telehealth visits. Two outcome measures, the Canadian Occupational Performance Measure (COPM) and OASIS, were administered before and after the course of intervention to assess client satisfaction and actual functional performance. At discharge, the OASIS was completed by the last discipline on the home care case. If completed by another discipline, the occupational therapist (first author) provided recommendations to complete the OASIS GG-codes, meant to measure functional changes in self-care and mobility.

An author-designed post-intervention survey was also used to measure the participants' overall perceptions of the telehealth experience including technology and use of both on-site and telehealth visits to address participant home care occupational therapy goals. The survey was divided into three parts. Part One contained five questions using a Likert scale that surveyed participants' satisfaction with the technology experience. Higher scores indicated greater satisfaction. Questions asked about client satisfaction were specific to overall device use, voice quality, visual quality, ease of use, and convenience. Part Two gathered information about participants' overall perception of the telehealth experience. Part Three collected demographic information and asked if the participants had received occupational therapy previously and if they felt occupational therapy services provided through telehealth would benefit others. The survey included two open-ended questions asking for advantages and disadvantages with using telehealth visits in conjunction with the on-site occupational therapy visits.

Inclusion and exclusion criteria were established by the first author and education was provided for all clinical staff performing Start of Care OASIS. The registered nurse or physical therapist establishing eligibility for services assessed the potential candidates for the study and completed an inclusion/exclusion criteria checklist. Inclusion criteria were: receiving homebound home health care services; 18 years of age or older; ability to see and hear; good to adequate fine motor dexterity to operate electronic device; could make own decisions about medical care; comprehended basic directions with cognitive skills permitting use of telehealth technology; ability to independently schedule appointments and tell time; a need for occupational therapy services; and agreed to receive a combination of on-site and virtual occupational therapy visits. Exclusion criteria were: a diagnosis of dementia or moderate to severe cognitive deficits that would impair ability to provide informed consent; inability to access the

telehealth technology; non-English speaking; or severe low vision.

After a comprehensive occupational therapy evaluation was completed, the assignment of on-site visits and telehealth visits and the duration and frequency of visits varied by patient based on individual need. The determination for the breakdown of on-site and virtual visits was determined by the first author. A guide for service delivery model designed by the first author served as a benchmark in establishing the care plan. Clinical reasoning, clinical judgement, client needs, cultural context, professional standards of care and the AOTA Code of Ethics (AOTA, 2015) served as guidance in both the service guide delivery model development and the overall care plan decision-making process. The Telehealth Position Paper from the American Occupational Therapy Association served as additional guidance for the first author (AOTA, 2018).

On-site visits addressed areas of bathing, dressing, toileting, functional transfer training, homemaking tasks, and other privacy-sensitive tasks. Privacy-sensitive tasks involved exposure of the body. Telehealth interventions included safety education, energy conservation education, chronic care instruction, pain and medication management, activities of daily living that did not expose the body, therapeutic exercise, and review of any prior instruction provided on-site or virtually. Durable medical equipment and adaptive equipment needs with instruction were provided throughout both visit types. See the service delivery guide for this study in Appendix A. IRB approval was obtained from Chatham University.

PARTICIPANTS

Participants were recruited from two Medicare-certified home health care agencies in the Greater Cleveland area via convenience sampling. Home health care agency nurses and physical therapists were educated in the recruitment process. A script was read, and potential participants were assessed for appropriateness to participate in the telehealth study if inclusion criteria were met. A consent form was provided to potential study participants and the first author was assigned the occupational therapy evaluation.

Participants were included in the study regardless of payor type, and initially 10 clients provided informed consent. However, one participant was admitted to the hospital after the occupational therapy evaluation and did not return home within the study timeframe; therefore, the final sample size was nine. Participants presented with a variety of primary diagnoses ranging from cardiac (n=2), orthopedic (n=3), falls (n=1), and other medical condition (n=3). Participants included eight females and one male and ranged in age from 61 to 90 years old. Table 1 includes additional participant demographics.

Table 1

Participant Demographics of Study Participants (N=9)

Partic-ipant	Age	Gender	Race	Primary Diagnosis	Education	Living Situation	# On site visits	# Tele-Health visits	Own device	Type of device/ prior know-ledge
A	79	F	Caucasian	Diarrhea, Abdominal Pain	High School	With Someone	6	2	Yes	iPad Tablet/N
B	84	F	Caucasian	Septic Reactive Arthritis	High School	Alone	3	2	Yes	iPad Tablet/Y
C	90	F	Caucasian	Sepsis, UTI with IV	Bachelor Degree	With Someone	7	2	Yes	iPad Tablet/N
D	61	M	Caucasian	Coronary Artery Bypass Grafting x 4 Vessels	Masters+ Degree	With Someone	5	1	Yes	Dell Laptop/Y
E	77	F	Caucasian	Total Knee Replacement	High School	Alone	3	1	No	iPad Tablet/N
F	85	F	Caucasian	Femur Fracture with Pinning	Bachelor Degree	Alone	5	1	Yes	iPad tablet/N

G	84	F	Caucasian	Vertigo, Hypertension, Remote CVA	Bachelor Degree	Alone	3	1	Yes	iPad tablet; Smart Phone/Y
H	90	F	Caucasian	Falls, Transfusions, Unexplained Bruising	High School	With Someone	4	1	Yes	Samsung Tablet/N
I	74	F	Caucasian	Bilateral Total Knee Replacement	High School	With Someone	5	1	Yes	iPad tablet/N

TECHNOLOGY

The technology platform used for this study was Bluestream Health. This platform met all HIPAA compliancy standards with: secure data management capacities, share-screen capability, documentation sharing features, and availability of technical resources to modify features within the platform and address technical concerns. The participants used a variety of technology devices that included the iPad tablet, Samsung Galaxy tablet, Dell laptop, and an iPhone smartphone as shown in Table 1. The technology devices were owned by the participant, a family member, or were issued for loan use within the study guidelines by the first author at the initial occupational therapy evaluation. Prior to engaging in the telehealth intervention all participants were instructed on the platform use and the home environment was assessed to ensure adequate bandwidth and/or internet or phone service. The first author reviewed the log-in process at the initial evaluation visit and trial practice was performed until the client was comfortable with the process.

