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Review Article

Video-Based Communication on Loneliness among Verbally Responsive ICU Patients: A Scoping Review

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Abstract

Background: Video-based communication has become an essential bridge in overcoming social isolation post-COVID-19 pandemic, particularly in healthcare settings, by facilitating meaningful social interactions for ICU patients, who often feel lonely due to restricted direct interactions with their families. **Purpose:** The review aims to explore the effectiveness of video-based communication in reducing loneliness and to identify key areas for future research. **Methods:** The study followed the PRISMA-ScR approach to search for relevant articles in databases such as CINAHL, PubMed, and Scopus. The eligibility criteria included full-text articles in English, qualitative and quantitative designs, and a publication range of 2019-2024. **Result:** The initial search yielded 202 articles, which were narrowed down to 12 articles for further qualitative analysis. The selected studies highlighted the role of video-based communication in reducing loneliness among ICU patients, emphasizing both structured and unstructured communication methods. **Discuss:** The review provides valuable insights into the use of technology to address loneliness and its implications for healthcare practices, particularly in the context of physical restrictions and the search for solutions amid the COVID-19 pandemic. The study's findings have implications for improving the emotional well-being of isolated patients and their families, especially during times of restricted physical interactions.

Keywords: *ICU; Loneliness; Video-based Communication; Video Calls; Verbally Responsive*

Introduction

Video-based communication has become an important bridge in overcoming social isolation following the COVID-19 pandemic (Krewulak *et al*., 2022). The main idea behind the use of this technology is to facilitate meaningful social interactions for isolated individuals, especially in the context of health (Ross, Cagino & Denefrio, 2024). The psychological impacts of loneliness, including depression, anxiety, and decreased physical health, highlight the need for effective communicative solutions (Sacco *et al*., 2020). Patients who experience isolation, especially those in the Intensive Care Unit (ICU), often feel lonely due to restrictions on direct interaction with their family and friends.

Loneliness in the ICU is one of the most serious challenges faced by patients during intensive care (Krewulak *et al*., 2022; Torun, Bulmuş & Bilgin, 2023). ICU patients often experience deep feelings of loneliness due to physical isolation and lack of social interaction (Piras *et al*., 2022). Lack of interaction with family and friends, who are usually the main source of emotional support, further exacerbates these feelings of isolation. Many patients have difficulty communicating effectively because of their medical conditions, such as restrictions on visitors or the fact that ICU patients cannot be waited on by their families (Bartoli *et al*., 2021). Qualitative research conducted by Krewulak *et al*. (2022) and Torun, Bulmuş & Bilgin (2023) states that "I feel like I live in a bubble separated from the outside world" and

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"this feeling of loneliness is worse than the physical pain I experience." This experience shows how important interventions are to help reduce feelings of loneliness and improve the emotional well-being of patients in the ICU. The inability to express their needs and emotions adds to the psychological burden, deepening feelings of loneliness and isolation.

Patients in the ICU consist of individuals with varying levels of consciousness and serious medical conditions (Klop *et al*., 2021; Thombs *et al*., 2020). ICU patients can experience a variety of critical conditions, ranging from worsening chronic illnesses to traumatic injuries that require immediate treatment. Among these patients, there are groups who remain conscious and are able to provide verbal responses (Kürtüncü *et al*., 2023; Rose *et al*., 2021). The condition of verbally responsive patients is very important as it allows them to communicate directly with medical personnel and their families.

Patients who are conscious and able to respond verbally have the ability to express their needs, discomfort, and feelings, which is very important in providing more accurate treatment adjustments (Torun, Bulmuş & Bilgin, 2023). Even though they are able to communicate verbally, responsive ICU patients remain vulnerable to feelings of loneliness and isolation due to restrictions on direct interactions with their family and friends (Özdemir *et al*., 2023; Piras *et al*., 2022). Through video-based communication, patients can see and talk to those closest to them, providing much-needed emotional support during the recovery period (Donas-Boto *et al*., 2021; Sanfilippo *et al*., 2022).

Video-based communication facilitates virtual meetings that can replace, in part, lost social interactions. This is invaluable, especially when patients and families are located long distances apart (Broadhurst & Parker, 2019). Thus, the use of video-based communication becomes an important tool in overcoming the challenges of isolation, connecting patients with family and friends, and supporting their mental health.

