

Contribution of the Leg Club model of care to the well-being of people living with chronic wounds

- **Objective:** Social support impacts well-being. Higher levels of social support encourage treatment adherence and aid healing in people living with chronic wounds. The Leg Club model of care harnesses social support mechanisms to improve patient outcomes. This study investigated whether social support mechanisms available through a Leg Club environment influenced well-being.
- **Method:** Participants were community Leg Club members. Socio-demographic data was collected, and the Well-being in Wounds Inventory (WOWI) administered to assess 'wound worries,' 'personal resources,' and 'well-being'. Participants' perceived social situation, length of time attending a Leg Club, wound duration, and feelings about their physical appearance were also measured.
- **Results:** The subjects recruited (n=49) were aged between 50 and 94 years (mean=75.34, standard deviation=10.31). Membership of a Leg Club did impact well-being factors. Time spent at a Leg Club improved 'personal resources' over time. 'Perceived social situation' predicted key aspects of well-being, as did 'time spent attending a Leg Club' and 'feelings about physical appearance.' Social support and relief from social isolation were important aspects of Leg Club membership for participants.
- **Conclusion:** Attending a Leg Club enhances well-being in people living with a chronic wound; social support has an important role to play in this relationship. Future research should consider the specific interplay of social support mechanisms of Leg Club, and other relevant wound-related variables to optimise patient well-being and treatment outcomes.
- **Declaration of interest:** The Urgo Foundation funded this project. The authors have no conflicts of interest to declare.

social support; well-being; wounds; Leg Club; WOWI

It is well-established that people living with chronic ulceration experience unique physical and psychosocial disadvantages.^{1,2} Recurring pain, associated poor mobility and sleep deprivation, as well as malodour and exudate at the wound site, have all been reported as having a detrimental impact on health and well-being.³⁻⁵ Social isolation, negative emotion, depression and anxiety have also been described as impacting adversely on patients with chronic wounds.^{6,7} In recent years, there has been a call for research into the well-being of people with chronic wounds.⁸ Well-being encompasses positive emotions, life satisfaction, coping skills, optimism and hope for the future, and it could be considered these positive resources are manifest to protect the individual from the negative consequences of the wound.⁶ Patient well-being has the potential to impact treatment adherence, wound healing and improve patient outcomes.^{7,9}

An important contributor to well-being is social support, which has been linked to both mental and physical health.¹⁰⁻¹² Social support has been defined as 'emotional, informational or practical assistance

from significant others, such as family members, friends or co-workers'.¹³ Social support may also come from professional sources, such as health professionals.¹⁰ Both the number of support sources and the perceived availability and quality of support are important.¹⁴ Poor social support has been associated with increased morbidity and mortality.¹⁵⁻¹⁷ Previous research has indicated that people with low levels of social support have higher mortality rates from cardiovascular disease;¹⁸⁻²⁰ cancer;²¹ and infectious diseases, such as HIV-AIDS.²² Low levels of social support have also been linked to delayed recovery from health conditions such as: cardiovascular disease, atherosclerosis, cancer recovery and general wound healing.^{20,23,24} Within chronic wound care literature, patients with low levels of social support had higher wound recurrence and delayed healing rates.^{9,25,26}

One significant mechanism at play is the relationship between low social support and increased physiological^{27,28} and psychological stress.¹¹ People living with chronic wounds experience increased social isolation as a result of mobility issues and negative

D. Upton, PhD, FBPSS, Associate Dean, Education;
P. Upton, CPsychol, AFBPsS, Senior Research Fellow;
R. Alexander, BScPsy (Hons), Research Assistant;
 All at the University of Canberra, ACT, 2601

Email: dominic.upton@canberra.edu.au

emotion, such as shame and embarrassment about malodour and exudate.^{3,6} Consequently, they socialise less, have fewer social contacts, lack social support, and are more vulnerable to stress.¹⁰ There is strong evidence of a relationship between stress and delayed wound healing.^{7,29–33} A vicious cycle is generated as high stress and social isolation combine to delay wound healing, leading to greater stress and isolation and poorer social support.⁷

Conversely, there is evidence that supportive social relationships can improve health and psychological well-being.¹⁶ Animal studies have shown that rates of wound healing are improved in socially facilitated animals compared with socially isolated animals.³⁴ Human studies in this field are limited; however, research into social support interventions have investigated the efficacy of Leg Clubs and found some evidence that this treatment model is advantageous to both adherence and wound healing rates.^{35,36}

The Lindsay Leg Club is one model of wound care that harnesses social support mechanisms improving patient outcomes. This treatment model provides holistic care and health information to people living with a chronic wound in a supportive, informal environment.^{37,38} The Leg Club is held at a community venue, such as a church or village hall, and is open access, with no appointment necessary. Members drop-in and are treated collectively by health professionals, while having the opportunity to share their experiences and learn more about how best to manage their wound.³⁹ The Lindsay Leg Club philosophy is based on increasing peer and social support in order to maximise treatment adherence and improve healing. Early research suggests that patients treated in such a 'Leg Club' environment show significantly improved wound healing, quality of life, morale, self-esteem, pain, and functional ability compared to patients treated at home by community nurses.^{35,36} However, evidence is scant and the contribution of 'Leg Club' attendance to an individual's well-being has yet to be established. A study was therefore undertaken to evaluate the impact of Leg Club attendance on individual well-being. Specifically the study aimed to:

- Assess the impact of Leg Club attendance on individual well-being over time
- Identify the contribution of Leg Club attendance and other physical and psychosocial wound-related factors to well-being
- Explore individual perceptions of how Leg Club impacts on the experience of living with a wound.

