



Social participation of people with chronic wounds: A systematic review

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Abstract

Living with chronic ulcers can be burdensome and restrictive, with regard to not only physical and psychological but also social well-being. This review aims to analyse social participation in patients with chronic wounds and to compare results across different wound types. A search string was applied in several electronic databases. Results were screened according to predefined inclusion and exclusion criteria. Data of eligible articles were extracted and synthesised narratively. The search revealed 42 eligible publications. Only minor differences across different ulcer types could be detected. Overall, family members were the main social contacts for patients; they often provided wound care and emotional support. Patients had few non-family relations, but those existing were often very close. Patients felt guilty as their condition imposed burden on family and friends, as well. A close relationship with nurses was described. Restrictions were caused by direct and indirect consequences of the wound. Overall, social support and social connections were reduced in wound patients. Inconsistent results were found regarding social isolation. In summary, people with chronic wounds experience impairments in all aspects of social participation. Therefore, social participation deserves increased attention in routine care both as a trigger of burden and as an outcome of therapy.

KEYWORDS

social isolation, social participation, social support, ulcer, wounds and injuries

1 | INTRODUCTION

Living with chronic wounds can be burdensome and can cause various restrictions in patients' daily life. A wound becomes chronic when it fails to show sufficient healing in a timely manner.¹ The exact timeframe after which a wound is considered chronic ranges from 4 weeks to

3 months.^{2,3} Besides the duration of the wound, the existence of an underlying condition is an indicator to define a wound as chronic.⁴ Chronic wounds can have different underlying aetiologies, such as venous insufficiency, arterial disease, diabetes, or constant pressure.⁵ Worldwide, the pooled total prevalence of chronic wounds is 1.67 per 1,000 people⁶ with especially high

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prevalence in older adults.⁷ Age also negatively effects healing and recurrence as well as treatment adherence.^{8,9} People with chronic wounds often have reduced health-related quality of life (HRQoL) with regard to various dimensions.¹⁰⁻¹² Patients may not only experience wound-specific burden, such as exudate, odour, and pain but also more general impairments, such as depressions, anxiety, and sleep disturbances.^{13,14} Furthermore, many people with chronic wounds are financially burdened and restricted in their activities,¹⁵ all of which can result in impairments in patients' social participation.

Social participation and its impact on health have been described by Douglas et al.¹⁶ They define different forms of social participation:

- Social connections: ties with people in the individual's intimate or extended environment.
- Informal social participation: activities with others being pursued by the individual for own enjoyment by taking advantage of social interaction.
- Volunteering: activities in organisations (eg, community, church) being pursued by the individual for others' benefit.

They suggested that the positive effects of these forms of social participation on the individual's health are mediated by:

- Social support: help and assistance for the individual when it is needed.
- Social cohesion: the individual's sense of trust and reciprocity in the community.

This model is used for this review because of its distinct and clear definition of different aspects of social participation. Other authors may use different names for the same aspects of social support.¹⁷⁻²¹ Another reason for using this model is the fact that it was established in the context of older adults, which is an important target group with regard to chronic wounds.

Social participation can be beneficial in two ways: by buffering specific stressors in stressful episodes or by having a constant beneficial impact on health irrespectively of the presence of stressors.²² According to Berkman,²³ social support can improve health by enabling the individual to experience a sense of belonging and intimacy. However, negative consequences of social support might occur for both providers of support and patients. From the provider's perspective, providing informal care can be burdensome and cause adverse health outcomes.²⁴ From the patient's perspective, extensive support can foster patients' dependency.²⁵ Especially in the absence of family and friends, patients may become dependent from

Key Messages

- Chronic wounds pose major restrictions upon patients, not only regarding physical and mental health but also social life. To date, no study has compared social participation across various wound types.
- The aim of this article was to review literature about social participation of people with chronic wounds and to compare results across different wound types.
- Only minor differences between results of studies investigating different wound types could be detected.
- Family is consistently described as the major source of social support and social participation; mostly, a low number of relationships with friends are reported but those existing are described as very close. Patients with a continuous nurse relationship often report a unique relationship with this healthcare provider.

formal care providers. Therefore, it has been suggested that people with chronic wounds may hinder their wounds from healing or induce recurrence of wounds in order to preserve the contact to their nurses. This secondary gain of illness is called *social ulcer*.²⁶ This phenomenon is of rather anecdotal evidence²⁷ though secondary benefits from illness may occur. Beyond that, social participation not only influences health, but the health status also influences social participation.^{27,28} Accordingly, experiencing pain, having limited mobility, or feeling shame because of wound odour and wound exudate leads to patients' rejection or inability to socially participate.²⁹⁻³²

The issue of social participation requires special attention in people with chronic wounds. This is because people of higher age have more chronic wounds and less wound closure,^{7,8,33} and also the highest risk for reduced social participation up to social isolation.³⁴

Previous reviews have covered aspects of social participation in people with chronic wounds. However, they consider only specific dimensions of, or aspects related to, social participation, such as social impacts,³⁵⁻³⁷ psychosocial effects,³⁸ experiences of living with a chronic ulcer,³⁹⁻⁴¹ or patient-centred care.⁴² Social participation as described in the model presented earlier¹⁶ is a complex construct having great impact on the patients' well-being and should thus be considered accordingly in order to achieve a comprehensive understanding of the impacts of

chronic wounds on patients' life. Additionally, the previous reviews focused on one specific type of chronic wounds each, mostly leg ulcers^{36,38,39} and venous leg ulcers,^{27,37,40,41} or did not distinguish between different types of chronic wounds.⁴² Accordingly, no conclusion can be drawn whether social participation differs regarding the underlying aetiology. Although some consequences of chronic wounds are similar across wound types (eg, frequent wound dressings, restrictions in choice of clothes⁴²), others differ with regard to the underlying aetiology (eg, pain severity⁴³). Revealing potential differences in social participation in these patients could inform future research and clinical decision-making.

Therefore, the present review aims to describe the state of research on social participation in patients with chronic wounds, taking the different dimensions of social participation into account, and to compare results across different wound types.

2 | MATERIALS AND METHODS

The conduct of this systematic review has been registered at PROSPERO (CRD42020157433). We searched the electronic literature databases MEDLINE (PubMed), Cochrane Library, Web of Science, PsychINFO, and CINAHL. The search string combined keywords related to *chronic wounds* and *social participation*. Keywords on *chronic wounds* were based on search strings used by other systematic reviews on this indication^{42,44-46} and were discussed with a dermatologist (NK). Keywords on *social participation* were based on concepts covered in the model of social participation¹⁶ and systematic reviews about aspects of social participation.^{42,47-49} In collaboration with a librarian, the search string was finalised to be applicable in various databases. The search string as used in MEDLINE (PubMed) is displayed in Appendix 1.