OUTCOME MEASURES

CANADIAN OCCUPATIONAL PERFORMANCE MEASURE (COPM)

The COPM is an individualized and self-reported measure of client satisfaction, importance, and perception of performance to a client-specific problem area in occupational performance (Law et al., 2014). This tool is designed to assess the client's perception of performance and supports client-centered care. The COPM was used to identify problem areas in the client's occupational performance and assisted in establishing therapy goals. Importance of performance area, perception of performance of task, and satisfaction of performance were rated by the participants on a scale of 1-10, with 10 being the higher score. Research indicates that the COPM has high content and construct validity, responsiveness to change over time, interpretability and feasibility (Tuntland et al., 2016), which made it a good fit for this study. This assessment was administered at the beginning and end of the occupational therapy course of treatment.

OUTCOMES AND ASSESSMENT INFORMATION SET (OASIS)

The OASIS is within the realm of public domain and is embedded in the medical record for each home health care client. The OASIS GG-codes address specific areas of activities of daily living, functional mobility and safety. Research findings on the validity and reliability of the OASIS demonstrates the tool accurately measures outcomes for home health care clients (Tullai-McGuinness et al., 2009). The OASIS provides constructive data on the impact of occupational therapy on areas of activities of daily living and instrumental activities of daily living, to validate impact of home health care services on occupational performance. This measurement tool allowed for data collection and analysis of clients' occupational performance for this study. The OASIS is completed at the start of home health care and at discharge. At the start of care the OASIS was completed by the admitting registered nurse or physical therapist; the first author (an occupational therapist) provided recommendations to the completing clinician for scoring on GG codes. The discharge OASIS was completed by the last discipline in the client's care with feedback from the care team for accurate scoring of the GG codes.

POST-INTERVENTION SURVEY

The first author developed a post-intervention survey with Likert-type questions and open-ended questions. After development, the survey was reviewed by experts within the fields of telehealth and occupational therapy to assess for relevance, clarity, and inclusion of needed data items. Expert feedback included recommendations to add and delete items, clarify the wording of questions, and make format changes. Any difference of opinion was discussed until consensus was achieved. Modifications to the tool were made based on the experts' feedback. The final version of the survey collected demographic information and measured participants' perception and satisfaction with a combination of on-site and virtual occupational therapy visits.

PROCEDURES

The study was implemented in four phases over the eight-week period consisting of: initial visit and pre-intervention outcome measures, intervention, discharge visit, and post-intervention outcome measures. See Table 2 for an illustration of the steps completed for each phase of the study.

Table 2

Phases of Study with In-Phase Steps

Initial Visit and Pre-intervention Outcome Measures	Intervention	Discharge Visit	Post-intervention Outcome Measures
• Informed Consent reviewed, questions answered, and signed consent collected • Occupational therapy evaluation • COPM administered and OASIS data collected • Technology device determination and platform instruction	• Occupational therapy on-site visits in combination with telehealth visits • Review of occupational therapy plan of care • Modification of service delivery guide • Documentation of visit with plan established for next visit(s)	• Final on-site intervention as per agency guidelines • Collection of post-intervention survey if completed • Loaned technology collected	• Post-Intervention Survey • COPM • OASIS

For each participant, the occupational therapy evaluation was completed by the first author per Medicare/agency guidelines. Findings were discussed with the participant and a client-centered plan of care was developed. The first author determined the breakdown of on-site visits and virtual visits and noted them on the participant's calendar. The COPM data were collected by asking participants to identify areas they wanted to address during therapy. The participants further scored the measure as per assessment instructions and the data were recorded on the COPM form. The first author completed an OASIS coding form which factored into the participants' overall GG code scoring on the Start of Care OASIS.

The intervention visits followed the physician-signed plan of care. All telehealth intervention visits were performed by the first author. On-site visits were performed by the first author or a certified occupational therapy assistant, which is standard practice for this setting. The number of on-site visits per participant varied from three to seven visits and the telehealth visits varied from one to two visits per participant. The duration of on-site visits ranged from 45-75 minutes and the telehealth visits ranged from 23-42 minutes. The discharge visit was on-site and included administration of all study outcome measures.

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DATA ANALYSIS

Quantitative data were analyzed via descriptive and inferential statistics using the SPSS software Version 23 program. Cohen's d was manually calculated. Qualitative data collected from the post-intervention survey were transferred to Microsoft Excel Version 16 for analysis. Data were reviewed by the first author and the second author independently for investigator triangulation. The data were coded into themes individually and any disagreements were resolved through discussion until consensus was reached. Inductive analysis was applied, and commonalities were identified.

