A scoping review of nursing roles in HCV telehealth

Keywords

role, nurse practitioner, nurse, telehealth, hepatitis C virus

Highlights

- In hepatitis C virus (HCV) telehealth care, this review has found limited evidence about nurse practitioner (NP) roles but relatively adequate evidence about the roles of nurses. The implementation of NP roles in HCV telehealth care appears to be lacking although the implementation of nurse roles is relatively adequate.

- This review has further identified the complementarity and interchangeability between the roles of NPs and nurses in HCV telehealth care, suggesting that the distinction between the two remains unclear.

- Future research should explore more comprehensively how to best deliver NP-led HCV telehealth care. Future research should also investigate how to best incorporate health education and health promotion and theoretical development into the delivery of HCV telehealth care, with an emphasis on employing qualitative methodologies.

Abstract

Little is known about the roles of nurse practitioners (NPs) and nurses in hepatitis C virus (HCV) telehealth care. This scoping review aims to understand what is known about the roles of NPs and nurses in HCV telehealth care. This review was guided by Arksey and O'Malley's methodological framework. A search of 18 databases was completed. Of 718 results identified, 16 met the objective of this review. In HCV telehealth care, the roles of NPs involved patient coordination and follow-up, diagnosis, and prescribing; the roles of nurses mainly included patient coordination and follow-up.

1. Introduction, Background, Significance, and Purpose

Hepatitis C virus (HCV) treatment has experienced two eras. Until 2016, HCV treatment involved interferon-based therapy, with a long treatment duration, low effectiveness, poor tolerance, and significant side effects.[1,2] Direct-acting antivirals (DAAs) are the current standard treatment, with 95% of patients with HCV achieving a sustained virologic response (SVR).[3,4] More than 90% of patients with HCV take DAAs for eight or 12 weeks.[5] Since March 2016, DAAs have been accessible and affordable for people with HCV in Australia through the Pharmaceutical Benefits Scheme (PBS), with specialists, general practitioners (GPs), nurse practitioners (NPs), and other health care providers authorised to prescribe this treatment.[6,7] In reviewing 17 studies concerning HCV treatment, Radley et al. (2019) noted that primary and community health care settings may be feasible to increase HCV treatment uptake. Of great importance in such settings are the roles of NPs and nurses.[8,9] NPs have a particular focus on improving the overall health of patients with HCV.[8] In addition to assessment, diagnosis, prescribing, and patient referral coordination, NPs often run independent clinics using a shared care model with other health care providers.[8,10] Nurses are mainly responsible for care coordination, patient education and follow-up, and practice gap identification.[11,12]

In particular, to date, telehealth has been applied extensively in the management of the HCV.[8,13] Telehealth is defined as the use of electronic information to deliver health care services.[14] Specifically used are delivery modalities such as videoconferences, phone calls, emails, and texts.[14] Typically, telehealth is used to connect health care providers and patients, thus enabling patients to remotely access health care services.[14] Telehealth can connect patients with HCV living in regional areas with health care providers located in metropolitan areas which saves money and time on travelling to such services.[8] Telehealth can also occur between health care providers, improving the quality of health care service provision.[15] For instance, to discuss complex HCV cases, primary health care providers can receive further support from specialists using telehealth.[15]

Relative to an extensive literature discussing the roles of NPs and nurses in the broad context of HCV management,[9,16,17] little is known about their roles in the more specific context of HCV management using telehealth. Further, the evidence regarding how to best deliver HCV telehealth care implementing nursing roles is lacking. In considering the growing acceptability and popularity of HCV telehealth care,[13] it is vital to provide consolidated information on how NPs and nurses participate in such service. This scoping review, therefore, addresses the following two questions:

(1) What are the roles of NPs and nurses in HCV telehealth care?
(2) What are the existing knowledge gaps in understanding of the roles of NPs and nurses in HCV telehealth care?

2. Methods

This scoping review was undertaken using an adjusted five-stage methodological framework developed by Arksey and O'Malley which includes the following steps: (1) identify a broad and appropriate research question; (2) identify all possible and relevant studies; (3) select eligible studies based on the inclusion and exclusion criteria; (4) data extraction; and (5) collate, summarize, and report results.[18]

Step 1 Research question

The two research questions are described in the previous section.