All search results were extracted, and duplicates were removed. The titles and abstracts of the remaining records were screened by two researchers (TMK and VA) applying predefined exclusion criteria. Full texts were then assessed accordingly. Exclusion criteria were (a) studying non-dermatological ulcers, (b) studying acute ulcers, (c) studying tropical ulcers, (d) social participation not being a major outcome of the study, (e) specific article types (ie, study protocols, case studies, no data collection), and (f) article language being neither English nor German. Literature reviews were not included, but articles cited by the reviews were screened related to title and reported content. In a last step, reference lists of eligible articles were screened for further relevant articles.

After identification of all eligible articles, data were extracted including information on the article, the study,

sample characteristics, wound type, and the perspective on and results regarding social participation. Wound types were stratified by articles reporting on patients with any form of leg ulcers (LU), venous leg ulcers (VLU), arterial leg ulcers (ALU), mixed leg ulcers (MLU), diabetic foot ulcers (DFU), pressure ulcers (PU), ulcers caused by other diseases, mixed samples of different types, and unspecified ulcer types. The perspective on social participation was categorised by articles treating social participation as a distinct construct, as a subdomain of HRQoL, or as aspect of another construct. Even though articles used different terminologies for the aspects of social participation covered here, their results were assigned to categories as defined by the model of Douglas et al,¹⁶ namely social support, social connections, informal social participation, volunteering, and social cohesion. At a later stage, informal social participation and volunteering were combined to informal/formal social participation because volunteering was seldom reported and, if so, only jointly with activities of informal social participation. Due to the heterogeneity of included studies, the large number of qualitative articles, and the variety of instruments used for assessing aspects of social participation, data were synthesised narratively.

The quality of all included studies was evaluated by applying checklists of the Critical Appraisal Skills Programme (CASP). These checklists exist for a variety of study designs. As no CASP checklist exists for cross-sectional studies, the CASP checklist for case-control studies was adapted by excluding criteria about the control group (CASP criteria 4 and 6a). Studies with a mixed methods design were assessed using the CASP checklist for the corresponding quantitative design. The number of criteria in each CASP checklist ranged from 10 (qualitative, cross-sectional) to 13 (cohort). The evaluation for most criteria was three-stepped (yes/can't tell/no), except for criterion 9 in cross-sectional studies ("Do you believe the results?": yes/no).

3 | RESULTS

Literature research in electronic databases identified 4,747 articles after removal of duplicates. After title and abstract screening, 96 articles remained. Full-text assessment identified 43 relevant articles, of which 32 were original studies and 11 were reviews. Reference screening was conducted accordingly. This process resulted in 42 eligible articles in total (Figure 1).

3.1 | Characteristics of included studies

The 42 articles included in this review present results of 40 studies and were published between 1986 and 2019

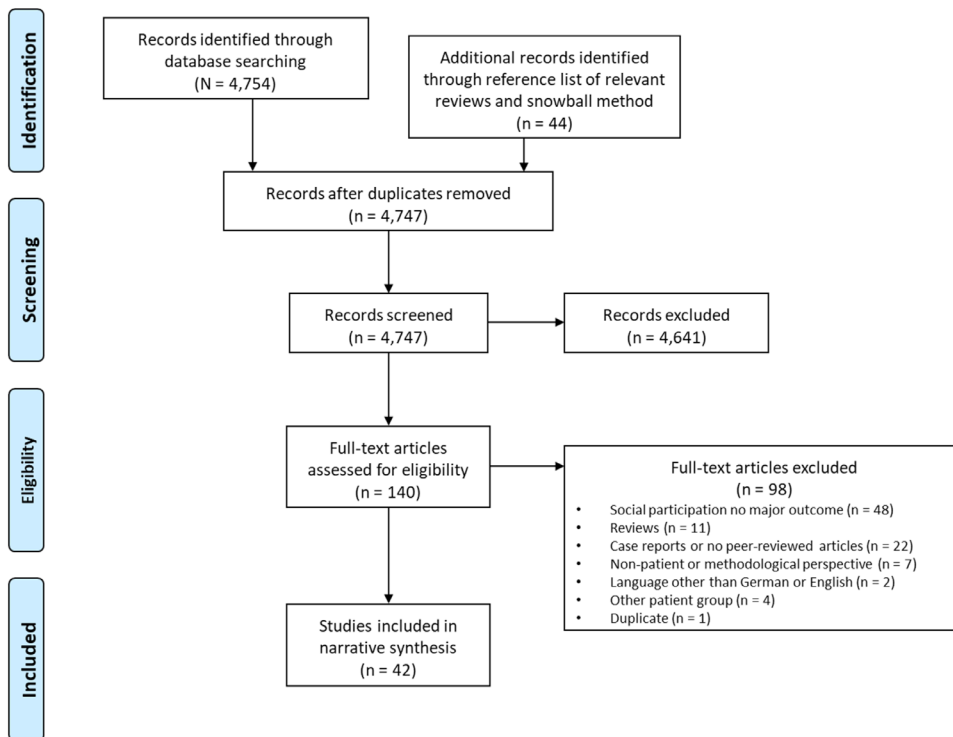


FIGURE 1 Flow chart of systematic review process

(Table 1). Of these, 24 were qualitative studies.^{25,30-32,50-69} Of the quantitative studies, 13 were cross-sectional⁷⁰⁻⁸² (of which six had a comparative approach, eg, ulcer vs non-ulcer participants) and two were cohort studies.^{83,84} Three studies had a mixed-methods design.^{26,85,86} The number of patients with chronic wounds included ranged from 3⁶⁵ to 758.^{80,81} About half of the articles (n = 20) reported about studies conducted exclusively in the United Kingdom^{26,30,50,51,53,56,57,59,62,64,65,69,75,76,80,81,83-86} and seven articles about studies conducted in Brazil.^{25,31,52-55,58,61,64,65,70,71,77,79} The other articles reported studies from different countries. Results included 12 articles (21.8%) on patients with VLU,^{25,50,54,55,59,62,63,66,69,76,82,86} 9 articles (16.4%) on patients with LU,^{26,60,72-75,78,80,81} 8 articles (14.5%) on patients with DFU,^{53,61,64,65,70,71,77,79} 4 articles (7.3%) on patients with PU,^{30,57,67,68} and 3 articles (5.5%) on patients with ulcers caused by other diseases: rheumatoid arthritis,⁵⁶ epidermolysis bullosa,⁵¹ and sickle anaemia.³¹ Four articles (7.3%) investigated patients with different wound types,^{52,58,84,85} and one article (1.8%) did not specify the wound types.³² Most articles report on studies recruiting in an outpatient clinic or by district nurses; seven studies did not specify the setting of recruitment.^{53,65,67,69,72,74,77,79} One study each recruited patients exclusively in an inpatient clinic,⁷³ in both inpatient and outpatient clinics,³² or in a Leg Club.⁸⁵ Leg Clubs have been developed in the United Kingdom and are meetings in which community-based care is provided in non-medical settings. Here, patients can drop in without appointment for being treated by a nurse and socialise

with other patients.⁸⁷ Leg Clubs have also been founded in Australia and Germany.⁸⁸

In 16 articles, aspects of social participation were treated as distinct constructs,^{25,26,50,52,58,61,71,73-77,79,83-85} in 7 as subdomains of HRQoL,^{53,56,62,65,80,81,86} and in 19 they were described in the scope of another construct,^{30-32,51,54,55,57,59,60,63,64,66-70,72,78,82} such as *lived experience* or *psychosocial adjustment*. In quantitative studies, aspects of social support were measured with a number of different questionnaires (eg, UCLA Loneliness Scale,⁸⁹ Inventory of Socially Supportive Behaviour,⁹⁰ and Medical Outcomes Study Social Support Survey⁹¹).