RESULTS

QUANTITATIVE RESULTS

COPM

Importance. Participants were asked to identify up to five occupational performance problems they wanted to address. This assessment tool was used to measure each participant's perception of occupational performance and satisfaction from start to completion of occupational therapy intervention. Each participant was asked to rate the importance of each identified occupational performance problem on a scale of 1-10 with 10 being most important. Participants were allowed the opportunity to list more than five problems but then the participant and first author ranked the top five by level of importance. Participant importance rankings varied with one participant scoring a three and a four on two identified problems, but most scores were from nine to ten with a mean of 8.86. There was no correlation between ranking of importance and amount of change from pre-score to post-score in performance or satisfaction.

Performance and satisfaction. A total of 43 occupational performance problems were identified. These were categorized into nine areas: self-care (30%), IADLs (21%), community access (12%), transfers (9%), home mobility/steps (7%), safety (7%), socialization/leisure (7%), endurance (5%), and balance (2%). See Figure 1 for an illustration of identified areas of performance problems.

Figure 1

Percentage of identified performance areas

Note: Percentage of identified performance areas from the Canadian Occupational Performance Measure (n=9).

Each participant rated the performance of the identified occupational performance problem on a scale of 1-10 with 10 representing able to do it extremely well. The mean of the participants' pre-performance scores was +2.33 and the mean of the post-performance scores was +8.56. The mean score for change for all participants in all occupational performance problems was +6.23.

Participants rated satisfaction of the identified occupational performance problem on a scale of 1-10 with 10 representing extremely satisfied. Participant pre-satisfaction scores had a mean of +2.56 and participants' post-satisfaction scores had a mean of +8.95. The mean score for change for all participants for satisfaction was +6.4. A higher score indicates an improvement and all 43 identified occupational performance problems showed improvement in both performance and satisfaction. Table 3 compares the occupational performance problems pre- and post-scores identified by participants and identifies overall change in each area.

Table 3

Comparison of Pre- and Post- Canadian Occupational Performance Measure Data

		Performance				Satisfaction		
Participant	**Occupational Problem**	**Importance**	**Pre**	**Post**	**Change**	**Pre**	**Post**	**Change**
A	Showering	8	1	7	**6**	1	8	**7**
	Dressing	10	1	9	**8**	1	9	**8**
	Living area access	10	1	9	**8**	1	10	**9**
	Meal prep/cleanup	10	1	8	**7**	1	8	**7**
	Community access	9	1	5	**4**	1	7	**6**
B	Toileting hygiene	9	5	10	**5**	5	10	**5**
	Transfers	10	7	10	**3**	6	10	**4**
	Endurance	10	6	9	**3**	5	9	**4**
C	Dressing	9	2	10	**8**	2	10	**8**
	Showering	9	1	9	**8**	1	10	**9**
	Socialization/Leisure	10	1	9	**8**	1	10	**9**
	Transfers	10	2	8	**6**	3	9	**6**
	Community Access	8	1	10	**9**	5	10	**5**
D	Showering	7	2	8	**6**	1	9	**8**
	Endurance	10	1	7	**6**	1	9	**8**
	Functional tasks	10	1	9	**8**	1	9	**8**
	Transfers	6	5	7	**2**	2	8	**6**
	Safety in home	5	3	9	**6**	2	9	**7**
E	Showering	10	1	8	**7**	1	7	**6**
	Dressing	10	3	9	**6**	3	9	**6**
	Safety	10	1	7	**6**	1	7	**6**
	Community access	10	3	9	**6**	1	9	**8**
	Laundry	8	1	9	**8**	1	10	**9**
F	Dressing	8	7	9	**2**	8	9	**1**
	Transfers	4	1	9	**8**	1	9	**8**
	Community access	3	1	9	**8**	1	9	**8**
	Socialization	9	1	9	**8**	1	9	**8**
	Home tasks	9	1	5	**4**	1	7	**6**
G	Showering	9	5	9	**4**	3	9	**6**
	Carrying items	8	4	9	**5**	2	9	**7**
	Balance	10	5	9	**4**	4	10	**6**
	Community access	9	1	8	**7**	3	8	**5**
	Home tasks	10	5	9	**4**	5	10	**5**
H	Showering/Dressing	10	6	10	**4**	5	10	**5**
	Cane for safety	10	2	9	**7**	3	9	**6**
	Cooking	10	1	9	**8**	2	9	**7**
	Laundry	10	2	9	**7**	3	10	**7**
	Helping care for daughter	9	1	7	**6**	3	8	**5**
I	Shower in tub	9	1	9	**8**	3	9	**6**
	Dress self	9	2	8	**6**	3	8	**5**
	Steps to upstairs	10	1	8	**7**	4	8	**4**
	Sleep in bed	10	1	10	**9**	3	10	**7**
	Cook/laundry	7	1	9	**8**	5	9	**4**
	MEAN	**8.86**	**2.33**	**8.56**	**6.23**	**2.56**	**8.95**	**6.4**

Individual improvement averages of all identified occupational performance problems ranged from +3.5 to +7.8 points for performance and +4.4 to +7.4 points for satisfaction. For all participants there was improvement for all identified occupational performance problems. Figure 2 compares the individual participants' average improvement in perceived performance and satisfaction.