Method

Design and sample

The study was conducted as a multi-method survey, with a fixed-response questionnaire, plus closed and open-ended interview questions. The questionnaire was administered at two time points to enable chang-

es in well-being over time to be assessed. The convenience sample for this study was drawn from community Leg Clubs across seven localities in the UK.

Well-being in Wounds Inventory

The Well-being in Wounds Inventory (WOWI) measures aspects of well-being in people living with chronic wounds. Brief statements are measured on five-point bipolar scales (1=strongly agree to 5=strongly disagree) and indicate the degree to which each statement reflects an individual's personal experience. The WOWI taps issues affecting patient well-being (for example, concerns about wound pain, appearance, treatment) and negative emotions connected with having a wound (for example, anxiety, stress, depression). The questionnaire also measures positive emotions and strength-based resources (for example social support, life satisfaction, hope for the future, coping skills).

The WOWI results in an overall 'well-being' (WB) score, which encompasses scores from two subscales: 'wound worries' (WW) describes concerns and negative emotions associated with having a chronic wound, and 'personal resources' (PR) encapsulates social support, capacity for positive emotions, personal qualities like optimism, resilience, hope, and coping skills. The WOWI has been assessed as a highly feasible instrument, with good test-retest reliability (WW ICC(1,1)=0.79; PR ICC(1,1)=0.83; WB ICC(1,1)=0.84). Additionally, the WW subscale was highly responsive to change over time ($R_2=0.78$), and the overall WB scale moderately responsive ($R_2=0.31$).³⁹

Interview schedule

During a brief interview, participants' were asked about their perceptions of their social situation, the duration of time they had their wound, the amount of time spent attending a Leg Club, and their feelings about the physical appearance of their wound. Participants responded to these questions using a Likert-type scale (1=serious issues/concerns to 5=no problems/concerns). Finally, participants were asked to reflect freely on what the Leg Club experience meant to them.

Procedure

Community Leg Clubs were approached to facilitate introductions with members of selected groups. The researchers met with each community group and provided Leg Club members with information outlining the purpose and content of the study. Written consent was provided by those agreeing to participate. On the initial visit, participants completed a series of demographic questions, all sections of the WOWI and a short interview about their Leg Club experiences. Researchers returned to Leg Clubs at least six weeks later to readminister the WOWI.

Table 1. Personal resources scores, mean and standard deviations (SD) at timepoints 1 and 2

Length of time attended Leg Club	Time 1 mean (SD)	Time 2 mean (SD)	n
up to a year	70.1 (21.0)	77.3 (15.3)	18
1–2 years	75.6 (19.7)	78.4 (8.08) [†]	11
over 2 years	83.1 (8.78)	85.9 (8.89)	20

[†]difference in means significant at $p < 0.01$

Table 2. Spearman's correlations (r_s) between WOWI scales and wound-related variables

	Wound worries	Personal resources	Well-being
Social situation	0.34 [‡]	0.42 [‡]	0.44 [‡]
Wound duration	0.29*	0.15	0.25
Time at Leg Club	0.28*	0.34 [‡]	0.34 [‡]
Physical appearance	0.37 [‡]	0.16	0.30*

*significant $p < 0.05$; [†]significant $p < 0.01$; [‡]significant $p < 0.001$

Statistical analysis

In this study, a multiple regression analysis was undertaken. This is a process for providing an estimation of the relationship between the variables collected. Hence, it explores the relationship between the dependent variable (in this study, WOWI measures of wound worries and personal resources) and more than one independent variable or predictor (in this study, the other variables collected).

Results

The sample consisted of 49 individuals, aged between 50 and 94 years (mean=75.34, standard deviation (SD)=10.31). Gender breakdown for this sample was 25 women ranging in age from 50 to 94 years (mean=76.24, SD=11.82), and 24 men aged between 58 and 93 years (mean=74.32, SD=8.44). Wound duration ranged from 1 month to 50 years, with average wound time in years being 7.33 (mean=7.33, SD=10.10). Wound treatment time varied from initial care (for example first visit to the Leg Club for wound care) to eight years. Mean treatment was 25.07 months (SD=21.54). The majority of individuals (80%) were receiving care for venous leg ulcer(s) (VLU), with the remaining 10 having either mixed aetiology or were unable to provide information on their condition.

Impact of Leg Club attendance on individual well-being over time

Repeated measures ANOVA identified an interaction between the number of months an individual had been attending a Leg Club and changes in scores for the WOWI subscale 'Personal resources' (PR) ($F(2,46)=3.82, p=0.03$; Table 1). However, no interac-

tion was detected for the other subscale 'Wound worries' (WW) ($F(2,46)=0.45, p=0.64$) or for the overall 'Well-being' scale (WB) ($F(2,46)=2.84, p=0.08$).