3.2 | Quality assessment

In using different CASP checklists for the quality assessment, we acknowledged the difference in study designs. The assessment revealed mixed quality of the included articles (Table A1). In particular, quantitative studies did not fulfil or only partly fulfilled some of the CASP criteria. The number of fulfilled criteria ranged from one to eight of 10 across the cross-sectional and from five to six of 13 across cohort studies. Most of the quantitative studies lacked generalisability due to small sample sizes or low quality of study design. Within the qualitative studies, many fulfilled the majority of the 10 criteria, whereas others lacked the fulfilment of numerous

TABLE 1 Details on the articles included in this study

Authors	Year	Country	Study design	Sample size (n)	Age (years)	Ulcer types	Perspective on SP	SP Instrument
Adni et al ⁵¹	2012	United Kingdom	Qualitative: interpretative phenomenology	6	$\bar{x} = 39.3 \pm 17.4$, range: 24 to 67	Epidermolysis bullosa ulcer	Aspect of lived experience	—
Akca et al ⁷⁰	2008	Turkey	Quantitative: comparative cross-sectional	200 (DFU: 100, controls: 100)	DFU: $\bar{x} = 61.84 \pm 9.34$; controls: $\bar{x} = 55.22 \pm 3.77$	DFU	Aspect of psychosocial adjustment	PAIS-SR, Ways of Coping instrument
Bandeira et al ⁵²	2018	Brazil	Qualitative: social network analysis	9	$\bar{x} = 56$, range: 37 to 79	VLU, ALU, MLU, PU, unspecified ulcer	Distinct construct	Map construction indicators
Bradbury and Price ⁶⁵	2011	United Kingdom	Qualitative: not specified	3	Range: 71 to 86	DFU	Subdomain of HRQoL	—
Brod ⁵³	1998	United Kingdom	Qualitative: not specified	14	$\bar{x} = 57$, range: 39 to 83	DFU	Subdomain of HRQoL	—
Brown ⁵⁰	2005	United Kingdom	Qualitative: not specified	8	n/a	VLU	Distinct construct	—
Byrne and Kelly ⁶⁶	2010	Ireland	Qualitative: Heideggerian hermeneutic phenomenology	12	n/a	VLU	Aspect of lived experience	—
Charles ⁸³	2010	United Kingdom	Quantitative: cohort	65	$\bar{x} = 72$, range: 30 to 95	VLU	Distinct construct	SSQ-SF
da Silva et al ²⁵	2014	Brazil	Qualitative: not specified	14	Range: 47 to 79	VLU	Aspect of lived experience	—
da Silva et al ⁵⁴	2015	Brazil	Qualitative: not specified	14	Range: 47 to 79	VLU	Aspect of lived experience	—
da Silva et al ⁵⁵	2013	Brazil	Qualitative: social phenomenology	8	Range: 40 to 81	VLU	Aspect of daily life	—
Figueira et al ⁷¹	2012	Brazil	Quantitative: cross-sectional	30	$\bar{x} = 57$, range: 34 to 85	DFU	Distinct construct	Social support network inventory
Firth et al ⁵⁶	2011	United Kingdom	Qualitative: not specified	23	$\bar{x} = 69 \pm 10$, range: 45 to 88	Rheumatoid arthritis foot ulcer	Subdomain of HRQoL	—

(Continues)

TABLE 1 (Continued)

Authors	Year	Country	Study design	Sample size (n)	Age (years)	Ulcer types	Perspective on SP	SP Instrument
Flett et al ⁷²	1994	New Zealand	Quantitative: comparative cross-sectional	28 (LU: 14, controls: 14)	Majority >60	LU	Aspect of psychosocial aspects	UCLA Loneliness Scale; Closeness of Relationship Scale; Satisfaction with Relationship Scale
Fox ⁵⁷	2002	United Kingdom	Qualitative: phenomenology	5	Range: 31 to 64	PU	Aspect of patients' experience	-
Franks and Moffat ^{*80}	1998	United Kingdom	Quantitative: cross-sectional	758	\bar{x} = 74.6 (women: \bar{x} = 76.9 \pm 10.5; men: \bar{x} = 70.5 \pm 12.8)	LU	Subdomain of HRQoL	NHP
Franks and Moffat ^{*81}	2006	United Kingdom	Quantitative: cross-sectional	758	\bar{x} = 74.6	LU	Subdomain of HRQoL	NHP
Garcia et al ⁵⁸	2018	Brazil	Qualitative: not specified	10	Range: 32 to 70	VLU, DFU	Distinct construct	-
Hareendran et al ⁸⁶	2005	United Kingdom	Mixed methods: cross-sectional	38	\bar{x} = 71.45 \pm 12.76, range: 46 to 91	VLU	Subdomain of HRQoL	-
Hopkins ⁵⁹	2004	United Kingdom	Qualitative: hermeneutic phenomenology	8	Median: 75, range: 47 to 78	VLU	Aspect of lived experience	-
Hopkins et al ⁶⁷	2006	Belgium and United Kingdom	Qualitative: Heideggerian phenomenology	8	n/a	PU	Aspect of lived experience	-
Hyde et al ⁶⁰	1999	Australia	Qualitative: not specified	13	Range: 70 to 93	LU	Aspect of lived experience	-
Jackson et al ³⁰	2018	United Kingdom	Qualitative: not specified	12	Range: 31 to 92	PU	Aspect of lived experience	-
Keeling et al ⁸⁴	1997	United Kingdom	Quantitative: cohort	30 (LU: 15, DFU: 15)	LU: \bar{x} = 70.4, DFU: \bar{x} = 63.6	LU, DFU	Distinct construct	ISSB
Kouris et al ¹⁷³	2016 (a)	Greece	Quantitative: comparative cross-sectional	204 (LU: 102, controls: 102)	Cases: \bar{x} = 62.29 \pm 13.41, range: 34 to 88	LU	Distinct construct	UCLA Loneliness Scale (Version 3)

TABLE 1 (Continued)