Step 2 Identification of studies

To determine search strings, we conducted a preliminary search and consulted with a librarian at the Queensland University of Technology, Australia. Two search strings (see Appendices File) were identified with key terms including 'telehealth', 'hepatitis C', 'nurse practitioner', and 'nurse'. For each key term, relevant synonyms were identified based on our knowledge, a preliminary search, and other published search strings in similar disciplines. Search techniques, such as Boolean operators, phase searching, and truncation, were used for each search string. The 18 databases (Table 1), Google, and Google Scholar were searched, which occurred between 1 October 2021 and 20 October 2021. Search fields for each database varied in including 'all fields', 'topic', and 'abstract'.

Step 3 Study selection

Given that a preliminary search found limited evidence on the topic, we decided to include national and international studies. Study selection was in accordance with specific inclusion and exclusion criteria. Studies were included if they: (a) were published in English; (b) had information about HCV management using telehealth; (c) described the roles of NPs or nurses; and (d) were full-text original research articles. Studies were excluded if they were: (a) literature reviews; (b) posters; or (c) abstracts. No restriction of publication year was set.

Database searches yielded 718 results. Figure 1 presents the steps of identifying eligible studies as directed by the PRISMA flow diagram.[19] Repeated, careful, and in-depth revision for each step was conducted to ensure all possible eligible studies were included. Although not required for a scoping review, an informal quality assessment was applied to evaluate the quality of possible included studies. Initially, 15 studies were identified for inclusion by the primary author, the other two co-authors then co-screened potential eligible studies and identified the same publications. An additional eligible study, however, was identified by the one co-author. Ultimately, 16 studies were included for this review. The primary author completed this review with the guidance of the co-authors.

Step 4 Charting the data

Data extraction was completed manually using three tables. Data related to study characteristics were extracted and entered into Table 2, including author, country/region, year of publication, study design/method, target HCV group, main outcome measured, and main findings. Data related to the roles of NPs and nurses, and stakeholders using telehealth were extracted and recorded in Results section.

Step 5 Collating, summarizing, and reporting the results

The following section provides a descriptive presentation of key results. The primary author identified and categorised the roles of NPs and nurses in HCV telehealth care based on the reported information extracted from the included studies, with the two co-authors providing insights into clinical implications of such roles on patient health.

3. Results

The 16 included studies (Figure 1) were published from 2004 to 2021. Of the 16 studies, two addressed the roles of NPs, one the roles of both nurses and NPs, and 13 the roles of nurses. Despite HCV treatments varying across the 16 studies, the purpose for this review was to synthesise the extant evidence regarding the roles of NPs and nurses in HCV telehealth care rather than evaluate the clinical effectiveness of HCV treatment. All studies reported the effectiveness of main outcomes. The types of main outcomes included satisfaction, accessibility, feasibility, cure rates, engagement, reach, and the capacity of health care providers.

3.1 NP roles: preparation, coordination, diagnosis, and prescribing

Two studies reported the relatively full application of NP scope of practice, including preparation, coordination, diagnosis, and prescribing.[20,21] In one Australian study, NPs accepted rural and remote patients with HCV through referrals from GPs.[21] Using videoconferences, NPs performed diagnosis, provided treatment, and liaised with pharmacists and pharmaceutical representatives who sent medications and support packages to patients by post.[21] Additionally, GPs were responsible for ongoing care after the completion of treatment.[21] A further USA study reported similar procedures, with the main difference that NPs provided continuous care after treatment commencement in consultation with a hepatologist.[20]

3.2 NP roles: patient coordination and follow-up services

One Australian study that included both NPs and nurses focused on telecommunication between health care providers.[22] To upskill primary health care providers, this study connected medical specialists with prison doctors using videoconferences, in contrast to a traditional telehealth model that provides direct telehealth communication between health care providers and patients.[22] In this study, NPs ordered blood tests and submitted required forms to nurses to validate.[22] Specialists then confirmed or revised

treatment plans proposed by prison doctors.[22] Afterwards, NPs ordered blood tests four weeks after treatment commencement and 12 weeks post treatment, and submitted results to nurses and specialists.[22] Compared with the other two studies where the roles of NPs were fully implemented,[20,21] NP roles in this study involved only patient coordination and follow-up as directed by medical professionals.[22]

This review found limited evidence (i.e. three studies) discussing the roles of NPs in HCV telehealth care. The roles of nurses in this context, however, have been increasingly reported. The following sections describe how nurses participate in HCV telehealth care services.