Several studies have shown that video-based communication can significantly reduce feelings of loneliness by strengthening social and emotional bonds (Mistraletti *et al*., 2020; Ross, Cagino & Denefrio, 2024; Tsai *et al*., 2020). This is reinforced by studies comparing the effects of video interactions with non-visual communications, such as voice calls or text messages, showing that visual elements play an important role in building emotional connectivity (Klop *et al*., 2021). However, there is a lack of literature that explicitly evaluates how various aspects of video-based communication contribute to reducing loneliness. This shows that there is a gap regarding the specific elements that are most effective in reducing loneliness using video call technology. A scoping review focused on video-based communication and loneliness could help identify key areas for future research, ensuring that the use of this technology is optimised for maximum benefit.

Previous scoping reviews have shown that video calls are a means of communication to reduce loneliness in hospital patients. One article highlights that there are patients in the intensive care unit (ICU) (Wanderås *et al*., 2023). However, there is no review that discusses video calls for communication between patients in the ICU and their families. ICU patients may feel lonely due to the lack of direct communication between patients and families (Eggmann *et al*., 2020). This scoping review is the first to provide an overview for hospitals in creating programs to reduce loneliness in ICU patients.

Delving deeper into the existing literature and exploring the potential of video-based communication technologies, we can broaden our understanding of how best to address loneliness. This approach will not only enrich the quality of life of lonely patients but may also provide valuable insights for the future development of communicative solutions. Through this scoping review, we can build a stronger foundation of knowledge about the effectiveness of video-based communication in reducing loneliness, providing clear directions for future research and practice. This research is important to ensure that video-based communication technologies are optimized to support the emotional and social needs of patients, particularly those in critical care settings such as Intensive Care Units (ICU).

Although existing research shows the effectiveness of video communication in reducing loneliness in Intensive Care patients, there is a lack of studies that specifically assess specific factors in video-based communication being effective in treating loneliness. This gap underscores the lack of understanding

of call duration and communication strategies towards reducing loneliness. Also, the limited research that directly compares the impact of communication strategies in video-based communication in the ICU environment suggests the need for further research to determine the most effective communication methods using this technology.

Methodology

Design

The design used in this research is a scoping review. This scoping review used a framework from the Arksey and O'Malley Framework. This design has a more comprehensive conceptual reach so that it can explain various relevant research results. The scoping review framework consists of 5 core stages, namely identifying review questions, identifying relevant research results, selecting studies, mapping data, compiling, summarizing and reporting results (Peterson *et al.,* 2017). The *PRISMA Extension for Scoping Reviews* (PRISMA-ScR) was used in this literature review to find video-*based communication on loneliness in intensive rooms.*

Eligibility Criteria

The process of selecting articles for this review was carried out based on PRISMA-ScR(Page *et al.,* 2021). Research questions and eligibility criteria for research articles use the PICO (*Population, Intervention, Comparison, Outcome) approach*

P (Population) : Patient Intensive Care Unit with Verbally Responsive
I (Intervention) : Video-based Communication
C (Comparison) : Not described
O (Outcome) : Loneliness

In this review, full-text articles that were inaccessible, not in English, or secondary research were excluded. The inclusion criteria for this review were full-text articles that can be accessed and published in English, articles with qualitative and quantitative designs, samples consisting of patients treated in intensive care with verbally responsive conditions, and articles published within a 5-year period (2019-2024) to obtain the latest types of interventions that can be implemented according to current conditions. The exclusion criteria for this study were patients who were unconscious and unable to respond verbally, grey literature, and articles consisting of only abstracts.

Data Collection and Analysis

Search Strategy

The database used by the authors to search for articles consists of three databases, namely: CINAHL, PubMed, and Scopus. These databases were used by the authors because they are large databases and can provide a variety of health articles. The keywords used in PUBMED are: “Videoconferencing” [MeSH Terms] OR “Videoconference” [Text Word] OR “video conferencing” [Text Word] OR “video conference” [Text Word] OR “video communication” [Text Word] OR (video-based communication)) OR “video calls” [Text Word] AND “loneliness”[MeSH Terms] OR Loneliness[Text Word] OR Isolation[Text Word] AND “Patient” [MeSH Terms] OR “Patients” [Text Word] OR “Client” [Text Word] OR “Clients” [Text Word] AND “intensive care units”[MeSH Terms] OR Intensive Care Unit[Text Word]. Keywords in Scopus are: ALL (videoconferencing OR videoconference OR video AND conferencing OR video AND conference OR video AND communication OR video-based AND communication OR video AND calls), ALL (loneliness OR loneliness OR isolation), ALL (patient OR patients OR client OR clients), ALL (intensive AND care AND unit OR icu OR unit, AND intensive AND care OR icu AND intensive AND care AND units). The keywords used in CINAHL are: Video Conferencing OR videoconferencing OR Video Conference OR videoconference OR video communication OR video-based communication OR video calls AND loneliness OR loneliness OR isolation AND patient OR patients OR client OR clients AND intensive care unit OR ICU OR critical care OR critical care unit. The question in this review is how does *Video-based Communication on Loneliness Among Patient in Intensive Care Unit*?

