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Review article

Patients' experience of single room isolation in hospitals: an integrative review

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Abstract
Background: Isolation of infectious or immunosuppressed patients is a common intervention in hospitals. Evidence highlights various impacts due to isolation.
Aim: To explore adult inpatients' experience of single room isolation.
Methods: An integrative review was performed. Therefore, a systematic search was conducted in Cochrane, CINAHL, MEDLINE, and GeroLit, as well as an additional handsearch and a reverse search in 2021 and 2023. Screening and data extraction were carried out independently by two reviewers. Synthesis of study results was performed by constant comparison.
Results: Of the 5,975 findings, 20 studies (9 qualitative, 9 quantitative, 2 mixed) containing 58,534 participants were included. Patients' experience depends on various context factors. The studies describe a multifaceted experience of single room isolation. Isolation is perceived as a protection against threats; patients experience peace and privacy but are also confronted with restrictions in relation to mobility and contact. The studies mention that isolation has various psychological and social impacts, as well as effects on the perception of received care. Although often perceived as a heavy burden, the studies highlight the opportunity for self-reflection and to find inner strength.
Discussion: Patients reported a complex, multidimensional, and inconsistent experience. Further research is needed to address differentiated causal relationships between the influencing factors and different experiences.

Keywords: Experience; Hospital; Inpatient; Isolation; Nursing

Introduction

Isolation of patients in hospitals is a common intervention. Due to different underlying reasons, *e.g.*, immunosuppression or infection, various forms of isolation are required. These came back into public, social, and scientific focus due to the Covid-19 pandemic.

Numerous international studies and reviews are available on isolation interventions in acute care hospitals or other settings – including single room, shared room, and cohort isolation. The findings on the experience of isolation are heterogeneous. The literature mostly highlights the negative impact of isolation on inpatients, such as anxiety and depression. However, opposite findings also emerge, *e.g.*, the value of privacy (Barratt et al., 2011; Gammon and Hunt, 2018; Gammon et al., 2019; Lee et al., 2011; Purssell et al., 2020; Sharma et al., 2020; Vottero and Rittenmeyer, 2012).

It quickly becomes clear that isolation has an impact on different dimensions of experience. Despite these consequences, existing research unites different forms of isolation within its analyses (Barratt et al., 2011), or does not describe them sufficiently (Lee et al., 2011; Purssell et al., 2020; Sharma et al., 2020; Vottero and Rittenmeyer, 2012). Furthermore, 'experience' does not follow a consistent definition and is mostly depicted in a one-sided way by deficit-oriented outcomes (Gammon and Hunt, 2018; Gammon et al., 2019). Therefore, it remains unclear whether different isolation interventions lead to different experiences. Finally, patients with COVID-19 are not yet considered in any of the previous reviews.

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Aim

Based on the hypothesis that different forms of isolation lead to different experiences, this article focuses on single room isolation (SRI). Our aim is to summarize and compare the evidence on inpatients' experience of SRI, using the research question: "How do hospital inpatients experience their stay in single room isolation?"

Materials and methods

Study design

To answer the research question, an integrative review (IR) was conducted according to the approach of Toronto and Remington (2020). In this respect, the integrative design is most appropriate as it looks more broadly at a phenomenon. An IR enables the integration of different study designs and thereby determines the current state of research (Toronto, 2020; Whittemore and Knafl, 2005).

Initial considerations for this review appeared in summer 2021, with the review process lasting from September 2021 to August 2023. Reporting of the abstract, the main body, and the search history follows the PRISMA recommendations (Page et al., 2021).

Eligibility criteria

Inclusion and exclusion criteria were formulated along the PICo scheme (**P**opulation, Phenomen of **I**nterest, **Co**ntext).

Adult patients (18+) in hospitals were defined as the population. They had to be able to express themselves verbally, and be oriented spatially, temporally, situationally, and to person. Children and patients with dementia, cognitive impairments, or undergoing sedation were excluded.

The phenomenon of interest was patients' experience. In this review, experience is understood as obtaining internal or external stimuli. Sensory systems receive these and conduct them to the brain, where they are processed into object representations and cause an emotion, motivation, or action (Wirtz, 2021). Experience is versatile in nature, it varies from person to person. People are selective in their perception; they hierarchize and evaluate individually. Previous experiences play an important role: people integrate these into their everyday lives, thereby gaining security and confirmation in their current perception (Ellinger, 2010). Publications were excluded if they did not report on patients' experience, or if they reported on the experience but related it to an illness and not to associated isolation.

The context of interest is SRI in acute care hospitals. If indications could be identified that the patients were not placed in SRI (*e.g.*, shared room, cohort isolation), the publication was excluded. Isolation in psychiatric wards or intensive care units and patients who received outpatient or non-hospital care also led to exclusion.