Authors	Year	Country	Study design	Sample size (n)	Age (years)	Ulcer types	Perspective on SP	SP Instrument
Kouris et al ¹⁷⁴	2016 (b)	Greece	Quantitative: comparative cross-sectional	240 (LU: 80, psoriasis: 80, controls: 80)	LU: \bar{x} = 52.34 \pm 11.77; psoriasis: \bar{x} = 48.23 \pm 11.47; controls: \bar{x} = 51.56 \pm 11.31	LU	Distinct construct	UCLA Loneliness Scale (Version 3)
Lacerda et al ³¹	2014	Brazil	Qualitative: not specified	5	Range: 27 to 35	Sickle anaemia ulcer	Aspect of lived experience	—
Langemo et al ⁶⁸	2000	United States	Qualitative: phenomenology	8	\bar{x} = 35.75, range: 27 to 52	PU	Aspect of lived experience	—
Moffat et al ⁷⁵	2009	United Kingdom	Quantitative: comparative cross-sectional	190 (LU: 95, controls: 95)	59% > 75	LU	Distinct construct	NHP; MOS-SSS; COPE
Morgan et al ⁷⁶	2004	United Kingdom	Quantitative: cross-sectional	74	\bar{x} = 73.5, range: 63.5 to 81.3	VLU	Distinct construct	SSQ
Neil and Munjas ³²	2000	United States	Qualitative: Heideggerian hermeneutic phenomenology	10	—	Unspecified ulcer	Aspect of lived experience	—
Palaya et al ⁶¹	2018	Australia	Qualitative: hermeneutic phenomenology	8	Range: 48 to 74	DFU	Distinct construct	—
Palfreyman et al ⁶²	2007	United Kingdom	Qualitative: framework analysis	19 (IVDU-history: 7, no IVDU-history: 12)	Range: 27 to 79 (IVDU-history: 27 to 41, non-IVDU-history: 44 to 79)	VLU	Subdomain of HRQoL	—
Perini et al ⁶³	2006	Germany	Qualitative: not specified	12	\bar{x} = 77, range: 69 to 86	VLU	Aspect of caring	—
Pieper et al ⁸²	2000	United States	Quantitative: cross-sectional	32	\bar{x} = 44.6 \pm 4.3, range: 37 to 54	VLU	Aspect of psychosocial adjustment	PAIS-SR, Ways of Coping instrument
Rich and McLachlan ⁶⁹	2003	United Kingdom	Qualitative: Heideggerian hermeneutic phenomenology	4	\bar{x} = 77, range: 55 to 89	VLU	Aspect of lived experience	—
Searle et al ⁶⁴	2005	United Kingdom	Qualitative: constant comparison approach	13	\bar{x} = 57.3, range: 45 to 66	DFU	Aspect of lived experience	—
Septiana and Gayatri ⁷⁷	2019	Indonesia	Quantitative: cross-sectional	69	\bar{x} = 55.78 \pm 8.02, range: 40 to 71	DFU	Distinct construct	RAND Social Health Battery (Continues)

TABLE 1 (Continued)

Authors	Year	Country	Study design	Sample size (n)	Age (years)	Ulcer types	Perspective on SP	SP Instrument
Upton et al ⁸⁵	2015	United Kingdom	Mixed methods: cohort	49	$\bar{x} = 75.34 \pm 10.31$, range: 50 to 94	VLU, DFU, unspecified ulcer	Distinct construct	5-point Likert scale single item on social isolation
Wise ²⁶	1986	United Kingdom	Mixed methods: cross-sectional	10	Retirement age	LU	Distinct construct	Townsend's Scale
Wissing et al ⁷⁸	2002	Sweden	Quantitative: comparative cross-sectional	144 (LU: 70 controls: 74)	Ulcer men: $\bar{x} = 79 \pm 7$, ulcer women: $\bar{x} = 80 \pm 3$, controls men: $\bar{x} = 80 \pm 6.5$, controls women: $\bar{x} = 80 \pm 5.4$	LU	Aspect of <i>life situation</i>	PGC MAI
Yildiz and Asti ⁷⁹	2015	Turkey	Quantitative: cross-sectional	128	10.2%: 18 to 30; 81.3%: 31 to 50; 8.6%: >50	DFU	Distinct construct	MSPSS

Note: */[†], articles reporting the same study.

Abbreviations: \bar{x} , mean; ALU, arterial leg ulcers; COPE, multidimensional measure of strategies used for coping; DFU, diabetic foot ulcers; HRQoL, health-related quality of life; ISSB, Inventory of Socially Supportive Behaviour; IVDU, intra-venous drug user; LU, any leg ulcers; MLU, mixed leg ulcers; MOS-SSS, Medical Outcomes Study Social Support Survey; MSPSS, Multidimensional Scale of Perceived Social Support; NHP, Nottingham Health Profile; PAIS-SR, Psychosocial Adjustment to Illness Scale—Self-Report; PGC-MAI, Philadelphia Geriatric Center Multilevel Assessment Instrument; SSQ, Social Support Questionnaire; SSQ-SF, Social Support Questionnaire short form; UCLA, University of California, Los Angeles; VLU, venous leg ulcers.

TABLE 2 Information on social support as reported by studies differentiated by ulcer type

Social support (n = 20) Types Studies	Venous leg ulcer n = 6 ^{53,54,65,66,76,83}	Any leg ulcer n = 1 ⁷⁵	Diabetic foot ulcer n = 6 ^{83,81,64,65,71,79}	Pressure ulcer n = 3 ^{7,67,68}	Other disease-caused ulcer n = 1 ⁵¹	Mixed sample n = 3 ^{52,58,84}
General aspects	<ul style="list-style-type: none"> Number of social contacts per item (esp. emotional support); Average: 1.4 Total range: 0–36 Mentioned contacts per item (esp. emotional support): family members, neighbours, nurses, GP, social workers, home help, God Overall high satisfaction with social support; average: 5.4 (score range: 0–6) Important to talk about problems Moments existing when patients do not want to talk in order not to burden another person 	<i>n.a.</i>	<ul style="list-style-type: none"> Very different stories (family and friends as burden or lacking support versus vast number of strong relationships) Transport frequently mentioned as instrumental support Occasions described where financial support was needed Providing reciprocal support (sometimes wound/treatment restricts to provide support) Reluctant to talk about social support; if so they talked about general support not disease-specific Many internalise some of their thoughts 	<i>n.a.</i>	<i>n.a.</i>	<ul style="list-style-type: none"> Some patients felt need to receive care but did not receive it Patients felt receiving 36% of possible support Most frequent received support: emotional support; second most: tangible support; least: guidance support Social network doing wound care and providing psychological help
Informal providers	<p>(esp. those of closest relations, daughter, son, daughter-in-law, granddaughter):</p> <ul style="list-style-type: none"> Doing first aid/wound care Consulted for decisions about provider/treatment Accompanying to physician Helping with housework (eg, laundry) Doing errands and excursions Emotional support 	<i>n.a.</i>	<p>(esp. spouse/partner, daughter):</p> <ul style="list-style-type: none"> Undertaking dressing Reminding to take analgesia Performing housework Patients express wish not to interfere children's life and burden them>Main source of social support: 86.7% family 10.0% friends 	<p>(esp. spouse/partner, child):</p> <ul style="list-style-type: none"> Undertaking dressings Anxiety of partner reported while doing dressings Providing social interaction (highly appreciated by patients) Patients are aware of extra workload on family 	<p>(esp. wife, family carer):</p> <ul style="list-style-type: none"> Doing wound care Patients see family carer as expert (knowing where it would hurt, how to dress/wash) 	<p>(esp. family nucleus, wife):</p> <ul style="list-style-type: none"> Doing wound care Washing/drying bandages Preparing food