Contribution of wound-related factors to well-being

A number of key variables were measured to ascertain their association with WW, PR and WB. Variables of interest were: perceived social situation, wound duration, time spent attending a Leg Club, and feelings about physical appearance (Table 2).

• **Perceived Social Support** A moderate significant correlation was found between perceived social support and WW ($r_s=0.34, p=0.001$), PR ($r_s=0.42, p=0.01$) and overall WB ($r_s=0.44, p=0.001$). However, there was no significant correlation between perceived social situation and number of months spent at a Leg Club (Spearman's correlation (r_s)=0.01, $p=0.25$), or with wound duration ($r_s=-0.17, p=0.12$).

• **Wound duration** A significant, modest correlation was detected between wound duration and WW ($r_s=0.29, p=0.04$), but not between wound duration and PR ($r_s=0.15, p=0.31$) or overall WB ($r_s=0.25, p=0.07$). Of interest, the regression analysis also revealed a moderate significant correlation between wound duration (months) and Leg Club attendance ($r_s=0.34, p=0.01$).

• **Time attending a Leg Club** A significant, but modest correlation was found for time attending a Leg Club and WW ($r_s=0.28, p=0.03$). In addition, a significant moderate correlation was detected for time at a Leg Club and PR ($r_s=0.34, p=0.01$) and overall WB ($r_s=0.34, p=0.01$).

• **Physical appearance** A significant moderate correlation was found between how people felt about their physical appearance and WW ($r_s=0.37, p=0.01$), and a significant and modest relationship was detected between physical appearance and overall WB ($r_s=0.30, p=0.03$) though not for PR ($r_s=0.16, p=0.17$).

Predicting well-being

On the basis of the exploratory regression analyses above, further stepwise regression analyses were undertaken to determine the relationship between: individual well-being, wound duration, perceived social situation, time attending a Leg Club, and feelings about physical appearance. Regression models were assessed using the guidelines of Norman and Streiner (2008), which state that a model should explain at least 30% of total variance to be considered viable.⁴⁰

• **Regression model for WW** A stepwise regression analysis was undertaken using WW as the dependent variable. Perceived social situation, wound duration, time attending a Leg Club, and physical appearance were entered as predictor variables (Table 3). Social situation was a significant predictor

of WW ($t(35)=6.12, p=0.001$), and explained 45% of the variance in WW. Feelings about physical appearance was also a significant predictor ($t(35)=3.91, p=0.001$), explaining a further 18% of the variance. In addition, time spent attending a Leg Club was significant ($t(35) = 2.46, p=0.02$). Inclusion of this variable accounted for a further 6% of the variance. In all, the final regression model explained 69% of the total variance in WW scores. According to this third model, as an individual's perceived social situation score increases by one, their WW score improves by 11.9 points. Similarly, as an individual's score related to feelings about their physical appearance increases by one, WW improves by 7.73 points. As the number of months of attendance at a Leg Club increases by one, WW improves by 0.25 points. Statistical analyses confirm that perceived social situation and feelings about physical appearance have a greater impact in the model than time attending a Leg Club. Wound duration did not significantly contribute to the model.

• **Regression model for PR** A further stepwise regression was undertaken using PR as the dependent variable. Perceived social situation and time spent attending Leg Club were entered as predictor variables (Table 4). Social situation was a significant predictor of PR ($t(35)=4.72, p=0.001$), and explained 34% of the variance in PR. Time spent at Leg Club was also significant ($t(35)=2.37, p=0.03$), and accounted for a further 10% of the variance. The final model explained 44% of the variance in PR scores. According to this second model, as scores of an individual's perception of their social situation increase by one, PR improves by 8.83 points. As the number of months of attendance at a Leg Club increases by one, PR improves by 0.23 points. Consideration of standardised β scores confirms that an individual's perception of his/her social situation has a greater impact in the model than Leg Club attendance.

Perceptions of how Leg Club attendance impacts living with a wound

Participants were asked about the impact of Leg Club attendance on a number of issues relevant to their well-being (Fig 1). Of the 45 participants who responded to the questions, >50% felt that membership of a Leg Club had improved their life satisfaction (57.8%), self-esteem (53.3%), social situation (51.1%) and mood (51.1%). In addition, >50% indicated they felt more positive about the future (53.3%) and better about life in general (54.3%). Most respondents said there had been improvement to their wound since attending Leg Club (77.8%); and 82.2% believed their treatment had improved since becoming a Leg Club member.

Phenomenological analyses

An interpretative phenomenological analysis (IPA) of the open-ended interview data was undertaken.