Only peer-reviewed articles were included regardless of their study design. Due to the expected number of publications, we refrained from grey literature and limited the search period to 2011–2023. Language was set to English and German.

Search strategy

After key terms were identified, a systematic literature search was conducted in Cochrane Library, CINAHL, MEDLINE (via PubMed), and GeroLit. We created a detailed four-armed search strategy containing the components 'inpatient', 'hospital', 'isolation', and 'experience' (see Suppl. A). Initial searches were performed in November 2021, an updated search was carried out in August 2023.

To identify potential studies that may have been missed, we also performed a handsearch in LIVIVO, Google, and Google Scholar, as well as a reverse search in the identified reviews – and screened the studies included there.

Selection process

Title, abstract, and subsequent full-text screening was performed independently by two reviewers in November 2021 and August 2023 using the Rayyan application. Discrepancies were solved by team discussion.

Data collection process

Following the recommendations (Dwyer, 2020; Whittemore and Knafl, 2005), two reviewers independently extracted relevant information from the included studies into a predefined table. Extracted data was then merged and discrepancies were discussed in the group.

Risk of assessment bias

The underlying research question guides the decision on whether to include only high-quality studies (Remington, 2020). Due to the exploratory nature of the research question, all relevant studies that met the inclusion criteria were considered in this IR, regardless of their quality. Nevertheless, it is important to collect and present data on the quality of the included studies (see Suppl. B, C).

Depending on the study type, the appropriate methodological assessment was used (JBI, 2023). If publications contained two sub-studies, the appropriate instrument was used for each part. Studies were assessed independently by two reviewers. Afterwards, the results were compared, and discrepancies were solved in the research team. According to the recommendations (JBI, 2023; Panfil and Ivanovic, 2011), risk traffic lights were then used to categorize and visualize the quality of the included studies (adequate, moderate, inadequate). Categorization was based on the strength of the content referring to the individual items of each instrument, and not on quantity of items (see Suppl. B, C).

Synthesis methods

To synthesize the evidence, a constant comparison method (Dwyer, 2020; Whittemore and Knafl, 2005) used the following four phases: data reduction, data presentation, data validation, conclusion, and verification. First, we extracted and organized relevant data to derive and verify the results. Second, the data were presented, and reviewers independently interpreted the results to draw conclusions. Matrices were produced to reduce data into simplified forms and to identify patterns and relationships. These were then merged in a discursive process. Third, patterns, themes, and relationships were extracted from the previous data. Clustering, counting, contrasting, and comparing was performed. Fourth, the main categories were transferred into an initial concept. Simultaneously, we proofed its development by comparing the concept with source material and the underlying definition of experience (Dwyer, 2020; Whittemore and Knafl, 2005).

Results

A total of 5,975 titles were identified through systematic and additional searches, and 991 duplicates were removed. 4,984 titles and abstracts were screened, and 55 studies were included in the full-text screening. In the end, 20 studies met the eligibility criteria and were included (see Diagram 1).