Study Selection and Quality Appraisal

Researchers select studies that fit the eligibility criteria first. To avoid duplication at the initial selection stage, researchers used Mendeley as a reference manager. Next, researchers checked the title, abstract and *full text* to ensure their relevance to the research topic and applied inclusion and exclusion criteria. In the final stage, an in-depth evaluation was carried out on each text using a checklist from the Joanna Briggs Institute (Joanna Briggs Institute (JBI), 2022). Researchers used several *appraisal checklists* including *Cross-sectional, Expert Opinion, Qualitative Research* and *Quasy-Experimental*. Answer options for each question include yes, no, not applicable and unclear. Journals will be removed if they receive a JBI score below 75%.

Result

Study Selection

In the initial stage of the search, a total of 202 articles were found from three different data sources, including PubMed (49 articles), Scopus (17 articles), and CINAHL Medline Ultimate (136 articles). Articles were eliminated based on the inclusion criteria, with 100 articles excluded. The duplicate elimination process reduced 13 articles. Furthermore, 61 articles did not meet the initial criteria based on title and abstract, leaving only 28 articles. The subsequent selection process involved further assessment of the articles' suitability to the inclusion criteria and critical evaluation using the JBI assessment tool, which resulted in the reduction of a further 16 articles. Finally, 12 articles were selected for further qualitative analysis (*See Figure 1*).

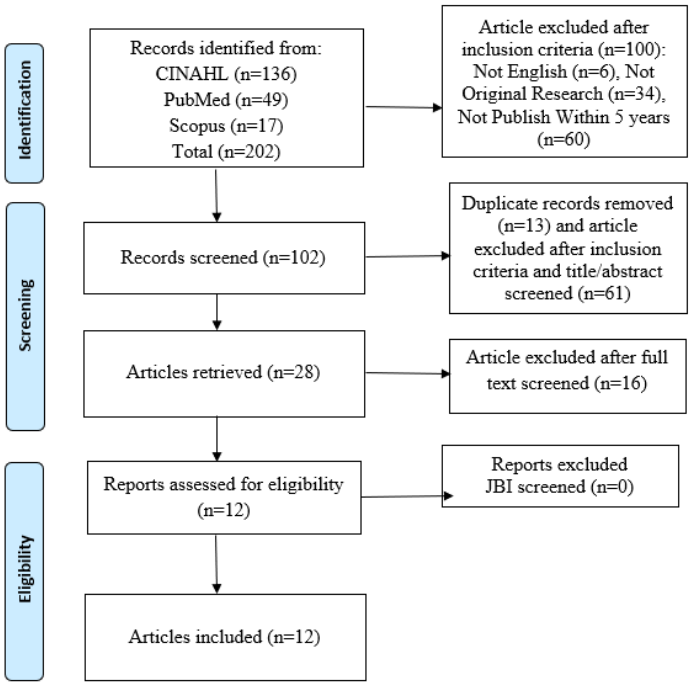

Figure 1: *Prisma Flow Diagram*

Loneliness

Loneliness in the ICU context is a serious challenge that can affect patients and families emotionally and psychologically (Krewulak *et al*., 2022). Loneliness often appears on the first to fourth day (Özdemir *et al*., 2023). On the first day, the patient has high expectations and mental adjustments to the emergency (Çınar & Eti Aslan, 2017; Donas-Boto *et al*., 2021). On the third day, feelings of loneliness emerge, especially due to the lack of direct contact with family and friends (Krewulak *et al*., 2022; Özdemir *et al*., 2023). By the fifth day, loneliness increases, and psychological stress rises due to minimal interactions and activities (Bartoli *et al*., 2021). On the seventh day, ICU patients experience more severe loneliness and isolation (Mistraletti *et al*., 2020).