Table 3. Standardised (b) and unstandardised (β) regression coefficients and F-values (F) for each predictor in a stepwise regression predicting wound worries (n=49)

		b	SE b	β	F(df)
Model 1	Constant	16.9	10.3		
	Social situation	12.9	2.43	0.67‡	28.1(1,34)‡
Model 2	Constant	-13.0	11.4		
	Social situation	11.3	2.07	0.59‡	
	Appearance	8.36	0.10	0.43‡	28.0(2,33)‡
Model 3	Constant	-19.1	10.9		
	Social situation	11.9	1.95	0.62‡	
	Appearance	7.73	1.98	0.40‡	
	Months attended LC	0.25	0.10	0.25*	23.5(3,32)‡

R2=0.45 for model 1. Delta R2=0.08 for model 2. Delta R2=0.06 for model 3 (p<0.001).
 ‡significant at p<0.05; †significant at p<0.01; ‡significant at p<0.001;
 df – degrees of freedom; SE – standard error; LC – Leg Club

Table 4. Standardised (b) and unstandardised (β) regression Coefficients and F-values (F) for each predictor in a stepwise regression predicting personal resources (n=49)

		b	SE b	β	F(df)
Model 1	Constant	43.5	8.35		
	Social situation	8.33	1.98	0.59‡	17.7(1,34)‡
Model 2	Constant	35.7	8.51		
	Social situation	8.83	1.87	0.62‡	
	Months attended LC	0.23	0.10	0.31†	12.9(2,33)‡

R2=0.34 for model 1. Δ R2=0.10 for model 2 (p< 0.001).
 ‡significant p<0.05; †significant p<0.01; ‡significant p<0.001; df – degrees of freedom

During interviews, participants responded freely to the question, ‘What does coming to the Leg Club mean to you?’ The data were analysed for ways in which attendance at Leg Club impacted participants’ lived experience and the significance they placed on Leg Club. There were four broad themes and related subthemes detected in participants’ responses (Fig 2).

Theme (1) ‘Social interaction’ described the emphasis participants placed on engagement with others. This broad theme incorporated a number of sub-themes. For instance, the importance of ‘social engagement’ was often mentioned:

‘It’s different here. At a clinic nobody talks to you. Here everyone talks to each other. You come here; you have a laugh, joke, tea, coffee. It’s brilliant.’

Only one participant mentioned feeling a lack of engagement within the Leg Club environment:

‘Those with the most need get the least amount

Acknowledgements

The authors thank Urgo Medical for funding this project. We also thank Ellie Lindsay, Rob Bawden, Roland Renyi and Lynn Bullock from the Lindsay Leg Club Foundation for supporting this work. We would like to acknowledge the contribution of Abbye Andrews, Felicity Penn and Charlotte Taylor for their assistance in data collection. Finally, our thanks go to those participants with chronic leg wounds who took the time to talk to us and complete our questionnaire(s).

References

1 Faria, E., Blanes, L., Hochman, B. et al. Health-related quality of life, self-esteem, and functional status of patients with leg ulcers. *Wounds* 2011; 23: 1, 4–10.

2 Lo, S.F., Hayter, M., Hu, W.Y. et al. Symptom burden and quality of life in patients with malignant fungating wounds. *J Adv Nurs* 2012; 68: 6, 1312–1321.

3 Persoon, A., Heinen, M.M., Van Der Vleuten, C.J. et al. Leg ulcers: a review of their impact on daily life. *J Clin Nurs* 2004; 13: 3, 341–354.

4 Parker, K. Psychosocial effects of living with a leg ulcer. *Nurs Stand* 2012; 26: 45, 52–62.

5 Herber, O.R., Schnepf, V., Rieger, M.A. A systematic review on the impact of leg ulceration on patients' quality of life. *Health Qual Life Outcomes* 2007; 5: 44–45.

6 Upton, D., Andrews, A., Upton, P. Venous leg ulcers: what about well-being? *J Wound Care* 2014; 23: 1, 14–17.

7 Upton, D., South, F. The psychological consequences of wounds - a vicious circle that should not be overlooked. *Wounds UK* 2011; 7: 4, 136–138.

8 International Consensus (2012): Optimising wellbeing in people living with a wound. An expert working group review. <http://www.woundsinternational.com> (accessed November 2014).

9 Finlayson, K., Edwards, H., Courtney, M. Relationships between preventive activities, psychosocial factors and recurrence of venous leg ulcers: a prospective study. *J Adv Nurs* 2011; 67: 10, 2180–2190.

10 Upton, D., Upton, P. Family, Friends and Social Support. In: *Psychology of Wounds and Wound Care in Clinical Practice*. Springer International Publishing Switzerland, 2015.

11 Ozbay, F., Johnson, D.C., Dimoulas, E. et al. Social support and resilience to stress: from neurobiology to clinical practice. *Psychiatry (Edgmont)* 2007; 4: 5, 35–40.

12 Uchino, B.N. Social support and physical health: understanding the health

of support. I don't get asked if I'd like a drink here—I have to ask for one unlike the others.'

In addition, participants also mentioned the importance of 'social isolation' being relieved:

'I can't get out much—so coming here is good. I come for the treatment and socialising.'

and the 'quality of relationships' developed at Leg Club were at times defined as family/friendship:

'Like a family—the Leg Club is like a family to me.'

Finally, the pleasure of engagement through 'structured activities' was also mentioned:

'The Leg Club is bloody marvellous! They really look after you here, they organise meals and parties. Hell and high water wouldn't stop me from coming here.'

A second broad theme (2) treatment/care incorporated participants' reflections on the practical and emotional support offered through treatment at Leg Club. In particular, people mentioned the 'quality of care':

'They do a good job, got it under control, completely under control. It wouldn't heal before I started coming here.'

and the emotional benefits of 'good relationships with health professionals':

'The nurses are very caring here. You are the only one that matters.'