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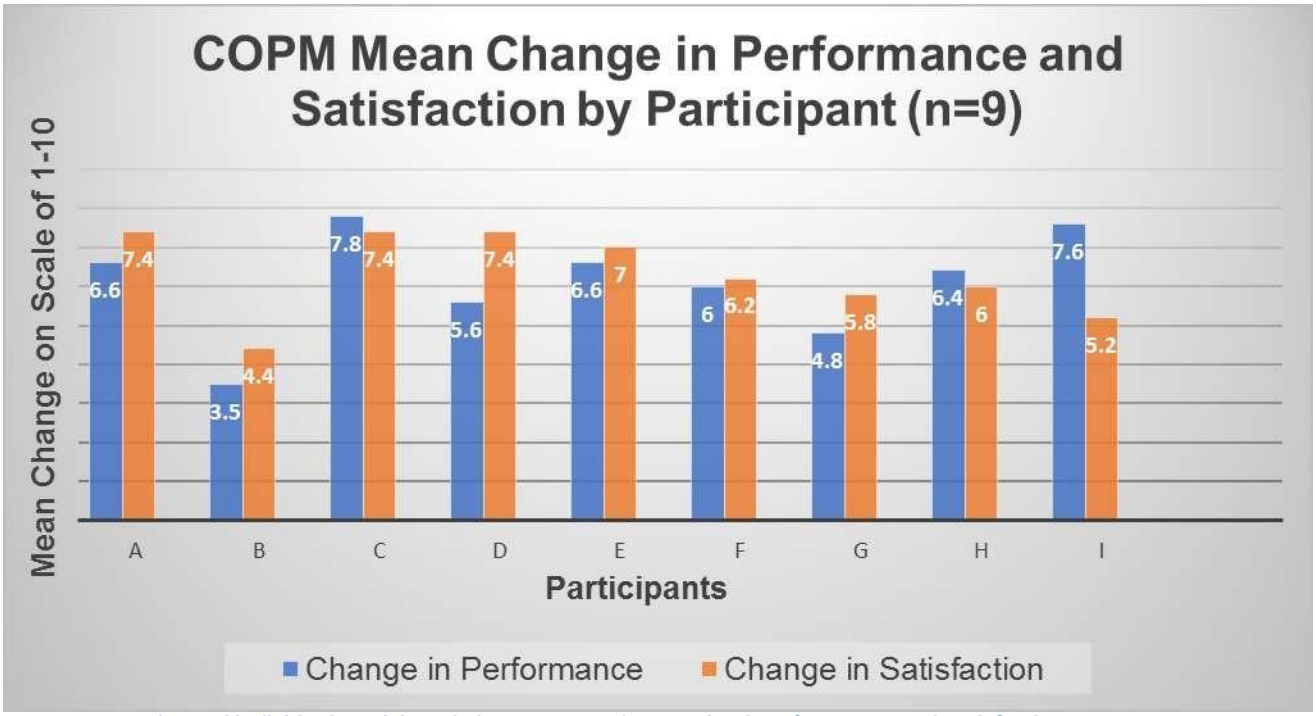
Figure 2

Individual Participant's Average Improvement in Perceived Performance and Satisfaction



Note. Comparison of individual participant's improvement in perceived performance and satisfaction.

Paired sample t-test (pre-test vs. post-test) yielded a t-value of 21.65 for performance and 24.78 for satisfaction. These extremely large values were significant well beyond a p=value of <.001. The effects sizes for the COPM as indicated by Cohen's d was high. See Table 4 for statistical analysis findings for the Canadian Occupational Performance Measure paired sample test and Cohen's d.

Table 4

Statistical analysis for COPM

	Paired Differences									
	# Problem areas	**Mean**	**SD**	**SE**	**t**	**df**	**Sig. (2-tailed)**	**p value**	**Significance**	Cohen's d
Pre-Post Performance	43	2.33-8.56	1.88	.288	21.65	42	.000	<.001	Highly Significant	3.31
Pre-Post Satisfaction	43	2.56-8.95	1.69	.258	24.78	42	.000	<.001	Highly Significant	3.78

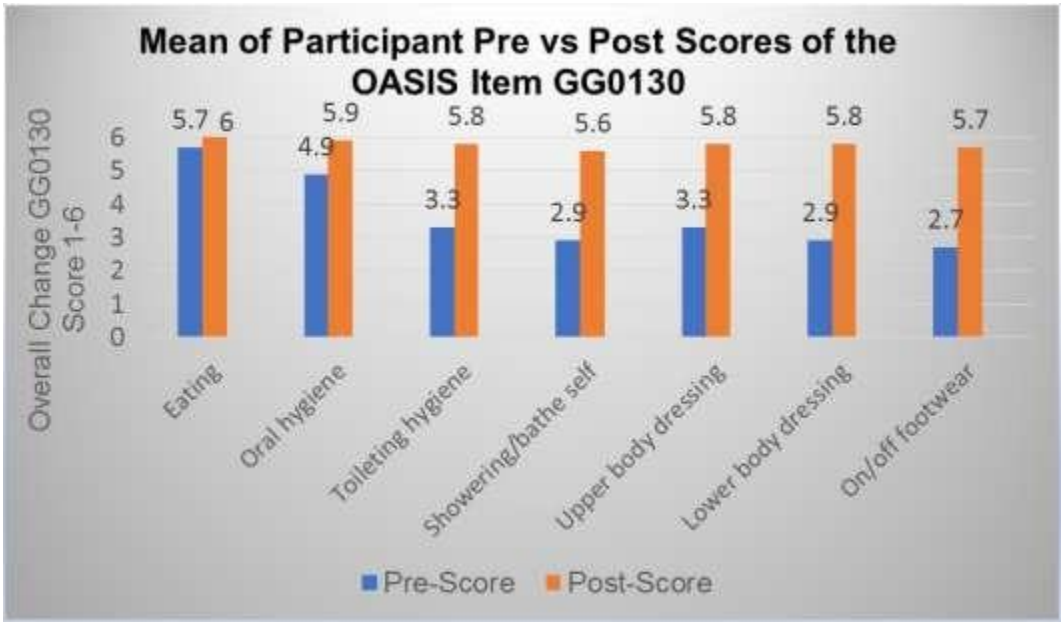
Note: Table shows statistical analysis for COPM mean, standard deviation (SD), standard error mean (SE), t-value, p-value, and significance based off paired t-test for all nine participants.