(Continues)

TABLE 2 (Continued)

Social support (n = 20) Types Studies	Venous leg ulcer n = 6 ^{25,54,65,66,76,83}	Any leg ulcer n = 1 ⁷⁵	Diabetic foot ulcer n = 6 ^{83,61,64,66,71,79}	Pressure ulcer n = 3 ^{57,67,68}	Other disease-caused ulcer n = 1 ⁵¹	Mixed sample n = 3 ^{52,58,84}
<ul style="list-style-type: none"> Support intensified over process of living with condition Expecting care from formerly cared for relative Exerting control/protecting and imposing rules/treating patient like a child Patients doing all by themselves due to absence of family or not wanting to bother family <p>Friends/neighbours:</p> <ul style="list-style-type: none"> Emotional support Material support Service Help in searching provider Providing transport <p>Colleagues:</p> <ul style="list-style-type: none"> Fetching patient by car 			<ul style="list-style-type: none"> 6.7% church/associations 3.3% boss/colleague 	<ul style="list-style-type: none"> Patients note that life would have been worse without families <p>Friends:</p> <ul style="list-style-type: none"> Support and social interaction (highly appreciated by patients) 		
Formal providers	<ul style="list-style-type: none"> Healthcare team provide major help Help intensifies over process of living with condition Relationship with healthcare team may be considered friendship/kinship Unique relationship with nurse 	<i>n.a.</i>	<p><i>Main source of social support:</i></p> <ul style="list-style-type: none"> 26.7% health professionals 	<i>n.a.</i>	<ul style="list-style-type: none"> Preferring formal carers <i>n.a.</i> to avoid awkward situations with family members 	

TABLE 2 (Continued)

Social support (n = 20) Types Studies	Any leg ulcer n = 1 ⁷⁵	Diabetic foot ulcer n = 6 ^{53,61,64,65,71,79}	Pressure ulcer n = 3 ^{57,67,68}	Other disease-caused ulcer n = 1 ⁵¹	Mixed sample n = 3 ^{52,58,84}
<p>Available support:</p> <ul style="list-style-type: none"> • Women more than men ($P = .06$) • Women more than men at entry and exit of study (seen in all age groups) • No sig. difference between younger (<70 years) and older patients ($P = .16$) • Patients living with other people more than patients living alone ($P = .042$) <p>Satisfaction with support:</p> <ul style="list-style-type: none"> • Women more than men (but $P = .22$) • Younger (<70 years) more than older (≥ 70 years) ($P = .042$) • Living with other people more than living alone ($P < .001$) • Healed patients more than non-healed patients at exit of study 	<p>Total social support:</p> <ul style="list-style-type: none"> • Reduced in cases compared to controls ($P = .008$) <p>Forms of social support:</p> <ul style="list-style-type: none"> • Reduced in cases compared to controls: positive interaction ($P = .002$); tangible ($P = .017$); emotional/informational ($P = .028$); affectionate ($P = .055$) <p>Social coping strategies:</p> <ul style="list-style-type: none"> • More often used by controls than cases: seeking instrumental support ($P < .001$), seeking emotional support ($P = .001$) 	<p>Perceived social support:</p> <ul style="list-style-type: none"> • No sig. differences regarding age, formal education, gender, marital status, diagnosis, systolic/diastolic blood pressure, BMI, treatment • Association with fasting plasma glucose ($P = .02$) <p>Total, family, significant other support:</p> <ul style="list-style-type: none"> • Higher when shorter disease duration (0–10 years) compared to longer (>10 years) <p>Total, family, friends, significant other support:</p> <ul style="list-style-type: none"> • All scales negatively correlated with Beck Depression Inventory 	<p>Received support:</p> <ul style="list-style-type: none"> • No statistical difference between patients with leg ulcers and diabetic foot ulcers 	n.a.	n.a.

Abbreviations: BMI, body mass index; GP, general practitioner; n, sample size; n.a., no information available.

TABLE 3 Information on social connections as reported by studies differentiated by ulcer type

Social connections (n = 25)							
Type Studies	Venous leg ulcer n = 6 ^{50,55,59,62,69,82}	Any leg ulcer n = 9 ^{26,60,72-75,80,81}	Diabetic foot ulcer n = 3 ^{70,71,77}	Pressure ulcer n = 3 ^{30,57,68}	Other disease-caused ulcer n = 1 ³¹	Unspecified ulcer n = 1 ³²	Mixed sample n = 2 ^{52,85}
Frequency	<ul style="list-style-type: none"> IVDU and non-IVDU report restrictions in interactions One fourth describe contact with significant other One fourth describe close relationship with nurse One fourth admit feeling lonely 14% reporting lowest value in friends' interaction scale 	<ul style="list-style-type: none"> Social contact score ranging from 12 to 52 For one woman the nurse was the only contact 	<ul style="list-style-type: none"> Social network consisting of three persons on average (ranging from 1 to 10) 87% of participants were classified as having poor social interaction 	<i>n.a.</i>	<i>n.a.</i>	<ul style="list-style-type: none"> One patient staying in chat rooms (internet) for hours while being house bound 	<ul style="list-style-type: none"> Characteristics of social network: small amplitude, few relationships, low density Social network composed entirely by relatives, sisters, children, wife
Experience	<ul style="list-style-type: none"> Absence of close family network were not influencing feelings of isolation Contact with nurse being positive aspect of disease Feeling of being listened to resulting in attachment to nurse Varying levels of social connectedness Feeling socially disconnected: being inside, looking out Not able to join activities in 	<ul style="list-style-type: none"> Looking forward to nurses, as they are the only contact Socially isolated old people making greater demands upon health and social services 	<i>n.a.</i>	<ul style="list-style-type: none"> Varying severity of social isolation Staying in the room (even for meals); hospitalisation; bed rest One patient staying inside for eight months, admitting having no (social) life 	<ul style="list-style-type: none"> Strong tendency to self-isolation 	<ul style="list-style-type: none"> Experiencing cabin fever 	<ul style="list-style-type: none"> 51.1% of patients state that social situation improved through Leg Club Social isolation being relieved due to Leg Club Majority feels talked to in Leg Club compared to at a clinic

TABLE 3 (Continued)