Participants also referred to the importance of 'continuity of care':

'You get to see the same nurses to treat your wound—unlike the surgery where you may see a different nurse every time.'

and 'availability of care' was also mentioned;

'I enjoy coming here. It's only down the road from me.'

References were also made to the significance of 'free treatment services' and 'wound healing'. Finally, impediments to successful treatment were included in responses and the subtheme 'general health' incorporated participants' concerns about comorbid physical and mental health issues:

Fig 1. Percentage of participants indicating improvement, no change, and decreases in factors associated with well-being (n=45)

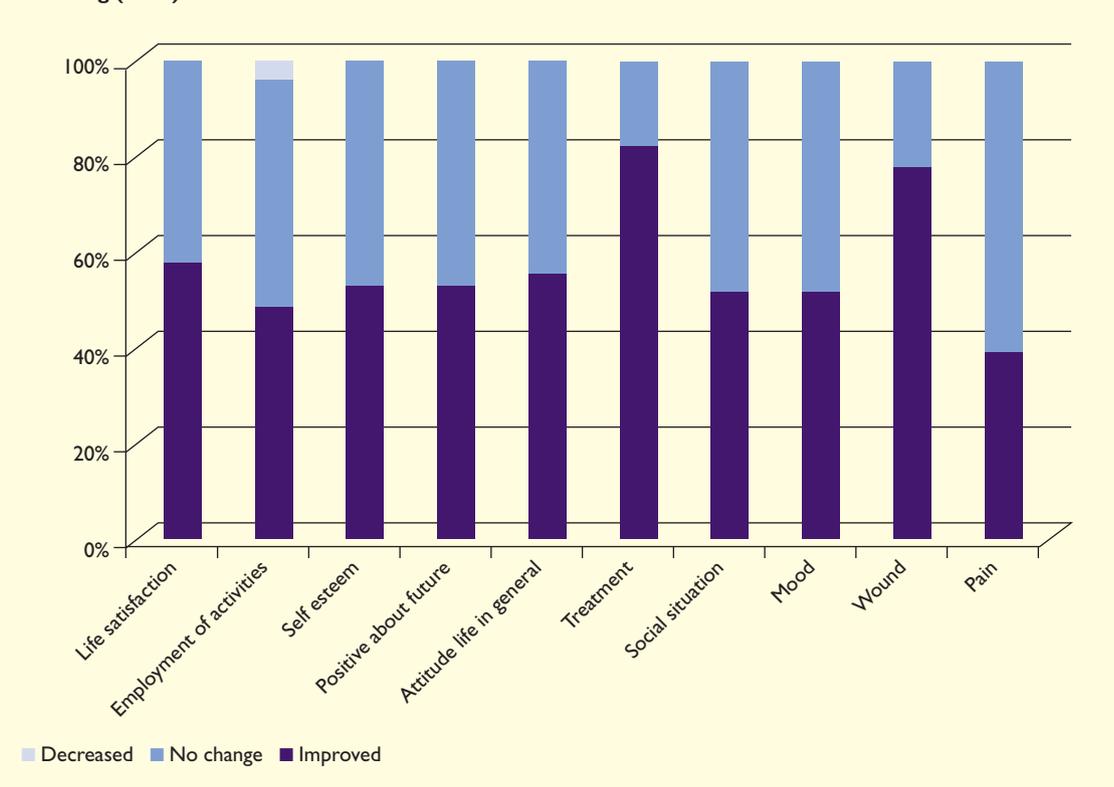
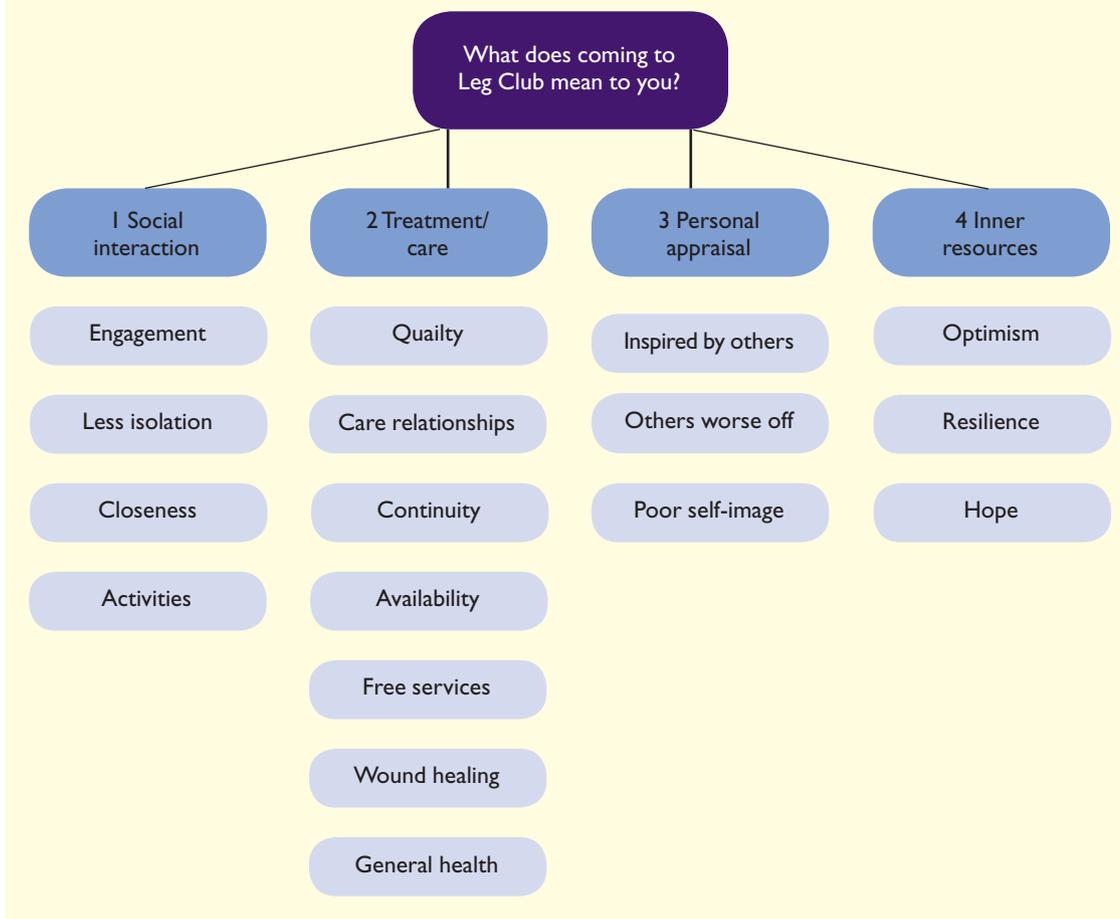