OASIS. The OASIS GG-codes addressed specific areas of activities of daily living, functional mobility, and safety. The GG0100 code looked at four prior functional categories of self-care, ambulation, stairs, and functional cognition. Eight of nine participants were independent in self-care prior to their current illness, injury, or exacerbation. Seven were independent with ambulation with two participants requiring some assistance prior to admission. Previously, five participants were independent with stairs, two required some assistance, and two had no stairs in their living environment. All participants were scored as independent for functional cognition prior to their current illness, injury, or exacerbation as well as during the initial occupational therapy visit. GG0110 captured each participant's prior mobility device use. Four of the participants had no prior device use and five had prior device use.

GG0130 measured each participant's self-care safety and quality of performance at start of care and at discharge. Self-care tasks measured were eating, oral hygiene, toileting hygiene, showering/bathing, upper and lower body dressing, and putting on/taking off footwear. Scores ranged from 1-Dependent to 6-Independent with an overall pre-score mean of 3.67 and post-score mean of 5.78. Figure 3 illustrates overall participant pre- and post-score change in self-care measures.

Figure 3

OASIS GG0130



Note. OASIS GG0130 overall participant pre- and post- change scores in eating, oral hygiene, toileting hygiene, showering/bathing, upper and lower body dressing, and putting on/taking off footwear. A higher score indicates a higher level of function.

GG0170 captures a participant's performance in mobility for 20 measures. Scored measures of mobility included bed mobility (rolling, lying to sitting, and sit to lying); transfers (sit to stand, bed/chair, toilet, and car); walking (10 feet, 50 feet, 150 feet, and 10 feet uneven surfaces); steps (1 step, 4 steps, and 12 steps) and picking up an object. The final five measures address wheelchair use and ability (e.g., propelling and navigating wheelchair). In this study one participant used a wheelchair prior to home care and continued this use after discharge. The scoring criteria is the same as for GG0130. Scoring for all measures occurred at start of care and at discharge.

Paired sample t-test comparing pre- and post-test ratings showed a *t*-value of 12.80 for GG0130 (*p*-value of <.001) and a value of 15.39 (*p*-value <.001) for GG0170. The effects sizes for OASIS as indicated by Cohen's d was high. See Table 5 for statistical analysis findings for the OASIS GG0130 and GG0170 paired sample test and Cohen's d.

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Table 5

OASIS Comparison

	Paired Differences									
	# areas	Mean	SD	SE	t	df	Sig. (2-tailed)	p value	Significance	Cohen's d
Pre-Post GG0130	63	3.67-5.78	1.31	.165	12.80	62	.000	<.001	Highly Significant	1.61
Pre-Post GG0170	104	3.24-5.28	1.35	.132	15.39	103	.000	<.001	Highly Significant	1.51

Note. Shows statistical analysis for GG0130 and GG0170 for mean, standard deviation (SD), standard error mean (SE), t-value, p-value, and significance based off paired t-test for all nine participants.

POST-INTERVENTION SURVEY

All but one of the participants answered 'Satisfied' or 'Very Satisfied' in the categories of technology use, voice quality, visual quality, and convenience. One participant answered 'Dissatisfied' with technology use and visual quality, 'Very Dissatisfied' with ease of use of device and 'No Opinion' for convenience. Eight of the nine participants felt the combination of telehealth visits with on-site visits met their needs and if they needed occupational therapy in the future, they would be willing to receive intervention with the combination of both types of visits. Six of the participants had received previous occupational therapy and three had never received occupational therapy prior to this home care admission. It should be noted that this question was asking about any occupational therapy intervention such as hospital or skilled nursing facility as well as home care. Eight of the nine participants responded that they felt others could benefit from occupational therapy services delivered through telehealth. The post-intervention survey data is illustrated in Appendix B.

QUALITATIVE RESULTS

POST-INTERVENTION SURVEY

Participant responses indicated three predominant themes in relation to advantages for the combination of in-person and telehealth visits. The first theme identified was increased opportunity for both the participant and the clinician. This theme was inclusive of participant reported statements about "opportunity for further instruction" and "opportunity for real time instruction." The second theme was convenience, and one participant noted how it was "...easier for the therapist. There is no travel time or bad weather to contend with" while another stated "Discussion was not impeded [sic] and time and travel saving was significant compared to a 'traditional' visit." The final theme of quicker response time was supported by statements of "Can react quick to an unplanned opportunity" and "It's handy and can handle a small problem right away." For disadvantages two themes emerged: preferring on-site visits and technology challenges. See Appendix B for sample quotes from the participants specific to identified themes.