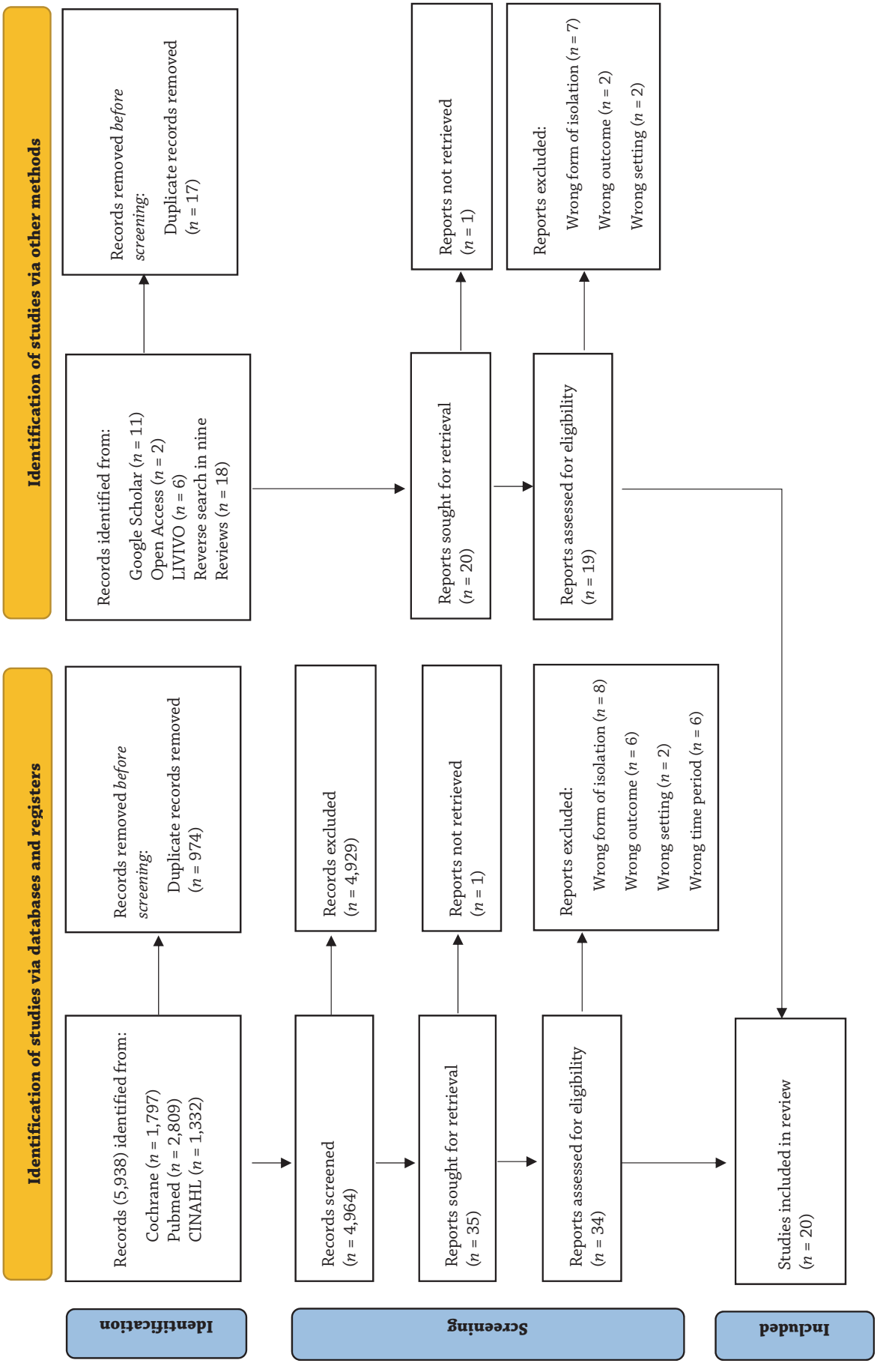

Diagram 1. Flow diagram of the screening process (Page et al., 2021)

Study characteristics

Nine qualitative studies, nine quantitative studies, and two mixed-methods studies with overall 58,534 participants were included. In studies with patients infected by pathogens, various isolation interventions took place. Four studies clearly named SRI, two studies referred to an isolation ward, eight studies to contact isolation, one study combined contact isolation and SRI, and two studies did not further specify the type of isolation. Three studies with immunosuppressed and transplant patients referred to protective isolation. Detailed study characteristics are shown in Table 1.

Table 1. Summary of included studies

Author (year), country	Design	Aim	Sample	Data collection	Isolation reason and form	Results
Biagioli et al. (2017), Italy	Qualitative study	To explore the experience of patients in protective isolation due to allogeneic hematopoietic stem cell transplantation	*n* = 9	Interviews (open, unstructured)	Stem cell transplantation Protective isolation	*Positive experience:* self-protection, protected from others, high quality of care, coming out of isolation strengthened. *Negative experience:* physical restrictions, social restrictions, negative feelings (loneliness, being locked up)
Biagioli et al. (2016), Italy	Qualitative study	To investigate the experience of patients in protective isolation due to allogeneic hematopoietic stem cell transplantation.	*n* = 10	Interviews (open, unstructured)	Stem cell transplantation Protective isolation	*Positive experience:* feeling safe in isolation, treatment was perceived to be of high quality, finding inner strength. *Negative experience:* Insecurity, loss of autonomy, loneliness, boredom, change in relationship with loved ones, physical deterioration due to lack of exercise.
Day et al. (2011a), USA	Cross-sectional study	To measure the prevalence of depression and anxiety on admission to determine if isolated patients were at risk.	*n* = 103 (20 with contact restrictions, 83 without)	HADS	Infection (MRSA) Contact isolation, gloves, gown	No differences between groups
Day et al. (2011b), USA	Retrospective cohort study	To determine the effects of contact restrictions on a large population of inpatients.	*n* = 28,564 (Non-ICU; *n* = 3,138 isolated; *n* = 25,426 not isolated)	ICD-9 diagnoses from patient chart	Infection (MRSA, VRE, MDR) Contact isolation	Isolation was significantly associated with depression, but not with anxiety.
Findik et al. (2012), Turkey	Non-randomized quasi-experimental study	To investigate effects of contact isolation on anxiety and depression.	*n* = 117 (IG = 60; CG = 57)	HADS	Infection (MDR) SRI, gloves, mask, gown	No differences between the groups regarding depression and anxiety
Goldsack et al. (2014), USA	Qualitative part of a retrospective study	To investigate the experience of patients in isolation.	*n* = 32	Self-generated questionnaire	Infection (MRSA) Contact isolation	Fewer visitors due to isolation, health care provider take longer to respond, different treatment, restriction of rights and privileges, stigmatization and restriction of movement, feeling uncomfortable and neglected, emotional stress
Guilley-Lerondeau et al. (2016), France	Cohort study	To investigate the satisfaction and psychological effects of isolation measures.	*n* = 90 (cases = 30; controls = 60)	Self-generated questionnaire, State-Anxiety Scale of Spielberger	Infection (MDR) Contact isolation	67% were dissatisfied with the information on isolation measures. Significant differences (less satisfaction) in the area of support with activities of daily living, cleaning of the room and availability of staff. Significantly higher medians of the State-Anxiety Scale of Spielberger in isolated patients