Fig 2. Interpretive phenomenological analysis themes and subthemes encapsulated in participant responses about the importance of Leg club membership



‘Where there is mental and physical disabilities—you feel things worse—so those with multiple symptoms there is nothing to help with those.’

A third theme (3) personal appraisal was also identified. Participants referred to both positive and negative comparisons between themselves and other members of Leg Club, which either served to bolster their sense of well-being or diminish it. For example, ‘being inspired by others improvement/attitudes’ was a positive appraisal which bolstered well-being:

‘Coming here and seeing how other people are progressing is good.’

Confirmation that ‘others are worse off’ than me was a negative appraisal which served to increase well-being:

‘There are others here in a worse situation

than me—and he’s happy, he’s always telling a joke, so you’ve got to be happy.’

Conversely, reconfirmation of ‘negative self-image’ was a positive comparison that diminished well-being:

‘I don’t like coming to the Leg Club at all. I look around and see all these old people and think ‘gosh that’s me!’

The fourth broad theme (4) inner resources related to participants’ reference to personal strengths as a source of support. Participants referred to qualities like, ‘optimism’:

‘I am optimistic, take life as it comes, just have to get on with things. It doesn’t stop me from going out!’

‘resilience’:

consequences of relationships. Yale University Press, 2004.

13 Thoits, P.A. Mechanisms linking social ties and support to physical and mental health. *J Health Soc Behav* 2011; 52: 2, 145–161.

14 Charles, H. The influence of social support on leg ulcer healing. *Br J Comm Nurs* 2010; 15 (Suppl. 12), S14–S21.

15 Berkman, L.F. The role of social relations in health promotion. *Psychosom Med* 1995; 57: 3, 245–254.

16 Holt-Lunstad, J., Smith, T.B., Layton, J.B. Social relationships and mortality risk: a meta-analytic review. *PLoS Med* 2010; 7: 7, e1000316.

17 Umberson, D., Montez, J.K. Social relationships and health: a flashpoint for health policy. *J Health Soc Behav* 2010; 51: Suppl, S54–S66.

18 Brummett, B.H., Barefoot, J.C., Siegler, I.C. et al. Characteristics of socially isolated patients with coronary artery disease who are at elevated risk for mortality. *Psychosom Med* 2001; 63: 2, 267–272.

19 Frasure-Smith, N., Lespérance, F., Gravel, G. et al. Social support, depression, and mortality during the first year after myocardial infarction. *Circulation* 2000; 101: 16, 1919–1924.

20 Everson-Rose, S.A., Lewis, T.T. Psychosocial factors and cardiovascular diseases. *Annu Rev Public Health* 2005; 26, 469–500.

21 Hibbard, J.H., Pope, C.R. The quality of social roles as predictors of morbidity and mortality. *Soc Sci Med* 1993; 36: 3, 217–225.

22 Lee, M., Rotheram-Borus, M.J. Challenges associated with increased survival among parents living with HIV. *Am J Pub Health* 2001; 91: 8, 1303–1309.

23 Ertel, K.A., Glymour, M.M., Berkman, L.F. Social networks and health: a life course perspective integrating observational and experimental evidence. *J Soc Personal Relationships* 2009; 26: 1, 73–92.

24 Uchino, B.N. Social support and health: a

Continued page 404

review of physiological processes potentially underlying links to disease outcomes. *J Behav Med* 2006; 29: 4, 377–387.

25 Moffatt, C.J., Franks, P.J., Doherty, D.C. et al. Sociodemographic factors in chronic leg ulceration. *Br J Dermatol* 2006; 155: 2, 307–312.

26 Wissing, U., Ek, A.C., Unosson, M.A. follow-up study of ulcer healing, nutrition, and life-situation in elderly patients with leg ulcers. *J Nutr Health Aging* 2001; 5: 1, 37–42.