Additional participants' responses provided information to yes/no questions asking if the participants felt the combination of visits met their needs and if they would receive occupational therapy services again with both on-site and telehealth visits. In regard to feeling the combination of visits met their needs and if participants would recommend this approach to care, participants stated: "I also enjoyed the discussion on my progress with (first author) especially when she noticed slight changes in my posture, expression" and "I think you hit the most important points quickly with this dual approach." For those who answered 'no,' statements included: "Not enough exposure to know whether I would appreciate using it" and "It was nerve wracking. I am afraid I will be expected to receive instruction for sx [sic] over my phone. No thank you." The last question allowed participants to include any additional comments they wanted to share. Participants shared overall statements such as "Having OT got me back to where I was before my illness" and "It was a very positive experience." Participants' explanatory quotes can be seen in Appendix B.

DISCUSSION

Because of expansive home health reimbursement changes and reductions, there is a need to explore alternative service delivery models for therapy services that demonstrate improved outcomes and client satisfaction. One caveat for exploring alternate service delivery models is to assure that client-centered care is not negatively

impacted. Client-centered care is assessed by examining client perception of satisfaction and clinical measures of performance improvement.

The purpose of this study was to determine if a combination of on-site home health occupational therapy visits and telehealth occupational therapy visits would improve the homebound clients' perceived satisfaction with and perception of occupational performance. The findings of the study support use of this combination of visits and suggest this may be a viable alternative service delivery model for providing occupational therapy interventions in the home care setting. Furthermore, the findings support that the client-centered care model is not negatively impacted with the use of telehealth, but in fact, telehealth is perceived positively by clients.

TELEHEALTH

This study focused on the use of telehealth and did not include pre-determined parameters on diagnosis or age of participants. While a study by Nelson et al. (2017) demonstrated that older adults might be less likely to want to initially participate in telehealth, the findings in this study indicated that age did not factor into willingness or success of the telehealth intervention portion of the care. Six of the participants did not have any prior experience with the technology; this did not impact the overall results of improvement in all areas of performance measured. While much of the evidence surrounding telehealth use addresses clients with specific diagnoses (Boehm et al., 2015; Dunleavy et al., 2013; Fitzsimmons et al., 2016; Gorst et al., 2016; Hwang et al., 2017; Marquis et al., 2014; Nelson et al., 2017; Radhakrishnan et al., 2016; Renda & Lape, 2018; Tousignant et al., 2014; Yuen et al., 2015), this study had no restrictions in place related to diagnosis and provides both preliminary support and new evidence to suggest telehealth may be appropriate for a variety of diagnoses in the traditional home care setting.

Some participants required more involved instruction initially on how to use the technology but none of the findings indicated that prior knowledge of technology, age, diagnosis, or caregiver supports played a role in their overall use of telehealth for occupational therapy intervention. The findings indicated that most participants were either 'Very satisfied' or 'Satisfied' with the measured areas of technology use. See Appendix B for illustrated results.

The findings of this study support prior research that suggests telehealth is a viable option the delivery of therapy services in a community-based model of care (Boehm et al., 2015; Fitzsimmons et al., 2016; Gorst et al., 2016; Grant et al., 2015; Hwang et al., 2017; Levy et al., 2015; Marquis et al., 2014; Nelson et al., 2017; Renda & Lape, 2018; Tousignant et al., 2014). This study specifically demonstrates that telehealth can be a viable option for the homebound home care client. The findings support that telehealth can be an effective service delivery model when virtual visits are provided in conjunction with on-site visits with all but one of the participants reporting satisfaction with this model. This participant did not feel the combination of visits met their needs, nor did they recommend this treatment model for others. They cited anxiety over technology use and concern that "I do not want this technology to take anyones [sic] job." In prior studies, clients felt telehealth was an option but preferred in-person visits; however, overall changes in client satisfaction and perception scores were not statistically significant in studies of either onsite-site or telehealth visits (Boehn et al., 2015; Fitzsimmons et al., 2016; Gorst et al., 2016). While qualitative findings from this study supported the preference for on-site visits, statistically significant improvements for both client satisfaction and perceptions of improvement were noted with the use of a combination of onsite and telehealth visits. This may indicate increased comfort with technology when the opportunity also exists for in-person interaction.

OUTCOME MEASURES

Both the COPM and the post-intervention survey were client self-reported measures. OASIS is a clinically driven assessment tool. Both types of outcome measures were important to explore as the government publishes publicly reported outcomes on both performance outcomes and client satisfaction for viewing by the public, as well as referral sources. A home care agency's survival can be impacted by this publicly available data. The findings demonstrated that with the use of on-site and telehealth visits, participants' demonstrated improvements in all 43 identified problem areas on the COPM. Much of the literature supports client reported improvements in *either* satisfaction or functional performance improvement (Grant et al., 2015; Hwang et al., 2017; Levy et al., 2015). This study found that by utilizing the use of a combination of on-site and telehealth visits, all nine participants demonstrated highly statistically significant improvements in both performance and satisfaction post occupational therapy intervention. A change of two points on the COPM measure is seen as clinically significant. With a mean change score for all participants in both performance and satisfaction greater than six points, the findings support that telehealth visits in conjunction with on-site visits is both a clinically and statistically significant alternative service delivery model.

Based on a client-centered approach, each participant identified a different list of problems. Review of the literature identified functional mobility as a highly identified problem (Donnelly et al., 2017; Renda & Lape, 2018). Findings for this study indicated that self-care, specifically showering, plays an important role in the rehabilitation needs of the homebound client and was identified as the top priority in six

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of the nine participants. This study began to identify what interventions would be feasible for on-site and telehealth visits and correlated these interventions to identified practice patterns in addressing goals. For example, a shower was identified as an on-site visit but the discussion on DME and adaptive equipment needs was accomplished successfully within the virtual visit.