There are several factors that can cause loneliness in the ICU, including a complex and isolated environment. A technologically complex and isolated ICU environment can create feelings of loneliness because patients are separated from their familiar surroundings and cannot communicate freely (Donas-Boto *et al*., 2021). Poor quality relationships, communication barriers, and limited social interactions in the ICU environment can lead to poor quality relationships between patients, families, and healthcare workers (Ashana & Cox, 2021).

Intense emotional experiences, patients experience intense emotions including boredom, longing, and deep feelings of loneliness (Bartoli *et al*., 2021; Özdemir *et al*., 2023). With no family members at the bedside, the inability of the family to accompany the patient due to ICU access restrictions can increase feelings of loneliness and anxiety (Klop *et al*., 2021; Rose *et al*., 2021). Uncertainty regarding a patient's health status can create anxiety, which can increase levels of loneliness and stress.

Limited access to the ICU, where access constraints imposed can separate patients from the social support they usually receive from family and those closest to them (Bartoli *et al*., 2021). Apart from that, the COVID-19 pandemic has led to the implementation of visitor restrictions in the ICU to reduce the spread of viruses (Özdemir *et al*., 2023).

The impact of loneliness in the ICU is not only limited to psychological aspects but also extends to the dimensions of physical health and overall patient well-being (Krewulak *et al*., 2022). Increased anxiety, depression, and prolonged sadness are direct manifestations of loneliness in the ICU environment (Mistraletti *et al*., 2020; Sanfilippo *et al*., 2022). A further consequence of this influence on healing can be a serious obstacle to the patient's recovery process. High levels of anxiety and lack of social support can slow a patient's physical recovery (Klop *et al*., 2021), affect the body's response to medical treatment, and increase the risk of complications (Bartoli *et al*., 2021). Psychological well-being, loneliness plays a crucial role in reducing the psychological well-being of patients. Prolonged experiences of loneliness can undermine peace of mind, reduce motivation to participate in treatment, and create a mental environment that is not conducive to recovery (Rose *et al*., 2021).

Furthermore, the ability to provide care information, loneliness can affect the patient's ability to convey consistent and accurate information regarding their health condition (Krewulak *et al*., 2022). Decreased quality of life, patients who experience loneliness in the ICU experience a decline in overall quality of life (Sanfilippo *et al*., 2022). Disrupted self-understanding, anxiety, and feelings of disconnection from social support can create an environment that is not supportive of holistic recovery (Özdemir *et al*., 2023). Addressing loneliness in the ICU is not only important for treating the physical aspects, but is also essential for ensuring the patient's emotional and psychological well-being. ICU care that is holistic and focuses on the patient's emotional needs can be an important step in improving patient motivation, engagement, and quality of life during and after intensive care.

Video-based Communication

Video-based communication is a technological method that allows individuals to interact with each other through real-time video and audio transmission (Sanfilippo *et al*., 2022). This communication can be facilitated via computers, smartphones, and special video conferencing equipment (Rose *et al*., 2021). The main benefits include an increased sense of presence and connection between patients and families, increased clarity and understanding through videos, and a more engaging and interactive experience compared to text-based communication (Sasangohar *et al*., 2021). This is especially important in situations where face-to-face interaction is limited, such as access to intensive care or during the COVID-19 pandemic, which allows continued social contact from a distance. From several articles, there are several mentions of video-based communication, including virtual visiting (Rose *et al*., 2021), telecritical care, video calls (Donas-Boto *et al*., 2021; Mistraletti *et al*., 2020; Ross, Cagino & Denefrio, 2024; Sanfilippo *et al*., 2022), family support teams (FST) (Klop *et al*., 2021), and videoconferencing (Krewulak *et al*., 2022).

The emergence of video-based communication technologies has become fundamental in addressing the challenges of loneliness and isolation, especially where face-to-face interactions are limited. The articles selected from 12 studies provide information about various research related to the use of

technology, especially video-based communication in health services, and explore the impact of video-based communication on loneliness. Some recommend a maximum of 20 minutes per session, with one visit per day and up to seven visits per week (Watanabe *et al*., 2023), while others mention 30 minutes for video-based communication between family and patient to reduce feelings of loneliness (Krewulak *et al*., 2022; Sanfilippo *et al*., 2022; Sasangohar *et al*., 2021). Seven articles do not specifically mention the duration of video-based communication (Ashana & Cox, 2021; Bartoli *et al*., 2021; Donas-Boto *et al*., 2021; Klop *et al*., 2021).