Table 1. (*continued*)

Author (year), country	Design	Aim	Sample	Data collection	Isolation reason and form	Results
Hao et al. (2020), China	**a)** Cross-sectional study **b)** Qualitative study	**a)** To study the neuropsychiatric outcome of acutely ill patients with 2019 coronavirus infection (COVID-19). **b)** To explore the subjective experience and psychological impact of COVID-19 infection.	**a) and b)** *n* = 30	**a)** DASS-21, IES-R, ISI **b)** Semi-structured interviews	Infection (Corona virus) Isolation ward, full body protection	**a)** No significant results between the three groups, except for insomnia in the COVID-19 group. **b)** Feelings of isolation, boredom and depressed mood, COVID-19 patients realized through caring staff that feelings of isolation were due to the illness rather than isolation, loss of original social role (replaced by the role of 'sick person'), irritation and dejection.
Hereng et al. (2019), France	Qualitative study	To evaluate well-being after hospitalization due to infection with a multidrug-resistant germ.	*n* = 11	Structured interviews	Infection (MDR) SRI	No relevant results regarding the experience of isolation.
Hu et al. (2020), China	Cross-sectional study	To investigate the psychological state and related factors during COVID-19 infection.	*n* = 85	ISI, PHQ-9, GAD-7	Infection (Coronavirus) Isolation ward	No relevant results regarding the experience of isolation.
Ibert et al. (2017), Germany	Cross-sectional study	To find out factors influencing individual perception, describe the experiences of those affected, and to explore what psychological effects SRI has.	*n* = 32	BFI-10, PANAS, HADS, self-generated questionnaire	Infection (Multi-resistant germs, tuberculosis) SRI, gloves, gown, mask	Depression and anxiety (HADS) were not significant. Length of isolation correlates positively with symptoms of anxiety. In 39%, isolation was experienced as a burden (loneliness, dependence on nursing staff, protective clothing, boredom, stigmatization).
Jesus et al. (2019), Brazil	Qualitative study	To examine the perceptions, meanings, and effects of isolation measures.	*n* = 19	Semi-structured interviews	Infection Contact isolation, SRI	*Positive experience:* privacy and comfort of own room, better protection against other diseases, privileged treatment (therapeutic) compared to others. *Negative experience:* feelings of loneliness, fear, sadness and despair at being in a small room with few exits, stigmatization due to isolation, insecurity due to insufficient information.
Livorsi et al. (2015), USA	Case control study	To investigate the influence of contact restrictions on satisfaction with hospitalization.	*n* = 209 (cases = 70; controls = 139)	HCAHPS	Infection (MRSA) Contact isolation, gloves, gown	No significant differences between isolated and non-isolated patients.
Lupión-Mendoza et al. (2015), Spain	**a)** Case control study **b)** Qualitative study	To study various aspects regarding the negative effects of isolation.	**a)** *n* = 144 (cases = 72; controls = 72) **b)** *n* = 28	**a)** HADS **b)** Semi-structured interviews	Infection (multi-resistant germs) Contact isolation	**a)** Isolation is significantly associated with depression, but not with anxiety. **b)** *Positive experience:* privacy and tranquility *Negative experience:* lack of freedom, desire for social contacts, delayed staff response to urgent needs.