The quantitative findings indicated that participants demonstrated statistically and clinically significant improvements in all areas of client perception and clinician assessed performance outcomes. The qualitative findings indicated that participants felt the combination of in-person and telehealth visits provided a good opportunity, quicker response, and convenience. The study results also indicated that while participants might prefer on-site visits, participants felt that the combination of on-site and telehealth visits met their needs, they would receive occupational therapy services again in this manner, and they would recommend this service delivery model to other home care clients.

The clinically measured OASIS GG0130 and GG0170 indicated that for areas of self-care and functional mobility the combination of on-site and telehealth visits was a viable service delivery model. All participants' demonstrated highly statistically significant improvements in both GG0130 (self-care) and GG0170 (functional mobility) post occupational therapy intervention. This study used three outcome measures to collect data. Results indicate that the participant perceived improvements in performance and satisfaction with performance (COPM), and the clinically assessed participant improvement (OASIS) were statistically and clinically significant.

LIMITATIONS

The small homogenous sample size from one geographic area decreases the generalizability of the findings to a larger population.

Another limitation was that all participants were found after intervention to have a high school degree or higher. This could have impacted the ability to engage in the study and follow the technology directions.

Furthermore, one anticipated issue in the use of technology for telehealth services is cost. While this study did not find any insurmountable challenges specific to technology, the sample size and timeframe were too limiting to explore costs.

The nature of the outcome measures may also be a limitation. The COPM is a self-report measure and the OASIS is a clinician reporting measurement tool that could have allowed for participant or researcher bias.

The timeframe of the study was eight weeks and did not allow for long-term follow-up. This lack of follow-up limits the ability to understand and analyze the long-term outcomes. The timeframe also limits the ability to address sustainability and identify any additional barriers to the use of telehealth in the home health care setting that may occur.

IMPLICATIONS

This pilot study adds to the body of knowledge for feasibility of telehealth utilization in providing occupational therapy visits in home care with a combination of both on-site and telehealth visits. This study demonstrated positive client perceptions of satisfaction and occupational performance improvement at a highly significant level. The application of this study to the homebound client adds evidence to a changing area of practice for the home care occupational therapist. Telehealth has been identified as a future service delivery model in home care (CMS, 2018) as well as supported as an appropriate service delivery model for occupational therapy practitioners (AOTA, 2018; Cason, 2015). This pilot study's findings support initiatives to expand the use of telehealth as a viable service delivery model for occupational therapy in traditional home care. There is a need for further research to evaluate the efficacy of home health care services provided exclusively through telehealth and through a hybrid approach, wherein some services are provided in-person and others through telehealth (Levy et al., 2015; Nelson et al., 2017; Nobakht et al., 2017). To fully assess telehealth in a client-centered model of care both quantitative and qualitative factors must be considered.

Expanding the study question to include all three therapy disciplines (occupational therapy, physical therapy, and speech therapy) would provide an interdisciplinary approach that could allow professionals to advocate for maintaining reimbursement for services provided through telehealth, especially after the COVID-19 public health emergency has ended. A longitudinal study would be warranted to explore developmental trends and improve efficacy of determining variable practice patterns over time. Similar studies and additional research are needed to more extensively address the correlation of the clinical component and the client-driven component of occupational performance improvement. Further research studies to address clinical implications of telehealth use in home care such as clinical skill sets necessary, service delivery guides, and exploration of cost implications are needed. Exploration of comparative data utilizing the OASIS outcome measure for performance improvements from all on-site visits and a combination of on-site and telehealth visits is planned as a follow-up study.

CONCLUSION

As healthcare policy and reimbursement restructuring continues, these changes will continue to challenge the home health care system. The global coronavirus pandemic has further catapulted telehealth into a national narrative and studies such as this provide evidence that support alternative client-centered service delivery models while maintaining quality outcomes and patient satisfaction. The findings from this study add to the much-needed evidence to support telehealth initiatives and future projections for the provision of home health care services. This pilot study could serve to support future policy initiatives related to the provision of therapy services through telehealth. Finally, this study suggests the use of telehealth for the traditional home care population with a combination of on-site and virtual visits may serve as a viable service delivery model for home care agencies and home care clients.

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Jl. DrSoebandi No. 99 Jember, Telp/Fax. (0331) 483536,
E_mail :info@stikesdrsoebandi.ac.id Website: http://www.stikesdrsoebandi.ac.id

LEMBAR KONSULTASI PEMBIMBINGAN PROPOSAL DAN SKRIPSI
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Judul Skripsi : **Penerapan *Telenursing* Terhadap Peningkatan Kualitas Pelayanan Kesehatan *Home Care* di Masa Pandemi Covid-19**
(*Literatur Review*)

Nama Mahasiswa : **Amelia Shinta Dewi**

NIM : **18010050**

Pembimbing I : **Yuniasih Purwaningrum, , SST, M.Kes**

Pembimbing II : **Mahmud Ady Yuwanto, S.Kep., Ns., M.M., M.Kep.**

Pembimbing I				Pembimbing II			
No.	Tanggal	Materi yang dikonsulkan dan masukan pembimbing	TTD DPU	No.	Tanggal	Materi yang dikonsulkan dan masukan pembimbing	TTD DPA
1	18/11 21	Konsul Judul dan ACC Judul	[signature]	1	18/11 21	Konsul judul : pilih judul sesuai [illegible]. : dasar, [illegible], holistik	[signature]
2	20/11 21	Pengajuan Proposal BAB 1	[signature]	2		Silakan u/ menentukan judul ttg Nursing informatics.	
3	26/11 21	Konsul revisi BAB 1 (revisi latbel, tujuan)	[signature]	3	03/11 [illegible]	Acc judul ttg penerapan telenursing → pel. Home care	[signature]