3.3 Roles of nurses: preparation and coordination

Nine studies positioned nurses as coordinators and consultants.[22-30] Across nine studies, nurses received referrals, assessed treatment eligibility, provided an explanation of telehealth, coordinated examinations, rescheduled missed appointments, completed required paperwork, and provided overall patient support.[22-30] Such coordination effectively reduced the time (e.g. half an hour) of each consultation by infectious disease physicians, hepatologists, or specialists providing telehealth-based HCV diagnosis and prescribing.[23,28,29] Of note, nurses took additional responsibilities across two studies. In one USA study,[29] nurses provided educational outreach to recruit health care providers interested in HCV treatment. In a Taiwanese study,[24] nurses attempted to recruit people at risk of HCV infection to undertake diagnostic tests.

3.4 Roles of nurses: holistic care services

In four studies, nurses provided comprehensive health care and social support services. In two USA studies,[29,30] nurses provided transport and financial support to patients with HCV and those patients applied for Medicaid or pharmaceutical patient assistance program if they were uninsured. In one Australian study,[26] nurses referred patients with HCV to other allied health services, such as mental health assessments, drug and alcohol assessments, GPs, physicians, and the nurses were involved in monitoring the outcomes of such services. In a further Taiwanese study,[31] nurses provided oral health services for patients with HCV.

3.5 Roles of nurses: follow-up services

Nine studies reported that nurses provided follow-up services to patients with HCV. Albeit with varying practices and purposes, such services all occurred after HCV treatment commencement. In four studies, nurses primarily provided follow-up services. For example, in one USA study,[29] nurses provided a follow-up visit 12 weeks post treatment to assess the effectiveness of treatment. In the other three telephone-based studies,[26,30,32] follow-up services included improving treatment adherence, resolving concerns about the side effects of treatment, reminding patients of subsequent appointments, and

reengaging patients (who were lost to follow up) to participate in health care services, each service obtaining high patient satisfaction.

Across the other five studies, nurses provided follow-up services in collaboration with other health care providers. In two studies, nurses frequently monitored the side effects of treatment and consulted with specialists.[22,25] In one Taiwanese study,[33] four nurses and one physician answered patients' calls at any time during HCV treatment to reduce the severity of complications and to provide continuous care. In one USA study, comprising three regional hepatology outreach clinics, nurses and hepatologists concurrently reviewed patient symptoms using an e-health platform and patients used this platform to raise their concerns and to talk directly to nurses or hepatologists.[34] In a study addressing HCV and HIV coinfection a team, comprising a clinician, a nurse, and a social worker, regularly provided telephone-based follow-up services and where patients failed to attend such services they were referred to a peer navigator who offered a home visit.[35]

3.6 Roles of nurses: classification of patients

Based on care needs, three studies reported that nurses classified patients with HCV into different groups. In one USA study, patients were consigned to three groups before HCV treatment commencement.[35] Specifically, green-level patients could take DAAs on their own and yellow and red-level patients were required to attend a nurse consultation and subsequent monitoring services.[35] Likewise, in the other two studies, patients with HCV were grouped by nurses according to the types of consultation, including consultations only between nurses and physicians (or hepatologists), or teleconferences or face-to-face consultations between patients and physicians (or hepatologists).[25,27]

4. Discussion

4.1 Limited evidence regarding the roles of NPs

This review found that within the published literature related to HCV telehealth care, two studies described only the roles of NPs, one study addressed the roles of both NPs and nurses, and 13 studies explored, in different ways, the roles of nurses only. Of the three studies involving NPs and patients with HCV, all patients were using interferon-based therapy. The extremely limited evidence on the roles of NPs may suggest that the implementation of NP roles in HCV telehealth care was limited before the era of DAAs and has continued to be lacking in the era of DAAs. Conversely, the roles of nurses in HCV telehealth care are continually growing with most studies involving nurses conducted in the era of DAAs. In a recent scoping review, Torrens et al. (2020) observed a range of obstacles that may hinder the development of NP roles in primary health care settings. Such obstacles included limited awareness of NP roles (e.g. by patients), limited acceptability from other health care providers (e.g. doctors, nurses), and NPs' limited confidence in decision making. Ljungbeck et al. (2021) also noted that a lack of uniform NP educational programs may impede the development of NP roles, making such roles