Table 1. (*continued*)

Author (year), country	Design	Aim	Sample	Data collection	Isolation reason and form	Results
Pei et al. (2021), China	Qualitative study	To identify issues where nursing interventions can be taken to address the psychological impact of isolation, in the context of a COVID-19 disorder.	*n* = 10	Semi-structured video interviews	Infection (Coronavirus) N/a	Anxiety, depression and insomnia, lack of care and information about own condition, insecurity about family members who are also in isolation.
Russell et al. (2011), UK	Qualitative study	To investigate patients' experiences regarding appearance changes in the context of allogeneic bone marrow transplantation.	*n* = 6	Semi-structured interviews	Bone marrow transplantation Protective isolation	Isolation as protection against the reactions of the social environment to the changed appearance.
Shaban et al. (2020), Australia	Qualitative study	To explore the perceptions and experiences of isolated individuals with COVID-19.	*n* = 11	Semi-structured interviews	Infection (Coronavirus) SRI, gloves, gown, mask	*Positive experience:* professionalism, quality of care, opportunity for self-reflection. *Negative experience:* lack of social contacts, loss of sense of time, limited possibilities of movement, being cut off from the outside world, more difficult communication and interaction with hospital staff (especially with language barriers), reinforcement of psychological effects through longer periods of isolation.
Siddiqui et al. (2019), USA	Case control study	To identify the influence of isolation on satisfaction with hospitalization.	*n* = 20,600 (cases = 1,784; controls = 18,816)	HCAHPS	N/a Contact isolation/ droplet isolation/ airborne isolation, gloves, gown, mask	Less satisfaction in responding to needs (toileting, bell, pain) in isolation group.
Son et al. (2021), South-Korea	Qualitative study	To explore how COVID-19 patients experience their disease.	*n* = 16	Interviews with key questions	Infection (Coronavirus) N/a	*Positive experience:* time to reflect on one's life, love, comfort and care from relatives, sympathy with staff (protective clothing, high workload). *Negative experience:* feeling trapped, feeling lonely and afraid, missing fresh air and nature, boredom, helplessness, stress, lack of information, depression and suicidal thoughts, conflicts with relatives (not being able to be there).
Vinski et al. (2012), USA	Case control study	To investigate the influence of isolation on satisfaction with in-hospital stay	*n* = 8,436 (cases = 203; controls = 8,203)	HCAHPS	Infection Contact isolation	Patients in isolation experience communication with physicians and response time as less satisfying than non-isolated patients.

Abbreviations: BFI-10 = Big Five Inventory; CG = Control group; DASS-21 = Depression-anxiety-stress-scale; GAD-7 = Generalized Anxiety Disorder Scale; HADS = Hospital Anxiety and Depression Scale; HCAHPS = Hospital Consumer Assessment of Healthcare Providers and Systems; ICU = Intensive care unit; IES-R = revised Impact of Event Scale; IG = Intervention group; ISI = Insomnia Severity Index; MDR = Multiple drug resistance; MRSA = Methicillin-resistant Staphylococcus aureus; PANAS = Positive and Negative Affect Schedule; PHQ-9 = Patient Health Questionnaire; SRI = Single room isolation; VRE = Vancomycin-resistant Enterococcus

As recommended by Toronto and Remington (2020), quality of included studies was not considered in the synthesis of results. Nevertheless, methodological assessments were performed and the risks of bias estimated. Nine out of twenty of the included studies showed one or more risks of bias (see Suppl. B, C).

The results were synthesized into seven main categories, which contain a total of 32 subcategories (see Table 2). These categories are described below and supplemented by several examples.

Table 2. Main and subcategories of patients' experience

Main category	Subcategories
Context factors	• Duration of isolation • Reason for isolation • Underlying disease • Socio-economic factors
Isolation as a shelter	• Protection from threats • Privacy • Peace of mind
Isolation as a prison	• Lack of social contacts • Limited mobility • Loneliness • Loss of autonomy • Being locked up and isolated
Psychological burden through isolation	• Depression • Anxiety • Sleep problems • Boredom • Loss of sense of time • Emotional stress • Insecurity • Sadness • Helplessness
Social effects of isolation	• Relationship with relatives changed • Stigmatization • Loss of role
Effects on the perception of professional care	• Dissatisfaction with the quality of care • Satisfaction with the quality of care • More difficult communication • Dependence on staff • Compassion with caregivers
Isolation as a chance	• Find inner strength • Post-traumatic growth • Self-reflection

Context factors

Studies highlight that influencing factors are associated with the experience of isolation. In particular, the *duration of isolation*, the *reason for isolation*, and the *underlying disease* appeared to play an important role (Hao et al., 2020; Ibert et al., 2017; Shaban et al., 2020; Siddiqui et al., 2019). A patient stated: *"If I test positive again, I'm going to go crazy. And I'll find a way to get out somehow"* (Hao et al., 2020, p. 7).