Social connections (n = 25)							
Type Studies	Venous leg ulcer n = 6 ^{50,55,59,62,69,82}	Any leg ulcer n = 9 ^{26,60,72-75,80,81}	Diabetic foot ulcer n = 3 ^{70,71,77}	Pressure ulcer n = 3 ^{30,57,68}	Other disease-caused ulcer n = 1 ³¹	Unspecified ulcer n = 1 ³²	Mixed sample n = 2 ^{52,85}
	sheltered houses or to go downstairs						
	<ul style="list-style-type: none"> Restrictions in sexuality and finding a partner Psychosocial adjustment impaired regarding vocational environment, social environment, extended family relationships, less regarding sexual relationships 						
Causes	<ul style="list-style-type: none"> Ulcer major contributor to social isolation but also difficulties determining degree of social restrictions directly caused by leg ulcer Poor mobility (attributed to ulcer and bandages despite co-morbidities) Treatment regimens affecting ability to socialise (eg, inconvenience of dressings, time schedule) 	<ul style="list-style-type: none"> Age and chronicity of ulcer combined with physical limitations 	<i>n.a.</i>	<ul style="list-style-type: none"> Being bed-bound Restrictions caused by dressings 	<ul style="list-style-type: none"> Odour Low self-esteem resulting from wound Pain Fear of reappearance 	<ul style="list-style-type: none"> 60% not able to get out Sitting in wheelchair due to ulcer Fear of infections Staying on specific mattress Immobility caused by wound Pain when walking 	<i>n.a.</i>

(Continues)

TABLE 3 (Continued)

Social connections (n = 25)

Type Studies	Venous leg ulcer n = 6 ^{50,55,59,62,69,82}	Any leg ulcer n = 9 ^{26,60,72,75,80,81}	Diabetic foot ulcer n = 3 ^{70,71,77}	Pressure ulcer n = 3 ^{30,57,68}	Other disease-caused ulcer n = 1 ³¹	Unspecified ulcer n = 1 ³²	Mixed sample n = 2 ^{52,85}	
	<ul style="list-style-type: none"> • Fear of getting legs knocked affects social lives • Fear of others smelling ulcer or seeing leakage 							
Group differences	<p>Social isolation:</p> <ul style="list-style-type: none"> • IVDU more than non-IVDU • Current IVDU more severe feelings of social isolation • IVDU lamented lack of social life and friends at any age • Age-caused social isolation reinforced by leg ulcers in non-IVDU 	<p>Number of contacts:</p> <ul style="list-style-type: none"> • Cases less than controls ($P = .008$) • Patients with recurring ulcers reporting lowest scores <p>Social interaction:</p> <ul style="list-style-type: none"> • Cases lower 'friends' interaction than controls ($P = .001$), less confidants than controls ($P < .01$), less friends/neighbours to help for short time ($P < .01$) 	<p>Social interaction:</p> <ul style="list-style-type: none"> • Worse in patients with higher odour scores ($P = .009$), with higher stress levels ($P = .005$), and worse overall psychological status ($P = .010$) • No sig. difference regarding gender, mobilisation, age, wound age, BMI, wound degree, pain, shame, anxiety, depression <p>Adjustment to illness:</p> <ul style="list-style-type: none"> • Cases higher disturbances regarding sexual relationship ($P < .001$) and social environment ($P < .001$) than controls • No sig. differences regarding extended 	<p>Social isolation:</p> <p>Greater isolation for patients being hospitalised at distance from home</p>	<p>Perceived social situation:</p> <ul style="list-style-type: none"> • Higher concerns about social situation in patients with more wound worries ($P = .001$), worse well-being ($P = .001$), and less personal resources ($P = .01$) • No significant correlation with months spent at the Leg Club ($P = .25$), and wound duration ($P = .12$) 	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>
Social isolation and loneliness:								

TABLE 3 (Continued)

Social connections (n = 25)							
Type Studies	Venous leg ulcer n = 6 ^{50,55,59,62,69,82}	Any leg ulcer n = 9 ^{26,60,72-75,80,81}	Diabetic foot ulcer n = 3 ^{70,71,77}	Pressure ulcer n = 3 ^{30,57,68}	Other disease-caused ulcer n = 1 ³¹	Unspecified ulcer n = 1 ³²	Mixed sample n = 2 ^{52,85}
	<ul style="list-style-type: none"> • No sig. difference between cases and controls • Ulcer patients similar to controls, both less than psoriasis patients • Cases more than controls ($P = .029$) or age-/sex-matched normal scores ($P = .001$) • For ulcer, psoriasis, controls: women more than men • Women more than men ($P = .048$) • $P = .046$; difference from sex-matched normal scores higher in men than in women ($P < .001$) • Higher levels in older patients ($P = .044$); differences from age-matched normal scores higher in younger age groups ($P < .001$) • Associated with size >10cm² ($P = .032$) and duration >36 months ($P = .008$) 						

(Continues)

TABLE 3 (Continued)

Social connections (n = 25)							
Type Studies	Venous leg ulcer n = 6 ^{50,55,59,62,69,82}	Any leg ulcer n = 9 ^{26,60,72-75,80,81}	Diabetic foot ulcer n = 3 ^{70,71,77}	Pressure ulcer n = 3 ^{30,57,68}	Other disease-caused ulcer n = 1 ³¹	Unspecified ulcer n = 1 ³²	Mixed sample n = 2 ^{52,85}
	<ul style="list-style-type: none"> No sig. association with arterial status, varicose veins, deep vein thrombosis, diabetes, vein surgery, social class, employment, care provider 						

Abbreviations: BMI, body mass index; IVDU, intravenous drug users; n, sample size; n.a., no information available.

criteria. The number of fulfilled criteria ranged from one to nine in qualitative studies. Most of the qualitative studies lacked a discussion of the relationship between researcher and participants.

3.3 | Social support

In 20 studies including patients with VLU,^{25,54,63,66,76,83} LU,⁷⁵ DFU,^{53,61,64,65,71,79} PU,^{57,67,68} other disease-caused ulcers,⁵¹ and different ulcer types,^{52,58,84} aspects of social support were reported (Table 2). Patients' experiences were similar across these ulcer types. Family members represented the main resource for social support, providing direct and indirect wound care as well as emotional support. Friends, neighbours, and colleagues most often provided emotional support, social interaction, and transport.^{31,51-55,57,58,63,65-68,71} Despite these overall positive impacts of family and friends, results varied across individuals and sometimes patients were not able to receive the support they wished for⁵² or patients deliberately avoided asking for help in order not to burden others.⁵³

3.4 | Social connections

In 25 studies, in which all ulcer types were represented,^{26,30-32,50,52,55,59,60,62,68-75,77,78,80-82,85} aspects of social connections were reported (Table 3). No considerable differences between ulcer types were found. The number of people with whom patients had social connections varied within studies. Besides psychological aspects (eg, stress, worries) being negatively correlated with social connections, wound odour was the only clinical variable indicating fewer social connections.^{77,85} The number of social connections was also lower in comparison with healthy controls,^{75,78} particularly regarding extra-family relations. Restrictions in sexuality and finding a partner were also reported.^{55,62,70}

Both direct consequences of chronic wounds (eg, being immobile, being bed-bound, sitting in a wheelchair, having pain when walking)^{30,32,50,57,60,68} and indirect consequences (eg, fearing that others could smell wound odour or see leakage)^{31,32,50,59} were associated with social isolation, which is an extreme manifestation of reduced social connections. However, results were inconsistent as to whether social isolation is significantly more frequent in patients with chronic wounds than in controls.^{72,74} One study found upward deviations from norm values across all patients, with larger deviations from the respective norm value in men and younger patients.⁸⁰

TABLE 4 Information on (informal) social participation as reported by studies differentiated by ulcer type