This Scoping Review outlines the use of virtual visits with video-based communication for feelings of loneliness, especially in ICU patients, throughout the article emphasizing the importance of clear communication, emotional support and maintaining human relationships through video-based communication in health services, especially in the ward. intensive.

Structured Communication

Structured communication, characterised by predetermined times, topics, or scripts, plays an important role in formal settings. In the context of reducing feelings of loneliness, structured video calls can ensure the exchange of important information is carried out efficiently and can create a sense of normalcy and routine. Researchers found several video-based communication articles aimed at reducing feelings of loneliness using structured communication (n=2) by providing mandatory questions to ask patients. These questions include patient welfare (Rose *et al*., 2021), information about treatment, and concerns that the patient or family may have (Klop *et al*., 2021). In qualitative research (n=2), it is important to ask patients questions about their current condition, well-being (Krewulak *et al*., 2022), comfort level, treatment progress, and any concerns or questions they may have regarding their treatment (Cook *et al*., 2021). Additionally, treatment plans can increase engagement and improve patient well-being towards their care.

Unstructured Communication

Unstructured communication (n=4) in this context refers to interactions that are not regulated by mandatory questions. Instead, communication can freely adapt to the needs, emotions, and topics most relevant to the patient and their family at that time (Sasangohar *et al*., 2021). This flexibility is very important in health services, especially in addressing psychological well-being, including patient loneliness and emotional well-being, and in maintaining connectedness despite obstacles such as visiting restrictions (Donas-Boto *et al*., 2021). This unstructured communication allows for a more natural flow of conversation, helping to recreate a sense of personal connectedness that is often lost when physical visits are not possible, thereby helping to reduce feelings of loneliness and isolation among patients (Watanabe *et al*., 2023). This unstructured communication format is very effective in informal settings. Video-based communication with unstructured communication means participants can freely express emotions and share personal stories (Mistraletti *et al*., 2020). This unstructured communication is more effective in reducing feelings of loneliness because it fulfils human needs for social relationships and genuine emotional support.

Although both structured and unstructured communication have benefits in addressing loneliness via video-based platforms, the choice between the two often depends on the context and needs of the participants. Structured communication provides clarity and efficiency, which is important for formal interactions and when discussing specific topics. On the other hand, unstructured communication offers the warmth and personal touch necessary for social bonding and emotional well-being. Blending these approaches can sometimes offer the best of both worlds, enabling effective communication that also fosters relationships.

***Table 1**: Data Extraction*

No	Outcome	Country	Design	Sample	Intervention	Description	Result	Authors, Year
1.	To facilitate communication between families, patients and ICU teams by using virtual visiting	United Kingdom	Cross-sectional study	117 hospitals	Virtual Visiting using self-managed electronic surveys	The research did not specifically mention the duration of video calls in the context of virtual visiting. Structured communication was carried out twice a day and included questions about the patient's well-being, treatment updates, and addressing any concerns or questions the patient or their family may have	Virtual Visiting can reduce the psychological pressure of patients, one of which is loneliness	Rose *et al.,* 2021
2.	The use of telecritical care elicits gratitude, happiness, joy, and relief as well as a sense of closeness	USA	Mixed-Methode	230 Family members.	Telecritical Care (Video Call)	In this study, virtual visiting was carried out for 30 minutes, communication was carried out in an unstructured manner.	Telecritical using Video-based Communication was able to show more 86% positive sentiment	Sasangohar *et al.,* 2021
3.	Using video communication can reduce the negative impact on anxiety, depression, loneliness and PTSD	Italy	Prospective study	20 caregivers, and 17 patients (11 with COVID-19, 6 Non-COVID-19)	Video-Calls	The duration of a video call can vary depending on the purpose of the call, the number of participants, and the complexity of the discussion. Video calls can range from a few minutes for a quick check-in or update to longer sessions that may last 30 minutes to an hour or more for in-depth discussions or meetings. Ultimately, the length of a video call is determined by the needs and objectives of the participants involved.	This study is a pilot for implementing ICU video calls between patients, families and caregivers. From the initial results did not experience a decrease in depression, PTSD or anxiety.	Sanfilippo *et al.,* 2022
4.	The research evaluates the experiences of relatives of COVID-19 patients in ICUs with Family Support Teams (FSTs) during the pandemic. It highlights the importance of clear communication, emotional support, predictability, and aftercare.	Netherlands	Semi-structured interview design	21 interviews were conducted with relatives of patients admitted to ICUs	Family Support Team (FST) with Video Calls	In this study, video calls were made every day with structured communication, carried out twice a day, including questions: The patient's medical status, treatment updates, and answering any questions or problems relatives had. The study does not specify the exact duration of each video call session.	Family Support Team (FST) has positive outcomes for families. FST pays attention to patient welfare and daily communication. FST can meet family information needs and be the main contact for patients.	Klop *et al.,* 2021