Publications note that the experience of isolation and the experience of the disease for which people are isolated take place simultaneously – and thus cannot always be clearly separated. *Socio-economic factors* such as gender, education level of participants, or cultural background can also influence the experience of isolation (Findik et al., 2012; Hao et al., 2020; Hu et al., 2020; Jesus et al., 2019; Son et al., 2021). One patient explained: *"I used to be in the military, so being stuck in one place for two months is nothing to me"* (Hao et al., 2020, p. 7).

Isolation as a shelter

Not only immunosuppressed, but also infectious patients perceived their isolation as a *protection from threats* (Biagioli et al., 2016, 2017; Jesus et al., 2019; Russell et al., 2011). *"I believe I'm more protected here because I'm alone and everyone who enters the room must wear a mask. I have no contact with other patients who have other diseases"* (Jesus et al., 2019, p. 877). In addition, accommodation in a single room is valued by those affected in terms of *privacy* and *peace of mind* in an otherwise rather restless hospital environment (Jesus et al., 2019; Lupión-Mendoza et al., 2015). A person reported: *"I like being alone, so I think it's better because in the collective room I'm afraid of getting an infection"* (Jesus et al., 2019, p. 876).

Isolation as a prison

The majority of studies describe a negative experience connected to the isolation in a single room. Different feelings and perceptions, such as *loneliness, loss of autonomy* and *being locked up and isolated*, were expressed. *"I have never been in jail before, but I would assume that it would be [a] similar experience"* (Shaban et al., 2020, p. 1448). According to the patients, the reasons for these include a severe *lack of social contact* and *limited mobility* (Biagioli et al., 2016, 2017; Goldsack et al., 2014; Hao et al., 2020; Ibert et al., 2017; Jesus et al, 2019; Lupión-Mendoza et al., 2015; Shaban et al., 2020; Son et al., 2021). Son et al. (2021, p. 9) stated that *"participants in the study missed the fresh air and landscape of the outside world"*.

Psychological burden through isolation

Studies also investigated *depression, anxiety*, and *sleep problems* in isolated patients (Day et al., 2011a, b; Findik et al., 2012; Guilley-Lerondeau et al., 2016; Hao et al., 2020; Ibert et al., 2017; Lupión-Mendoza et al., 2015). An interviewee stated: *"I feel that there is no longer meaning to life, […] my life and memories are not real"* (Hao et al., 2020, p. 7). Another patient asked: *"Every day I wonder – when will this life ever end?"* (Hao et al., 2020, p. 7).

In addition to statistical confirmation, these psychological burdens are also described as subjective experiences in some of the qualitative studies (Hao et al., 2020; Jesus et al., 2019; Pei et al., 2021; Son et al., 2021). One participant stated: *"[A]nd I became even more anxious. In addition, the whole treatment process was so terrible I would rather be dead"* (Pei et al., 2021, p. 3).

Boredom and *loss of sense* of time can be understood as psychological effects of isolation. A patient pointed this out: *"There is nothing in here, no clocks, no TV, no mirrors"* (Shaban et al., 2020, p. 1448). This was confirmed by another patient: *"Staying in a 2 × 2 m room without any television, with nothing, just looking at the wall, this is bad for the mind"* (Jesus et al., 2019, p. 877). There are also descriptions of *emotional stress, insecurity, sadness*, and *helplessness* (Biagioli et al., 2016; Goldsack et al., 2014; Hao et al., 2020; Ibert et al., 2017; Jesus et al., 2019; Pei et al., 2021; Shaban et al., 2020; Son et al., 2021).

Social effects of isolation

Studies describe how the *relationship with relatives changed*, or that conflicts with them arose (Biagioli et al., 2016; Son et al., 2021). A patient stated: *"I couldn't see my daughter and be close to her. That hurt me most, as she was looking for me"* (Biagioli et al., 2016, p. 82). *Stigmatization* and *loss of role* are social consequences that can also be found in the analysed literature (Goldsack et al., 2014; Hao et al., 2020; Ibert et al., 2017; Jesus et al., 2019). One patient summarizes these effects by saying: *"I think the most difficult is the situation itself, the isolation. You*

feel very inferior, it is bad to the psychological" (Jesus et al., 2019, p. 877).

Effects on the perception of professional care

Studies also focus on the effects of how care is perceived during isolation. Vinski et al. (2012), Livorsi et al. (2015), Guilley-Lerondeau et al. (2016), and Siddiqui et al. (2019) investigate this topic with the help of questionnaires. The results indicate, except in the publication of Livorsi et al. (2015), that *dissatisfaction with the quality of care*, in individual aspects or overall, is higher in the isolated group compared to non-isolated patients. This aspect was also found in four qualitative studies (Goldsack et al., 2014; Lupión-Mendoza et al., 2015; Pei et al., 2021; Son et al., 2021). Pei et al. (2021, p. 3) stated that *"patients often experienced difficulties getting information from healthcare workers regarding their conditions and treatment plans"*.