unclear and less acceptable in health care settings. Eriksson et al. (2018), however, suggested that NPs, relative to nurses, may have extended skills in providing personalised, long-term, and holistic health care services. Across the three studies describing the roles of NPs in HCV telehealth care, no information relating to such services was reported. By contrast, three included studies reported the coordination of allied health and social support services by nurses. Future research is required to understand more about NP intrapersonal and interpersonal contexts of HCV telehealth care.

4.2 Complementarity and interchangeability

All 16 studies included in this review reported the effectiveness of main outcomes, albeit in the context of various HCV treatment regimens. This may indicate that telehealth has been a feasible service delivery modality in HCV management since the era of interferon-based therapy. Moreover, this review found that NPs frequently used telehealth and that nurses less frequently used telehealth, with specialists, physicians, and hepatologists using telehealth more often. For both NPs and nurses, commonly used telehealth tools included videoconferences and phone calls.

Theoretically, in the broad context of HCV management, NPs have advanced knowledge in assessment, diagnosis, and prescribing, with nurses providing complementary skills, such as patient referral, coordination, follow-up, and support.[11,36,37] In particular, this review found that for nurses, meaningful and optimal use of their skills resulted in in-depth assessment and centralised coordination alongside diagnosis and prescribing (by NPs, hepatologists, or physicians). Such coordination may help patients establish an expectation towards treatment milestones, avoid unnecessary delays to receive HCV treatment, and therefore promote patient-centred care.

Interestingly, the roles of NPs and nurses are perceived as interchangeable in some instances. In one Australian study, NPs and nurses assumed the same responsibilities including patient coordination and follow-up.[22] By contrast, in the other two studies, nurses shared the authority with physicians (or hepatologists) in pre-assessing the severity of HCV and thus indirectly acting as 'NPs' authorised to diagnose.[25,27] These results may suggest that in practice, the distinction between the two roles of NPs and nurses remains unclear, a finding which is supported by a Dutch study investigating NPs' perceptions of health leadership.[38] Future research should explore how to best implement and optimise the roles of NPs in HCV telehealth care.

4.3 Nurse: HCV telehealth care delivery model

This review found that nurses adequately implemented their nursing skills in HCV telehealth care. A broad practical three-step nurse-related model in HCV telehealth care was summarised by the authors, including nurse-led patient coordination (via phone calls or/and face-to-face visits), telehealth-based diagnosis and prescribing (by physicians, hepatologists, or specialists), and nurse-led follow-up services after treatment commencement (via phone calls or/and face-to-face visits).

4.4 Health education and health promotion

Although important in HCV management, health education and health promotion across all 16 studies was not reported. Research suggests that three types of HCV health promotion interventions have very good outcomes, comprising primary prevention (e.g. reducing the number of new injection drug users), secondary prevention (e.g. reducing the frequency of sharing injecting equipment, preventing HCV relapse), and tertiary prevention (e.g. HCV treatment).[39] Health education and health promotion should therefore be incorporated into the future delivery of HCV telehealth care.

4.5 Qualitative methodologies and theoretical development

Across the 16 studies reviewed, predominately used were quantitative methodologies with a focus on evaluating the outcomes of HCV treatments. Qualitative methodologies, however, were largely missed. In HCV telehealth care, many questions remain unanswered, such as patient experiences (e.g. unmet patient needs), anticipated and unanticipated consequences resulting from implementing HCV telehealth care, as well as the quality and satisfaction of telehealth services provided by NPs and nurses. Moreover, albeit with good health outcomes, none of the reviewed 16 studies reported applying any theories to inform the delivery process of HCV telehealth care. Future research is required to employ qualitative methodologies to conduct process evaluations among multiple stakeholders (e.g. NPs, nurses, administrative staff) in HCV telehealth care. Future research is also required to incorporate theoretical development into the delivery of HCV telehealth care to optimise patient outcomes.