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Jl. DrSoebandi No. 99 Jember, Telp/Fax. (0331) 483536,
E_mail :info@stikesdrsoebandi.ac.id Website: http://www.stikesdrsoebandi.ac.id

4	4/12 2021	Konsul Bab 2, ACC Bab 1, - Tambahkan kerangka teori	4	25/11 21	Konsul BAB I, perbaiki : [illegible]
5	14/12 2021	Konsul proposal BAB 3	5	30/11 21	perbaiki penulisan daftar pustaka yang, Tabel → LR lengkapi BAB II
6	17/12 2021	ACC Bab 3 - ACC sempro	6	10/12 21	Konsul BAB II perbaiki tata tulis lengkapi daftar isi, " daftar pustaka
7			7	14/12 21	perbaiki penulisan : perbaiki kerangka teori lengkapi BAB III
8			8	20/12 21	Konsul BAB III, revisi sesuai saran lengkapi daftar pustaka / BAB [illegible]

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Jl. DrSoebandi No. 99 Jember, Telp/Fax. (0331) 483536,
E_mail :info@stikesdrsoebandi.ac.id Website: http://www.stikesdrsoebandi.ac.id

9				9	21/21 b	Seminar proposal	
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Program Studi : 1. Ners 2. Ilmu Keperawatan 3. Farmasi 4. DIII Kebidanan
5. Profesi Bidan 6. S1 Kebidanan 7. D IV Teknologi Laboratorium Medis
Jl. DrSoebandi No. 99 Jember, Telp/Fax. (0331) 483536,
E_mail :info@stikesdrsoebandi.ac.id Website: http://www.stikesdrsoebandi.ac.id

LEMBAR KONSULTASI PEMBIMBINGAN PROPOSAL DAN SKRIPSI
PROGRAM STUDI ILMU KEPERAWATAN
UNIVERSITAS dr.SOEBANDI

Judul Skripsi : Penerapan *Telenursing* Terhadap Peningkatan Kualitas Pelayanan Kesehatan *Home Care* Pada Pasien Covid-19: *Literatur review*

Nama Mahasiswa : Amelia Shinta Dewi

NIM : 18010050

Pembimbing I : Yuniasih Purwaningrum, SST,M.Kes

Pembimbing II : Mahmud Ady Yuwanto, S.Kep.,Ns.,M.M.,M.Kep

Pembimbing I				Pembimbing II			
No.	Tanggal	Materi yang dikonsulkan dan masukan pembimbing	TTD DPU	No.	Tanggal	Materi yang dikonsulkan dan masukan pembimbing	TTD DPA
1	15/04 2022	Konsul Bab 4 (Hasil dan Pembahasan)		1	20/4 22	hasil BAB 4, perbaiki sesuai saran & lanjut BAB 5.	
2	2/6 2022	Konsul Revisi bab 4, konsul Bab 5		2	3/6 22	hasil BAB 4 & 5, perbaiki sesuai saran, lanjut seminar hasil & tesis (ujian).	
3	29/6 2022	konsul revisi Bab 5 dan konsul Bab 6		3	7/7 22	konsul BAB 5 & 6 — perbaiki sesuai saran	

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E_mail :info@stikesdrsoebandi.ac.id Website: http://www.stikesdrsoebandi.ac.id

						[illegible] spasi paragraf 2, tabel, [illegible]	
4	13/07 22	Konsul Bab 4-6 ditambah abstrak.		4	9/7 22	pd pembahasan lebih di-[illegible] dari [illegible] penelitian [illegible]	
5	15/07 22	Konsul Revisi Bab 6, abstrak dan tambahan pengaruh di bab 5.		5	12/7 22	pd kesimpulan, [illegible] bahasa yg baku.	
6	18/7 22	Revisi lembar persetujuan ACC uji sidang semhas			13/7 22	lengkapi [illegible] dari BAB 1 - [illegible] dan [illegible] semhas.	
7				7	14/7 22	ACC sidang	
8				8			

Lampiran 9.

KALENDER PENYUSUNAN SKRIPSI

Kegiatan	November	Desember	Januari	Februari	Maret	April	Mei	Juni	Juli
Pengajuan Judul Skripsi									
Penyusunan Proposal Skripsi									
Seminar Proposal Skripsi									
Revisi Proposal Skripsi									
Penyusunan Hasil Skripsi									
Ujian Hasil Skripsi									

CURRICULUM VITAE

DATA PRIBADI

Nama	: Amelia Shinta Dewi
Tempat/Tanggal Lahir	: Jember, 30 April 2000
Jenis Kelamin	: Perempuan
Agama	: Islam
Status	: Mahasiswi
Alamat	: JL. Ahmad Yani Gang 1 No.4 Jember
No. Telp	: 083847767865
E-mail	: dewiameliashinta@gmail.com

RIWAYAT PENDIDIKAN

2006 – 2012	: SDN Jember Lor 01
2012 – 2015	: SMP Negeri 01 Jember
2015 – 2018	: SMA Negeri Arjasa
2018 – Sekarang	: Mahasiswi Universitas dr.Soebandi Jember