5.	To investigate the relationship between pandemic-related stressors, mental health, and technology use among parents of hospitalised infants during the COVID-19 pandemic.	USA	*Cross-Sectional Study*	47 Participants	Text, Video-chatting, Video Call	The duration of the video call and specific materials or questions asked during the call were not provided in the text. The study did not specify the exact duration of the video call periods used to reduce loneliness.	Technology use was positively associated with mental health scores in patients.	Ross *et al.,* 2024
6.	This research examined the potential impact of family-initiated video calls in alleviating symptoms of delirium, reducing risky behaviours, and improving patients' understanding of instructions.	Japan	*Observational Study*	532 patients	Video Calls using Skype	This research was conducted for three weeks, with 3 video call sessions for a maximum of 20 minutes, using unstructured communication. This research shows a video call period with one visit per day and a maximum of seven visits per week.	This study found that video calls by families as an alternative to in-person visits can reduce patient risk behaviour (loneliness) and improve understanding of instructions during the COVID-19 pandemic in an acute care hospital.	Watanabe *et al.,* 2023
7	This report seeks to outline various practices employed in utilising video calls to facilitate communication between COVID-19 patients and their family members or loved ones.	Portugal	*Semi-structured interview design*	A convenience sample	Video Call Communication	Video-based communication is carried out only 1x a day in the afternoon using unstructured communication	The effect of video calls can help reduce feelings of loneliness and worry, especially in the Intensive Care Unit (ICU), almost all respondents provide a better understanding of the patient's illness and condition to the family.	Donas-Boto *et al.,* 2021
8	The Study highlights the importance of innovation for family-cantered care using Video-based Communication	US	*Expert Opinion*	-	Video-based Communication	This Expert Opinion explains the importance of communication and relationships between patients and families, by maximising emotional support and loneliness during communication	In this opinion, virtual communication between patients, families and caregivers is very important to reduce feelings of isolation and loneliness in order to maintain human connections	Ashana & Cox, 2021

9	This study emphasises the importance of addressing the emotional needs of family members with patients in the ICU in the process of care. Video-based communication is a solution to this problem	Italy	*A Phenomenology Study*	*A convenience sample technique, 14 responders*	-	-	The study shows the negative impact of loneliness, emphasising the emotional impact of visitation restrictions and how clinicians and families deal with the experience	Bartoli *et al.,* 2021
10	The study resulted in strategies to improve communication, arrange virtual visits with families, provide education and family support.	Canada	*A Qualitative Interview Study*	*41 Participant*	Videoconferencing	The duration of videoconferencing varied depending on the stakeholder involved. Patients and families typically engaged in videoconferencing for approximately 1 hour, while physicians and registered nurses participated for 30-45 minutes. When communicating with patients via videoconferencing, it is essential to inquire about their well-being, comfort levels, treatment progress, and any concerns or questions they may have regarding their care. Additionally, discussing treatment plans, prognosis, and involving patients in decision-making processes can enhance patient engagement and satisfaction with their care.	This research states that Video-based Communication (videoconferencing) is a potential solution to maintain patient and family-based care delivery.	Krewulak *et al.,* 2022
11	This research increases the importance of communication, empathy and mental well-being by providing advice through virtual visiting	Italy	Experiment	*46 members*	Video Call	The duration of a video call with a patient and the content to discuss can vary based on the specific circumstances and the patient's condition. It does not specify the exact duration of the video call periods used to alleviate patient loneliness Typically, a video call should be conducted efficiently, focusing on essential clinical information and emotional support for the patient and their family. The call should begin with a clear and calm introduction, ensuring that the person on the other end is in a suitable place for communication. It's important to	Video calls are very effective in reducing loneliness by maintaining connections between patients and families.	Mistraletti *et al.,* 2020

						inquire about the patient's current clinical condition, past medical history, and any specific concerns or questions the patient or their family may have.		
12	This research explains the importance of comprehensive physical and psychosocial care	Turkey	A-Qualitative Research Design	*52 patients*	-	-	The impact of ICU care during COVID-19 with various challenges and the importance of providing comprehensive physical and psychosocial care	Özdemir *et al.,* 2023