5. Strengths and weaknesses

To our knowledge, this is the first literature review investigating the roles of NPs and nurses in the context of HCV management using telehealth. Multiple databases were searched using structured search strings. This review, however, only included studies published in English, potentially excluding relevant studies in other languages. Unpublished studies may possibly be omitted. There were gaps in the reporting of NP and nurse roles in that most studies had inadequate descriptions of such roles and did not evaluate their effects.

6. Conclusions

This review has found that the evidence regarding NP roles in HCV telehealth care is inadequate with their roles being limited in practice to some extent. However, there is relatively adequate evidence discussing the roles of nurses in HCV telehealth care, with their roles mainly involving patient coordination and follow-up. These findings suggest that in HCV telehealth care, the implementation of NP roles appears to be lacking but the implementation of nurse roles is relatively adequate. This review found a complementarity and interchangeability between the roles of NPs and nurses in some cases, suggesting that the distinction between the two in HCV telehealth care remains unclear. Future research should explore more comprehensively how to best deliver NP-led HCV telehealth care. Future research should also investigate how to best incorporate health education and health promotion and theoretical development into the delivery of HCV telehealth care, with an emphasis on employing qualitative methodologies.

Conflict of interest:

The authors declare that they have no conflict of interests.

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Ethical considerations:

Ethics approval is not required given that this research is a scoping review.

Author Contributions:

The first author completed this review with the guidance of the other two co-authors.

Patient Consent:

Not applicable.

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Table 1: 18 databases used for identification.

Academic Search Elite	Current Contents Connect	AMED - The Allied and Complementary Medicine Database	Web of Science Core Collection	GreenFILE	APA PsycInfo
PubMed	Regional Business News	KCI-Korean Journal Database	SciELO Citation Index	Biological Abstracts	CINAHL with Full Text
SPORTDiscus	Russian Science Citation Index	Education Source	Library, Information Science & Technology Abstracts	Business Source Elite	MEDLINE

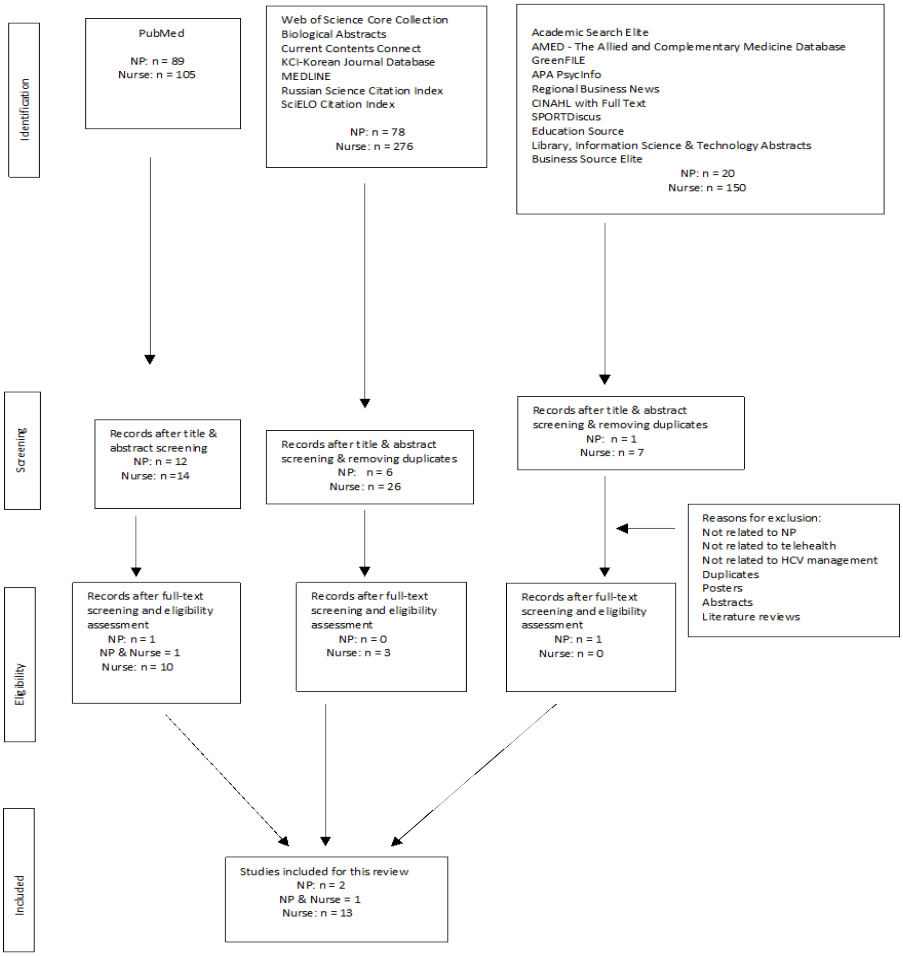

Figure 1. Study selection process adapted by the PRISMA flow diagram.