27 Uchino, B.N., Cacioppo, J.T., Kiecolt-Glaser, J.K. The relationship between social support and physiological processes: a review with emphasis on underlying mechanisms and implications for health. *Psychol Bull* 1996; 119: 3, 488–531.

28 Stansfeld, S.A., Fuhrer, R., Head, J. et al. Work and psychiatric disorder in the Whitehall II Study. *J Psychosom Res* 1997; 43: 1, 73–81.

29 Solowiej, K., Mason, V., Upton, D. Review of the relationship between stress and wound healing: Part 1. *J Wound Care* 2009; 18: 9, 357–366.

30 Kiecolt-Glaser, J.K., Marucha, P.T., Mercado, A.M., et al. Slowing of wound healing by psychological stress. *The Lancet* 1995; 346: 8984, 1194–1196.

31 Kiecolt-Glaser, J.K., McGuire, L., Robles, T.F. et al. Psychoneuroimmunology: psychological influences on immune function and health. *J Consult Clin Psychol* 2002; 70: 3, 537–547.

32 Cole-King, A., Harding, K.G. Psychological factors and delayed healing in chronic wounds. *Psychosom Med* 2001; 63: 2, 216–220.

33 Woo, K.Y. Wound-related pain: anxiety, stress and wound healing. *Wounds UK* 2010; 6: 4, 92–98.

34 Detillion, C.E., Craft, T.K., Glasper, E.R. et al. Social facilitation of wound healing. *Psychoneuroendocrinology* 2004; 29: 8, 1004–1011.

35 Edwards, H., Courtney, M., Finlayson, K. et al. Improved healing rates for chronic venous leg ulcers: pilot study results from a randomized controlled trial

‘I just take life as it comes, you just have to deal with it, don’t you?’

and ‘hope’:

‘I’m not [usually] very hopeful, but I’m hoping coming here will help.’

Discussion

Social support has implications for health and well-being.^{10–13} The Leg Club model of treatment aims to harness social support mechanisms to improve treatment concordance and wound healing in people living with chronic wounds.^{35–37}

Leg Club membership impacts well-being over time

Repeated measures ANOVA provided initial evidence that Leg Club attendance impacts well-being over time. A significant interaction was found between length of time attending and changes in PR for people who had attended Leg Club between one and two years. In particular, PR scores for this group were significantly higher at the second administration of the WOWI. The PR construct describes a set of positive emotions and behaviours which have been linked to personality traits. While the latter are considered relatively stable across time, PR such as coping are likely to respond to changes in a person’s life such as social support.³⁹ Thus, involvement with a Leg Club may improve individual well-being by enhancing personal resources via social facilitation and support.

This impact of Leg Club attendance on well-being was supported in the interviews with members. The importance of social engagement at the Leg Club and the consequent prevention of social isolation were mentioned as beneficial by the majority of respondents. In addition, people reported that becoming a Leg Club member allowed them to engage in personal appraisal of their situation through comparison with others, and reported an increase in personal strengths (such as optimism, resilience, hope). The data from both the quantitative and qualitative analyses clearly suggest that attendance at Leg Club is associated with improvements in social facilitation and support, as well as improvements in PR. However, the specific mechanisms behind these associations remain to be determined. Future research should investigate whether changes in PR are moderated by improvements in a person’s social situation as a consequence of Leg Club involvement.

Leg Club attendance and other wound-related variables contribute to individual well-being

Spearman’s correlations revealed that participants’ perceived social situation was significantly moderately related to each of the WOWI subscales (WW/

PR), and to the overall WB scale. However, perceived social situation was not significantly related to either length of time attending a Leg Club or wound duration. People may bring perceptions of their social situation with them when they develop a chronic wound and subsequently undertake treatment at a Leg Club. Further investigation into how fluid an individual’s perception of their social situation is would be valuable for research into patient well-being.

Other variables of interest were wound duration, time attending a Leg Club, and feelings about physical appearance. As expected, wound duration was significantly related to length of Leg Club attendance (the longer a participant has had a wound the more time spent at a Leg Club). In addition, wound duration was significantly modestly associated with WW, though there was no significant relationship between wound duration and either PR or total WB scores. As expected, the longer a person has a chronic wound, the more likely they have concerns about the wound.

Time attending a Leg Club was significantly modestly associated with WW scores and significantly moderately associated with both PR and WB scores. As expected, Leg Club attendance appears to be related to overall well-being and the specific factors that define this construct. In addition, feelings about one’s physical appearance were significantly moderately related to WW and significantly modestly related to overall WB. It may be that people with more WW are responding in part to the physical appearance of the wound (factors such as wound size, exudate and odour), and that these issues are subsequently reflected in individual WB scores.

Physical and psychosocial variables predict WW and PR on the WOWI

Further regression analyses revealed which variables predict aspects of well-being measured by the WOWI (WW and PR). The regression model on WW explained 69% of the total variance in people’s concerns about their wound. The model indicated perceived social situation led to the greatest amount of variance in WW (45%), followed by feelings about physical appearance (a further 18%), and length of time at a Leg Club (a further 6%). These results suggest a clear relationship exists between the social situation of individual’s, their feelings about the physical appearance of their wound, and the level of concern they have about their wound. Both social situation and feelings about appearance carried greater weight in the WW model than time attending a Leg Club.