Impact of Video-Based Communication

Video-based communication has a significant impact on reducing feelings of loneliness, especially in patients being treated in intensive care. From all the studies (n=12), researchers grouped the impact of video communication as follows: reducing loneliness and isolation (Klop *et al*., 2021; Sanfilippo *et al*., 2022; Sasangohar *et al*., 2021), where video-based communication enables patients to see and talk to those closest to them; improving emotional well-being (Ashana & Cox, 2021; Bartoli *et al*., 2021), as video-based communication provides a stronger sense of presence compared to text or voice-based communication alone, helping to improve the patient's mood, reduce anxiety, and provide a sense of comfort and security; and strengthening social and emotional bonds (Özdemir *et al*., 2023), as video-based communication allows for more emotionally rich interactions by showing facial expressions, body language, and other nuances of non-verbal communication that strengthen social and emotional bonds between patients and families.

In addition, providing access to social support (Donas-Boto *et al*., 2021; Watanabe *et al*., 2023), in situations where face-to-face interaction is very limited, video-based communication offers access to much-needed social support. Helping in recovery (Mistraletti *et al*., 2020; Rose *et al*., 2021), emotional support from family or those closest to the patient can have a positive impact on the patient's recovery. Video-based communication can help patients feel more connected and supported, which can accelerate the recovery process. Increasing the quality of communication (Rose *et al*., 2021), video-based communication offers richer interactions compared to communication via text or voice. The ability to share visually and react in real-time makes communication more effective and satisfying.

Furthermore, reducing the psychological burden (Mistraletti *et al*., 2020; Sanfilippo *et al*., 2022), apart from the patient, the patient's family can see the patient's condition directly, reducing worries and speculation about the patient's health, thus alleviating their psychological burden. Flexibility and accessibility (Rose *et al*., 2021; Ross, Cagino & Denefrio 2024), video-based communication can be carried out using mobile devices, such as smartphones, to enable high flexibility and accessibility for patients and families to communicate at any time and from anywhere. The impact of using video-based communication in the ICU context highlights the importance of this technology in improving the experience of patients and their families during the period of care in the intensive care unit. The utilisation of this technology not only helps reduce feelings of loneliness but also contributes to the emotional and physical recovery of patients.

Discussion

This research is the first review to discuss video-based communication as a means to reduce feelings of loneliness in intensive care patients. ICU patients consist of individuals with varying levels of consciousness and serious medical conditions (Klop *et al*., 2021). Among these patients, there are groups who remain conscious and are able to provide verbal responses (Rose *et al*., 2021). The ability to express needs, discomfort, and feelings is an important aspect of the care of ICU patients who are conscious and able to respond verbally (Özdemir *et al*., 2023; Piras *et al*., 2022). Even though they are able to communicate verbally, responsive ICU patients remain vulnerable to feelings of loneliness and social isolation.

As society continues to face the challenges of physical distancing and seek solutions to loneliness, video-based communication has become an important tool for facilitating long-distance communication (Donas-Boto *et al*., 2021). Loneliness in the ICU is recognised as a serious challenge that affects patients and families emotionally and psychologically (Mistraletti *et al*., 2020). The isolated ICU environment, as well as restrictions on direct interactions with family or those closest to them (Bartoli *et al*., 2021; Özdemir *et al*., 2023), reinforces deep feelings of loneliness in patients. This loneliness not only has a negative impact on the patient's mental health but can also slow down the physical recovery process (Mierzwicki *et al*., 2024).

Video-based communication was found to be effective in reducing loneliness in intensive care settings (Mistraletti *et al*., 2020). The results of the scoping review show that all articles come from developed countries. This research also shows that all articles are effective in reducing feelings of loneliness in ICU patients. Video-based communication focuses on communication between patients and their family or those closest to them by carrying out virtual visiting, which focuses on the patient's psychological and emotional well-being (Tsai *et al*., 2020). In the articles obtained regarding the role of video-based communication in reducing loneliness, especially in intensive care patients, we can explore and examine the nuances of communication that can be facilitated through video calls with the aim of understanding its effectiveness in reducing feelings of loneliness. This communication can be carried out through structured or unstructured communication. Structured communication, usually characterised by scheduled calls and integrated conversations (Klop *et al*., 2021), can provide patients with a feeling of routine and anticipation. This regularity can significantly reduce feelings of loneliness by ensuring consistent contact with the outside world, thereby offering the patient something to look forward to (In de Braekt *et al*., 2024).