Figure 1. Study selection process adapted by the PRISMA flow diagram.

Table 2: Study characteristics of the included studies.

Author, Country/region, Year of publication	Study design/method, Target HCV group	Study aim	Main outcome measured	Main Findings
NPs				
Nazareth et al. 2013 Australia	2-group comparative effectiveness study (telehealth clinics vs face-to-face clinics) Rural and remote patients with HCV	To assess the feasibility of telehealth health care	Treatment outcomes: HCV RNA at baseline, weeks 4, 12, 24, 48 during treatment, 24 weeks after the cessation of therapy Satisfaction: a questionnaire to assess patient experience with telehealth	Most patients were happy with telehealth services. Telehealth was effective in HCV treatment in rural and remote areas.
Ahern et al. 2004 USA	2-group comparative effectiveness study (NPs vs physicians) Patients with acute or chronic HCV	To assess the quality of life and treatment outcomes from health care services by a hepatology NP or a physician	Perceived quality of life: a SF-36 Health Survey quarterly Treatment outcome: SVR	NPs provided effective health care services for patients with HCV.
NPs and Nurses				
Neuhaus et al. 2018 Australia	Semi-structured qualitative interviews Prisoners with HCV from correctional facilities	To evaluate the effectiveness of a telementoring service upskilling doctors and NPs	Perceived clinical effectiveness and organisational impacts	Telementoring was effective to upskill health professionals to increase capacity to treat HCV.
Nurses				
Papaluca et al. 2019 Australia	Prospective cohort analysis over time Prisoners with chronic HCV	To assess the effectiveness of a nurse-led model of health care	HCV RNA tested at baseline, at the end of treatment, week 12 post treatment (SVR12)	A decentralized, nurse-led health care model was effective in reaching prisoners to receive HCV treatment.
Sherbuk et al. 2020 USA	Prospective cohort analysis over time Patients with HCV	To assess the effectiveness of a telehealth model	Proportion of referred patients, attendance, completion of treatment, cure rates	This model was effective to treat HCV.
Rodrigues et al. 2021 Australia	Prospective cohort analysis Patients with HCV	To assess the effectiveness of a clinical nurse consultant-led regional telehealth model	HCV diagnosis, treatment details, clinical outcomes, comorbidities, cost saving calculations	This model improved the accessibility of HCV treatment.
Monllor-Nunell et al. 2017 Country not reported	Post test only Patients with HCV	To evaluate the effectiveness of nurse telephone consultation	Attendance of telephone consultation, patient satisfaction, medication adherence	A nurse telephone consultation one week after HCV treatment commencement was effective to follow up with medication adherence and resolve patient concerns.
Yang et al. 2021 USA	Retrospective chart review Patients with HCV	To investigate the impact of the role of a nurse care coordinator in a pharmacy-based collaborative team	Proportion of patients reengaged, intervention adherence and success, cure rates	The nurse care coordinator successfully reengaged patients (previously lost to follow up) to receive health care services.
Lobo et al. 2015 Australia	Key informant qualitative interviews and a short questionnaire Patients with HCV	To evaluate the effectiveness of a regional nurse-supported HCV shared care program	Access to treatment, treatment adherence, patient satisfaction	Hepatitis nurses effectively coordinated HCV treatment and care under the support of treatment protocols, physicians, liver specialists, and telehealth.