(Informal) social participation (n = 17)		Leg ulcer (unspecified)	Diabetic foot ulcer	Pressure ulcer	Other disease-caused ulcer	Unspecified ulcer	Mixed sample
Type	Studies	n = 1 ⁷⁸	n = 2 ^{53,65}	n = 2 ^{30,67}	n = 2 ^{51,56}	n = 1 ³²	n = 2 ^{58,85}
Restricted activities	<ul style="list-style-type: none"> • Work (work, university, retiring) • Social activities (visiting family member, activities where bandage would be visible, remaining indoors) • Leisure activities (fishing, dancing, part, playing football, running, walking) • Travel (sightseeing, holiday away from home) 	<ul style="list-style-type: none"> • More common to give up activities for cases than for controls: voluntary work, outdoor activities, spectator activities (each $P < .001$), attending church ($P < .01$), playing cards ($P < .05$) 	<ul style="list-style-type: none"> • Leisure activities (hobbies, formerly enjoyed activities, recreational activities) • Travel (vacations) • Everyday activities (household maintenance activities) 	<ul style="list-style-type: none"> • Leisure activities (preferred activities, exercising) 	<ul style="list-style-type: none"> • Work (ceasing work, retiring, prolonged travel to work, problems managing active job) • Social activities (cancelled plans/trips with friends, social events, avoiding activities) • Leisure activities (walking, dancing, gardening, badminton, shopping, swimming) • Travel (affected holidays with walking/swimming) 	<ul style="list-style-type: none"> • Work (going to church and grocery store) 	<ul style="list-style-type: none"> • Leisure activities (sports) • Everyday activities (going to church and activities (tending pets))
Continued/uptaken activities	<ul style="list-style-type: none"> • Partly very active social life reported 	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<ul style="list-style-type: none"> • Able to manage desk job 	<i>n.a.</i>	<ul style="list-style-type: none"> • Enjoying Leg Club and engaging in its structured activities
Causes	<ul style="list-style-type: none"> • Difficult/impossible to wear shoes or dress properly • (Expected) inefficiency of treatment • Pain • Odour • Lack of sleep • Restricted mobility 	<i>n.a.</i>	<ul style="list-style-type: none"> • Less time/stressful days due to increased time for foot care • Restricted mobility 	<ul style="list-style-type: none"> • Shame and embarrassment caused by odour • Sense of not being able to enjoy 	<ul style="list-style-type: none"> • Unable to activities with weight bearing • Necessity to keep ulcer dry • Pain • Reduced enjoyment • Restriction in choice of shoe and 	<i>n.a.</i>	<i>n.a.</i>

(Continues)

TABLE 4 (Continued)

(Informal) social participation (n = 17)						
Type	Venous leg ulcer	Leg ulcer (unspecified)	Diabetic foot ulcer	Pressure ulcer	Other disease-caused ulcer	Unspecified Mixed sample
Studies	n = 7 ^{54,55,59,62,63,66,86}	n = 1 ⁷⁸	n = 2 ^{53,65}	n = 2 ^{30,67}	n = 2 ^{51,56}	n = 1 ³² n = 2 ^{58,85}
Impact	<ul style="list-style-type: none"> • Changes in personality traits (becoming introverted, low mood, depressive symptoms) • Frequent dressings • Discomfort due to/unattractiveness of bandage 	n.a.	<ul style="list-style-type: none"> • Shrinking of social circle • Guilt about friends needing to change activities 	<ul style="list-style-type: none"> • Become an inactive person 	n.a.	<ul style="list-style-type: none"> • Indigenous patient no longer accepted in community

Abbreviations: n, sample size; n.a., no information available.

TABLE 5 Information on social cohesion as reported by studies differentiated by ulcer type

Social cohesion (n = 11)					
Type Studies	Venous leg ulcer n = 3 ^{59,63,86}	Diabetic foot ulcer n = 2 ^{53,65}	Pressure ulcer n = 1 ⁶⁷	Other disease-caused ulcer n = 2 ^{31,51}	Mixed sample n = 3 ^{52,58,85}
Relationship with family and friends	<ul style="list-style-type: none"> • Good relationship with family members • Many live together with spouse or in same house as child 	<i>n.a.</i>	<i>n.a.</i>	<ul style="list-style-type: none"> • Strong view on friendships and selected appropriate friends • True friends perceived as having understanding and being non-judgmental 	<ul style="list-style-type: none"> • A stable bond with esp. family members can both help patient managing and inhibit self-care • Fragility in affective bonds • Partner of indigenous patient refused to sleep in same bed and partner's rejection of ulcer treatment leading to confrontations
Impact on family and friends	<ul style="list-style-type: none"> • Many felt family affected • Some felt guilty leaving housework to partner or being dependent on them for self-care 	<ul style="list-style-type: none"> • Felt putting burden on family and impacting relationships • Emotional tension and strain due to ulcer and diabetes transferred into relationship with family (esp. spouse) 	<ul style="list-style-type: none"> • Patient imagining that odour was most severe when other people are around • Anxiety about family members and burden that ulcers puts on them and the worry it causes • Restrictions of patient bring restrictions to others 	<ul style="list-style-type: none"> • Sadness that pain bothers others • Avoiding talking with family about pain, only with mother when pain is unbearable 	<i>n.a.</i>
Relationship with formal carers	<ul style="list-style-type: none"> • Continuity in nurse leading to close relationship, sometimes describes as <i>mother-daughter relationship</i> or <i>close friendship</i> • Patient with inconsistencies of care report no relationship with nurses at all (even not knowing name) 	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>	<i>n.a.</i>

Abbreviations: n, sample size; n.a., no information available.

3.5 | Informal/formal social participation

Across all types of chronic wounds, 17 studies^{25,30,32,51,53,55,56,58,59,62,63,65-67,78,85,86} report restrictions with regard to work life, social activities, leisure activities, everyday activities, and travelling (Table 4). One study comparing ulcer patients and controls found significant differences in the frequency of activity cessation.⁷⁸ Causes for restrictions in activities were similar across

ulcer types, such as immobility caused by the ulcer, inability to wear appropriate clothing, and restricted time due to increased effort put in wound care or appointments with formal care providers.^{30,53,54,56,58,59,62,63,67,86} Also, psychological impacts of the wound hindered patients to participate socially as patients were ashamed, were not able to enjoy formerly enjoyed activities, or behaved more introverted because of their ulcer.^{30,53,56,58,59,62,66,86} These restrictions could lead to financial problems, diminishing social networks or

feelings of guilt because the patients' burden led to restrictions for others. Nevertheless, some patients reported to maintain their active social life or their desk jobs.^{56,59} The only reported newly uptaken activities were those offered by a Leg Club.⁸⁵