In contrast, unstructured communication allows for spontaneous interactions, reflecting the natural dynamics of personal relationships. This kind of flexibility is especially beneficial in intensive care units, where the patient's physical and emotional condition can fluctuate rapidly (Lee, Lee, and Jo, 2024; Tsai *et al*., 2020). Video-based communication with unstructured communication allows family and friends to provide full support (Balcombe and De Leo, 2023), meeting the patient's psychological and emotional needs (Wu, Yao & Yang, 2023). This closeness and personal communication can foster a deeper sense of connectedness and, most importantly, combat loneliness.

Structured and unstructured communication via video-based communication has its own advantages and disadvantages. Structured communication, characterised by scheduled calls and integrated conversations, provides certainty and regularity in interactions. Patients can expect consistent contact with the outside world, significantly reducing feelings of loneliness (Rose *et al*., 2021). This regularity also gives patients a sense of routine and anticipation, which can help maintain psychological well-being. On the other hand, unstructured communication allows for spontaneous interactions and the natural dynamics of personal relationships (Sasangohar *et al*., 2021). Its advantages lie in its ability to provide fuller support from family and friends, meeting the patient's psychological and emotional needs. This flexibility is crucial in intensive care units where patient conditions can fluctuate. Despite providing immediacy and personality in communications, unstructured communications may be less anticipated and less scheduled than structured ones. A comparison between the two shows that structured communication can provide certainty and routine, while unstructured communication is more spontaneous and can meet the patient's emotional and psychological needs more deeply. In the context of reducing loneliness in intensive patients, the use of both forms of communication can be adjusted to the specific needs and conditions of each patient.

Technological advances, one of which is using video-based communication, have played an important role in bridging the emotional and physical gap between patients and families in intensive care units (Kürtüncü *et al*., 2023). Video-based communication can convey messages such as facial expressions, an important element in relationships between individuals (Sanfilippo *et al*., 2022). The impact of this technology can significantly reduce loneliness (Klop *et al*., 2021; Sasangohar *et al*., 2021), including strengthening social and emotional ties (Özdemir *et al*., 2023), increasing emotional well-being (Ashana & Cox, 2021; Bartoli *et al*., 2021), providing access to social support (Donas-Boto *et al*., 2021; Watanabe *et al*., 2023), aiding in recovery (Mistraletti *et al*., 2020; Rose *et al*., 2021), improving the quality of communication, reducing psychological burden (Sanfilippo *et al*., 2022), and offering flexibility and accessibility (Ross, Cagino & Denefrio, 2024). This technology allows patients to feel more connected and supported, which is essential for the recovery of the patient's emotional and physical condition. Video-based communication significantly improves the emotional quality of communication and makes patients feel more connected and less isolated.

Limitation

The limitation of this scoping review is the limited number of studies and no one has done it in Indonesia, because Video-based Communication is widely applied in developed countries, while researchers have not found similar research in developing countries. In addition, the scope of the review is also limited to the three databases used, so it cannot accommodate other databases in this review.

Conclusion

As society continues to face the challenges of physical restrictions and seek solutions to loneliness, video-based communication has become an effective tool for reducing feelings of loneliness, especially for ICU patients who are verbally responsive. Implementing video-based communication strategies, both structured communication and unstructured communication, wisely can increase the effectiveness of this digital interaction. This ensures that individuals not only stay connected but also receive the emotional and social support they need. Video-based communication technology will be key in increasing the capacity for communication which ultimately aims to reduce feelings of loneliness in an increasingly digital world. The implications of this research are using technology to reduce feelings of loneliness because loneliness can worsen physical and mental health. This research also has recommendations for creating guidelines for conducting video-based communication in intensive rooms. Recommendations for future researchers can explore subjective aspects of user experience in using video-based communication, including individual perceptions of communication strategies, user satisfaction, and other factors that can influence the quality of interactions, especially in ICU patients who are verbally responsive.

Conflict of Interest

The authors declare that they have no competing interests.

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