Nevertheless, it is important to note that the way in which these variables interact cannot be inferred from the current results. Perceived social situation and feelings about physical appearance may well account for some variance in WW. However, it is

equally feasible to suggest that attendance at Leg Club improves a person's social situation and feelings about his/her appearance, moderating WW indirectly in this manner. Indeed, over half the number of the participants in this study reported increases in self-esteem and mood as a consequence of Leg Club involvement. Further research is needed to ascertain the ways in which these variables work together to impact WW and well-being.

Predictors for PR

The regression model on PR explained 44% of the total variance in people's social supports, capacity for positive emotion, and associated qualities/skills (optimism, hope, coping). Again, perceived social situation led to the greatest amount of individual variance (34%), with length of time at a Leg Club responsible a further 10%. The relationship between an individual's social situation and PR is interesting in light of the further association between PR and length of time at a Leg Club. Anecdotal evidence from the IPA in this study would suggest that involvement both improves a person's social situation and his/her capacity for positive emotion (seen in the thematic analysis under 'personal appraisal' and 'inner resources'), thereby bolstering overall well-being. Again, caution is advised in assuming perceived social situation impacts directly on PR to the exclusion of Leg Club attendance. It is reasonable to suggest that more time spent at a Leg Club improves perceived social situation, and thus, attendance may moderate the relationship between social situation and PR. Further, investigation of how these variables influence one another would be useful in improving well-being in wound care and treatment.

Perceptions of how 'Leg club' attendance impacts on living with a wound

An interview format was adopted to ascertain participants' perceptions of how Leg Club membership was impacting their experience of living with a chronic wound. A descriptive analysis of Leg Club attendance revealed, broadly, that participants felt Leg Club attendance had a positive impact on a number of well-being related factors. The data also suggested that participants believed the Leg Club environment offered high-quality treatment and improved wound healing.

The IPA analysis revealed four major themes underpinning the importance of Leg Club membership to participants. The relevance of social interaction, both formal and informal, and subsequent relief from social isolation were mentioned numerous times. The quality, continuity and availability of treatment, alongside the importance of positive relationships with health professionals at the Leg Club were also reported. Participants felt that the opportunity to undertake personal appraisal of their

situation through comparison with others gave them a chance to put their own experiences into context and find relief and support. Finally, the rallying of personal resources such as optimism, resilience and hope were also important components of Leg Club membership. Much of the evidence from this interview data supports the quantitative findings that Leg Club membership is impacting well-being through a number of relevant variables, including social support, and the development of personal resources.

Limitations

While sufficient for the purposes of the current research, the sample size for the study was only moderate. This will impact the generalisability of the results to other chronic wound care populations. In addition, the majority of the data analysis in the current study relied on correlation methods, and causality cannot be assumed. The specific interplay of variables must also be considered with caution. Future research should consider a moderating approach to the relationship between Leg Club attendances, wound-related variables, and well-being. This will prepare the way for more experimental designs and assist researchers in understanding how various aspects of Leg Club membership differentially impact well-being.

Conclusions

The Leg Club model of care harnesses social facilitation mechanisms to provide treatment to members in an informal, holistic environment.³⁷ Previous research into the 'Leg Club' model of care revealed improved wound healing, quality of life, morale, self-esteem, pain, and functional ability.^{35,36} Results from the current study support the idea that Leg Club-based treatment also influences well-being factors. More time spent at a Leg Club was related to increases in personal resources over time. Only a moderate relationship was found between time spent at a Leg Club and overall WB (as measured by the WOWI); however, a number of other wound-related physical and psychosocial variables were implicated in this relationship. Most notably perceived social situation contributed to predictive models for WW and PR. Social situation and related social support appear to weigh heavily in the relationship between Leg Club membership and well-being. However, the precise interplay between these variables and well-being outcomes is still to be determined. Leg Club membership clearly impacts well-being for the better; and social-support has an important role to play in this relationship. Future research should consider the ways in which social support mechanisms and other relevant wound-related variables specifically interact to optimise patient well-being and treatment outcomes. ■

- of a community nursing intervention. *Int J Nurs Pract* 2005; 11: 4, 169–176.
- 36 Edwards, H., Courtney, M., Finlayson, K. et al. A randomised controlled trial of a community nursing intervention: improved quality of life and healing for clients with chronic leg ulcers. *J Clin Nurs* 2009; 18: 11, 1541–1549.
- 37 Lindsay, E. The Lindsay Leg Club Model: a model for evidence-based leg ulcer management. *Br J Comm Nurs* 2004; 9: Suppl, S15–S20.
- 38 Lindsay, E. Changing policy and practice to empower older people living with chronic wounds. Symposium abstract. The 20th IAGG World Congress of Gerontology and Geriatrics, Korea, 2013.
- 39 Upton, D., Upton, P., Alexander, R. [in press]. The Well-being in Wounds Inventory (WOWI): development of a valid and reliable measure of well-being in patients with wounds.
- 40 Norman, G.R., Streiner, D.L. *Biostatistics: the bare essentials*. B.C. Decker, 2008.