Lloyd et al. 2013 Australia	Prospective evaluation with qualitative and quantitative methods Inmates with chronic HCV from correctional centres	To evaluate the effectiveness and safety of a nurse-led health care model	Qualitative: knowledge of, and attitudes towards HCV treatment and service Quantitative: enrolment, diagnostic completion, treatment initiation, posttreatment follow-up, cure rates, adverse events	This nurse-led and specialist-supported model showed promise to increase assessment and treatment uptake.
Keogh et al. 2016 Australia	Retrospective audit Regional and rural patients with HCV	To compare the effectiveness of two models	attendance, efficiency and quality of health care, satisfaction	Nurses effectively conducted primary assessments and increased the accessibility and engagement of HCV treatment.
Chen et al. 2014 Taiwan	2-group comparative effectiveness study Patients with HCV	To investigate the effectiveness of telecare for HCV treatment	Cure rates, side effects, patient compliance, dropout cases, program costs	A telecare model via a healthcare communication centre effectively improved the accessibility of HCV treatment.
Yoo et al. 2017 USA	Retrospective analysis Patients with HCV from remote outreach clinics	To assess the effectiveness of e-health treatment model	Treatment uptake, effectiveness of communication, accessibility and capacity of outreach clinics	E-health effectively improved the accessibility and capacity of outreach clinics.
Li et al. 2020 Taiwan	Descriptive and prospective study design Rural patients with HCV	To evaluate the implementation process of transferring potential patients with HCV to assessment and treatment	Facilitators of, and barriers to transferring potential patients with HCV to assessment and treatment	An interdisciplinary collaborative approach effectively improved the engagement and acceptance of HCV assessment and treatment.
Falade-Nwulia et al. 2017 USA	Prospective, observational cohort studies Patients with coinfected HIV & HCV	To evaluate the effectiveness and safety of HCV treatment	Cure rates	HCV treatment was effective among patients with HIV using a nurse- and pharmacist-based support program.
Wu et al. 2018 Taiwan	A quasi-experimental pre-post-test design Patients with HCV	To evaluate the effectiveness of oral hygiene programme and home phone counselling	oral health behaviour, oral health status, completion rate of HCV treatment	Oral hygiene programme effectively improved the oral health status of patients with HCV and increased the completion rate of HCV treatment.

Appendices (search strategies for the selected databases)

PubMed

All fields:
(telehealth OR telemedicine OR teleconsultation OR tele* OR video* OR Internet OR ehealth OR mhealth OR ecare OR e-care OR web OR online*) AND (nurse practitioner OR nurse practitioners OR nurse practitioner* OR NP OR advanced practice nurs* OR advanced practice registered nurs* OR advanced nurse practitioner*) AND (HCV OR "hepatitis C" OR hepa* OR DAA OR direct acting antiviral OR direct-acting antiviral)

(telehealth[Title/Abstract] OR telemedicine[Title/Abstract] OR teleconsultation[Title/Abstract] OR tele*[Title/Abstract] OR video*[Title/Abstract] OR Internet[Title/Abstract] OR ehealth[Title/Abstract] OR mhealth[Title/Abstract] OR ecare[Title/Abstract] OR e-care[Title/Abstract] OR web[Title/Abstract] OR online*[Title/Abstract]) AND (RN[Title/Abstract] OR nurse[Title/Abstract] OR nurses[Title/Abstract] OR nurse*[Title/Abstract]) AND (HCV[Title/Abstract] OR "hepatitis C"[Title/Abstract] OR hepa*[Title/Abstract] OR DAA[Title/Abstract] OR direct acting antiviral[Title/Abstract] OR direct-acting antiviral[Title/Abstract])

Web of Science Core Collection
Biological Abstracts
Current Contents Connect
KCI-Korean Journal Database
MEDLINE
Russian Science Citation Index
SciELO Citation Index

Topic:
(telehealth OR telemedicine OR teleconsultation OR tele* OR video* OR Internet OR ehealth OR mhealth OR ecare OR e-care OR web OR online*) AND (nurse practitioner OR nurse practitioners OR nurse practitioner* OR NP OR advanced practice nurs* OR advanced practice registered nurs* OR advanced nurse practitioner*) AND (HCV OR "hepatitis C" OR hepa* OR DAA OR direct acting antiviral OR direct-acting antiviral)

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Academic Search Elite
AMED - The Allied and Complementary Medicine Database
GreenFILE
APA PsycInfo
Regional Business News
CINAHL with Full Text
SPORTDiscus
Education Source
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AB Abstract:
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