3.6 | Social cohesion

Eleven studies reported on social cohesion (Table 5) including patients with VLU,^{59,63,86} DFU,^{53,65} PU,⁶⁷ other disease-caused ulcers,^{31,51} and different ulcer types.^{52,58,85} In all ulcer types, patients reported feelings of guilt, anxiety, or sadness because of the burden that they felt was loaded onto family members or friends due to the patients' restrictions. Patients stated that their personal tension was transferred to the family, that they avoided talking to others about their issues, or that personal bonds became fragile.^{31,52,53,58,65,67,86} However, several studies also highlight patients' strong relationships with both family members and friends, which help managing self-care and having a safe environment with non-judgemental people around.^{51,58,63} Moreover, VLU patients also describe a strong relationship with their nurses; however, this was only the case when there was consistency in the person providing care.⁵⁹

4 | DISCUSSION

The aim of this systematic review was to analyse social participation in patients with chronic wounds and to compare results across different ulcer types. For this, the model of the effect of social participation on health¹⁶ was used, and thus, results assigned to social support, social connections, informal/formal social participation, and social cohesion. Most of the included studies focused on social connections and social support. The most frequently studied patient groups were VLU patients, followed by patients with any LU (probably also including a large share of patients with VLU), DFU, and PU. This corresponds to the actual prevalence of wound types with most chronic wounds being chronic leg ulcers,⁶ and the greatest share of chronic wounds being venous aetiology.⁹²

This review reveals that no considerable differences have been found in the social participation of patients with different types of ulcers. Consistent results across the studies were that the main source of social contact was the family, who also provided wound care and relieved the patients from housework activities. Relationships with family members and friends were often close,

but patients also feared to bother others. Patients often had to quit or rearrange previously conducted activities and only few reported newly uptaken activities. Accordingly, direct and indirect consequences of the chronic wound led to reduced social interactions and partly even caused social isolation. An inconsistent picture was seen regarding which sociodemographic, clinical, or psychological characteristics are associated with patients' social participation.

The importance of family members and spouses found in the included studies aligns with previous findings stating that family members and spouses are important caregivers and care coordinators for patients with various diseases (eg, stroke, musculoskeletal diseases, depression).⁹³ In their role as caregivers, relatives can facilitate patient-centred care.⁹⁴ However, the great share of care provided by informal caregivers can also lead to high burden for relatives.⁹⁵ Therefore, it is important not to overlook this specific target group and to provide interventions to provide help, which has already shown positive effects for informal caregivers of patients with dementia and cancer.⁹⁶

The fact that only a small number of extrafamilial relationships was detected, but that those existing were often close and of non-judgemental nature, emphasises the importance to study not only the quantity of social contacts. Accordingly, Victor et al⁹⁷ reasoned that in the general population of older adults, the number of social contacts alone does not explain feelings of loneliness but that the individuals' experiences and understandings need to be investigated qualitatively. Despite the close relationships reported in the articles, some patients expressed a tendency to avoid bothering others. Together with direct consequences of the wound (eg, exudate, odour, pain, immobility, time-consuming treatment), this may lead to restrictions in various activities as well as withdrawal from social interaction, and hence promote the risk of self-isolation and feelings of loneliness.

Besides family and friends, the unique relationship with professional healthcare providers (especially nurses) needs to be acknowledged. This relationship can go beyond the provision of wound care and become a resource of emotional support. For such a relationship to develop, it needs continuity in care and a collaborative relation between patient and provider. Additionally, continuity in and confidence with professional care may prevent patients from terminating professional care and from starting self-treatment. One third of self-treating wound patients were found to do so⁹⁸ (eg, for reasons of unavailability of the familiar care provider, differing ideas about the treatment across different care providers, inconvenience of

professional care). Other reasons for self-treatment were the wish to be independent, the wish to conduct treatment at the desired time, or the costs caused by professional care. At the same time, this study⁹⁸ found that few patients were educated or trained for self-treatment, and that debridement was rarely conducted in self-performed wound care. This calls for a well-designed educational programme for self-treating patients. The same accounts for informal caregivers, who often bear a large share of the wound care, but may still lack important knowledge and skills required for providing safe care.⁹⁹ On the contrary, a close relation to the nurse may also lead to the phenomenon of *social ulcers*.²⁶ This describes the patient's wish of the wound not to heal in order to maintain the social contact with the care provider and is probably particularly relevant for the patients with the lowest number of social contacts.

The major strength of this review is that, to our knowledge, it is the first study comparing social participation of patients across different types of chronic wounds. Based on the current state of research, no differences between types of chronic wounds could be detected regarding any aspect of social participation. Nevertheless, some limitations should be considered. To make results comparable, we assigned the content of each article to dimensions as used in the model of Douglas et al,¹⁶ irrespective of the actual wording in the article. This model focuses on older adults and, hence, does not consider the working situation, which might be an important source of social participation for younger people. We, therefore, assigned findings on the working situation to the aspect of (informal) social participation. Furthermore, the number of eligible articles differs with regard to the wound type and the aspect of social participation, which may limit the explanatory power. Additionally, the search revealed a mostly moderate methodological quality, especially in quantitative studies. Also, a large share of the relevant articles presents data from studies conducted in the United Kingdom. A reason for this might be the academisation of nursing, which is more advanced in the United Kingdom than in other countries.¹⁰⁰

Considering the positive effect social participation has on the individual's health, particularly older people,¹⁰¹⁻¹⁰³ it should receive more attention in clinical practice and public health. This includes the assessment of social support and the possibility to engage in social interactions as part of clinical care. For routine assessments in clinical care, a validated, short, and feasible, yet sufficiently comprehensive questionnaire would be needed.

A possibility to enhance social participation in patients with chronic wounds would be to strengthen the concept of Leg Clubs. Especially regarding patients' social

interactions, Leg Clubs have shown positive impacts.¹⁰⁴ It might be promising to open the concept also for patients with other chronic wound aetiologies because patients' experiences barely differ, as found in this review. Following the approach in the United Kingdom, Leg Clubs have already been initiated in Australia and Germany.⁸⁸ However, differences between healthcare systems might impair the transferability of this concept.¹⁰⁴ For example, one Leg Club, which has been initiated in the German city of Munich, is located in a general practitioner's office and requires the physician to prescribe treatment; the project is based on the engagement of volunteers as it is not funded by German sick funds.¹⁰⁵

In routine care, social participation should receive increased attention both as a trigger of burden and as an outcome of therapy. For this, the patients' individual goal setting should be recognised and targeted with an individual treatment plan. One way to assess treatment goals of patients with chronic wounds is to use the Patient Benefit Index,¹⁰⁶ which also covers aspects of patients' social life.

This review revealed a high number of qualitative studies. Quantitative studies were not only less numerous but also of moderate quality only. In future research, emphasis should be placed on high-quality quantitative studies that include control groups of people without wounds. Nevertheless, the assessment of social participation should not be restricted to counting contacts and activities but should also consider the patients' perception of and confidence with aspects of their social lives, rather calling for mixed-methods studies. Following the finding that social participation is similar across different types of wounds, studies do not need to be restricted on one single wound aetiology but may investigate the social participation of different patients with diverse aetiologies simultaneously.

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DATA AVAILABILITY STATEMENT

The data are available on reasonable request from the corresponding author.

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SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of this article.

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