However, isolated patients also report high *satisfaction with the quality of care* (Biagioli et al., 2016, 2017; Hao et al., 2020; Jesus et al, 2019; Shaban et al., 2020; Son et al., 2021). Shaban et al. (2020, p. 1448) pointed out that *"for some of the participants, isolation and quarantine practices were positive experiences and a clear reflection of the professionalism and quality of care being provided"*.

Furthermore, isolation leads to a *more difficult communication* (Shaban et al., 2020; Vinski et al., 2012). The *dependence on staff* is experienced as a burden by some study participants (Ibert et al., 2017). Isolated patients also describe how they saw what hospital staff have to do and therefore express their *compassion with caregivers: "[T]hey felt sorry for the nurses as they watched them work tirelessly in heavy anti-contamination clothing and gear"* (Son et al., 2021, p. 9).

Isolation as a chance

Finally, isolation is also experienced as an opportunity for the patients. In particular, protective isolation can help people to *find* their *inner strength* and thus to cope with the experience of illness in the sense of *post-traumatic growth* (Biagioli et al., 2016, 2016). A patient reflects on his change: *"I overcame it well, because I started with the idea that it would have gone bad, so I was under no illusions"* (Biagioli et al., 2016, p. 83).

However, isolation interventions due to one's own infectiousness also offer the potential of *self-reflection* (Shaban et al., 2020; Son et al., 2021). *"Some participants also discussed the positive aspects of isolation, stating that it offered an opportunity to reflect on their lives"* (Son et al., 2021, p. 9).

Discussion

The included studies point out that the experience of SRI relates to the treatment in the single room itself. This can be perceived as a prison or as a shelter, with both positive and negative interpretations. In addition, the results highlight a predominantly negative perception of isolation regarding the effects on mental state and social fabric of those affected. However, some studies also reported positively perceived effects. Isolated patients interpret the time as a chance for personal reflection and transformation.

The experience of isolated inpatients also extends to treatment and interaction with health care providers. Here, diametrically opposed results emerge. While some studies highlight the experience of a rather worse treatment in isolation, some patients were satisfied with the treatment during their time in isolation.

Based on this, the central finding of this review is the complexity of experiencing SRI. This can be explained by the experience on three levels. Firstly, the intrapersonal experience of patients is complex. It is not always constant and can change from time to time. Patients are heterogeneous, they do not all experience their isolation in the same way. In addition, patients can experience different aspects at the same time. For example, they feel safe on the one hand and imprisoned on the other. Secondly, the dimension of interaction with others is complex. Care provided by health care personnel is described differently. Some felt distanced, others felt that distance was important. This also applies to the relationships with relatives and friends. Interaction with them was described in very different ways and thus shows versatility. Thirdly, the experience is complex at the level of science and research. The included studies demonstrate that there can be a varying understanding of experience. Also, different methods are used to assess the experience (see Table 1). The development of seven categories demonstrates how diverse the experience can be. This implies that health care personnel need to know a lot on this topic.

Overall, the results of this IR are mostly consistent with the findings of previous reviews. Isolation is mainly associated with negative outcomes, and some studies indicate negative psychological effects on patients (Gammon and Hunt, 2018; Lee et al., 2011; Purssell et al., 2020; Sharma et al., 2020), as confirmed by our review. The experience of isolation is inconsistent and heterogeneous (Barratt et al., 2011; Purssell et al., 2020), and SRI is often perceived as a prison (Barratt et al., 2011; Gammon et al., 2019; Vottero and Rittenmeyer, 2012). This review also confirms these findings.

Nevertheless, SRI may be also an opportunity for (self) reflection, finding inner strength, and achieving posttraumatic growth (Biagioli et al., 2016, 2017; Shaban et al., 2020; Son et al., 2021), which has not been identified by the aforementioned reviews.

Patients described different aspects to strengthen their will to live. On the one hand, they had to focus on the healing process and their own character. On the other hand, their relatives were a motivation for them to get through the time in isolation. These aspects were difficult but necessary for patients (Biagioli et al., 2016). Posttraumatic growth was evident in some patients who valued their own health more at the end of the process. This may not have been possible without the experience of illness and reflection during the period of protective isolation (Biagioli et al., 2017). Unlike previous reviews, these results can be newly categorized as 'isolation as a chance'.

As a further result, this IR is the most current review on the topic of isolation, also including COVID-19 patients. In addition, it is the only review that considers SRI.

Studies from five continents provide an international view on isolation. This leads to heterogeneous forms of isolation based on different cultures, health care systems, and resources. In this review, however, the heterogeneity of included studies is both positive and negative. It generates a broad view of isolation forms and the associated experience, but the results cannot be transferred without reflecting on context and type of isolation. It should also be noted that patients are not only cared for in single rooms due to the need for isolation.

Limitations

A key limitation is the inadequate description of isolation interventions in the primary studies. Not all studies clearly indi-

cated an SRI, but they didn't indicate shared rooms or cohort isolation either. According to the eligibility criteria, studies were only excluded when they clearly violated an inclusion criterion.

Only papers in German and English were included and publication bias cannot be ruled out. Nevertheless, a large number of findings were screened. It is therefore possible, but rather unlikely, that important results were missed.

Finally, the understanding of 'experience' has to be reflected once again. This definition provides the basis for the present review and influences the entire process. The present article was based on a psychological understanding of experience (stimuli-response), which was extended by aspects of pedagogy (individual selection and hierarchization of perception). After data analysis and synthesis, it became clear that our definition was too limited, which is why key aspects could not be considered. These include patients' lived experience and aspects of body phenomenology.

Conclusion

There are no consistent results regarding the experience of SRI. Participants reported a heterogeneous experience with different dimensions and manifestations. The experience may be dynamic and change more or less during the hospital stay. However, differentiated causal relationships between the influencing factors and patients' experience could not be determined. Also, the correlation between the individual experience clusters cannot be determined. Thus, the multifaceted and multidimensional experience of SRI needs to be defined and differentiated more precisely.

Research addressing the specific endpoints of the experience, as well as possible measurement tools is needed. As almost all the included studies highlighted the role and behaviour of nurses, studies should be conducted in that area. Nurses and other health care providers have lasting effects on the patients' experience and must therefore be particularly sensitive in dealing with those affected. Specifically, it is their responsibility to appropriately meet the inpatients' needs. On the one hand, this requires a broad knowledge of the possible effects of isolation. On the other hand, it requires the ability to apply this knowledge to the individual case. This means that caregivers must know how patients can experience an SRI to be able to assess it correctly in individual cases. For this reason, universities and vocational schools also have a responsibility to impart this knowledge to future nurses.

Review registration and protocol

The integrative review was not registered, nor was a protocol developed and published.

Availability of data and materials

Data is available on request from the authors.

Author contributions

All authors substantially contributed to the manuscript. Participation in research: FS, PS, IE, JL, JE, RS, CM, RPH, ES. Article preparation: FS, PS, IE, JL, JE, RS, CM, RPH, ES.

Ethical aspects and conflict of interest

The authors have no conflict of interest to declare.

Zkušenosti pacientů s izolací na jednolůžkovém pokoji v nemocnicích: integrativní přehled

Souhrn

Pozadí: Izolace infekčních nebo imunosuprimovaných pacientů je běžnou intervencí v nemocnicích. Důkazy zdůrazňují různé dopady v důsledku izolace.

Cíl: Prozkoumat zkušenosti dospělých hospitalizovaných pacientů s izolací na jednolůžkovém pokoji.

Metodika: Byla provedena integrační revize. Proto bylo provedeno systematické vyhledávání v Cochrane, CINAHL, MEDLINE a GeroLit, stejně jako dodatečné ruční vyhledávání a zpětné vyhledávání v letech 2021 a 2023. Screening a extrakci dat prováděli nezávisle dva recenzenti. Syntéza výsledků studie byla provedena konstantním porovnáváním.

Výsledky: Z 5 975 zjištění bylo zahrnuto 20 studií (9 kvalitativních, 9 kvantitativních, 2 smíšené) obsahujících 58 534 účastníků. Zkušenosti pacientů závisí na různých kontextových faktorech. Studie popisují mnohostrannou zkušenost s izolací na jednolůžkovém pokoji. Izolace je vnímána jako ochrana před hrozbami; pacienti zažívají klid a soukromí, ale jsou také konfrontováni s omezeními ve vztahu k mobilitě a kontaktu. Studie zmiňují, že izolace má různé psychologické a sociální dopady a také vliv na vnímání poskytované péče. Ačkoli je to často vnímáno jako velká zátěž, studie zdůrazňují příležitost k sebereflexi a nalezení vnitřní síly.

Diskuse: Pacienti uváděli komplexní, multidimenzionální a nekonzistentní zkušenost. Je zapotřebí dalšího výzkumu, aby se řešily diferencované kauzální vztahy mezi ovlivňujícími faktory a různými zkušenostmi.

Klíčová slova: izolace; nemocnice; ošetřovatelství; stacionář; zkušenosti

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