Encouraging Patient Adherence to Therapeutic Graduated Compression Therapy in Venous Stasis Disease:

A Limited Literature Review

"It's not that people are unwilling to change.
It's that people are unwilling to be changed."[1]

BY Marjorie Fierheller, Comfort Anku, Afsaneh Alavi

Chronic venous insufficiency (CVI) and subsequent chronic venous ulceration represent a significant problem in our aging society. Although consistent use of graduated compression stockings has been associated with improved health outcomes, patient adherence to this treatment is generally found to be low. Wound-care practitioners see this as a significant challenge to providing the best care. A limited review of literature related to medical treatment adherence was undertaken, strategies and practical approaches were identified, and potential application to practice are presented. A need for research specific to wound-care practice was identified.

Background on CVI

Some degree of venous disease is evident in the legs of approximately half the adult population and as such is considered to be an "underestimated public health problem."[2,3]

Chronic venous insufficiency can ultimately lead to infection, skin changes and ulceration.[4] Venous leg ulcers can significantly affect an individual's quality of life, increase health-care costs and frequently recur.[3,5]

Treatment of CVI with or without ulceration, although manageable, often becomes a frustrating problem for the patient and practitioner alike. The chronic nature of this condition requires ongoing self-management involving lifestyle modifications, inconvenient therapies and conflicting or confusing information.[4] As the gold standard of medical management for CVI, therapeutic graduated compression stockings provide effective prevention and treatment of disease progression by controlling edema and counteracting the effects of venous hypertension.[6,7] Compression stockings can also reduce the incidence of ulcer recurrence post-healing and throughout the maintenance stage.[8]

Studies have demonstrated lower recurrence rates of venous ulceration in patients who wear their compression stockings as prescribed.[9,10] However, to date, investigations of patient adherence to this specific treatment modality are limited by lack of universal definitions for the terms *compliance* or *adherence*, wide variation in study methods, the types of assessment tools used, and inconsistency in how the desired outcome is measured.[11] Relatively high rates of venous ulcer recurrence serve to reinforce the need for compression therapy for life.[12]

The Adherence/Non-adherence Problem

Practitioners treating chronic wounds identify non-adherence to compression stockings as presenting a significant challenge to providing the best care.[13]

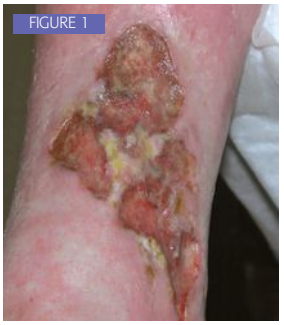
Patients have cited cost, appearance, discomfort and difficulty with application among the reasons for not following their treatment regimen as prescribed.[14,15]

Consider the case of Mrs. A and Mr. B as outlined in the case studies below:

Case Study 1

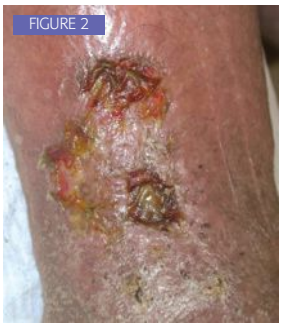
Mrs. A is a busy 35-year-old working mother of three young children, with a supportive husband. She has a history of venous stasis disease related to obesity and previous deep vein thrombosis (DVT). Painful ulceration has recurred three times in the past two years, and her ulcer has just recently healed. She would like to prevent another leg ulcer recurrence and understands that wearing her compression stockings will help. She just does not have the time or energy to get into them every morning before work and often leaves home without wearing them. She is in tears at her next clinic visit.

FIGURE 1



Mrs. A prior to healing.

FIGURE 2



Mr. B prior to complete healing.

Case Study 2

Mr. B is an 82-year-old retired policeman who lives alone. He has a long history of varicose veins, leg swelling and rheumatoid arthritis. He has just recovered from leg ulceration with severe stasis dermatitis. He does not want to go through this pain and itching again as it severely interferes with his social life. Strong support stockings have been prescribed for him. At the next clinic visit, it is discovered that Mr. B is not wearing his stockings. He angrily states that they are making his legs worse.

Literature Review and Discussion

Literature discussing the challenge of non-adherence to medical treatment is extensive and generally focuses on prescribed medication, treatment regimens such as diabetes care or health promotion/prevention strategies such as smoking cessation.[16] The problem of adherence is considered to be widespread, and studies have suggested that as few as 20 per cent of patients take their medications properly or derive full benefit from them.[17]

This is despite the fact that failing to adhere to appropriate treatment can reduce the benefit of medical treatments, compromise health outcomes, decrease quality of life and increase health-care costs.[18] Adherence rates for patients with long-term chronic conditions are found to be lower than those for patients with acute conditions, as

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TABLE 1

Factors that influence behaviour change

Patient Factors[20,23]	Practitioner Factors[24,25,26]	Environmental Factors[20,23]
■ medication and illness	■ communicates effectively	■ family
■ religion and ethics	■ demonstrates a caring attitude	■ social support
■ culture	■ identifies readiness for change	■ cost of treatment
■ psychological status	■ is an educator/facilitator	■ availability of treatment
■ patient expectation	■ builds on patient strengths and past experience	■ socioeconomics
■ health belief	■ has a coaching vs. controlling style	■ geography
■ readiness for change	■ demonstrates a non-judgemental attitude	■ housing
■ previous experience	■ promotes a collaborative/shared decision-maker approach	■ transportation
■ age		■ insurance coverage
■ gender		■ employment/unemployment
■ wound type and treatment		■ type of health-care facility

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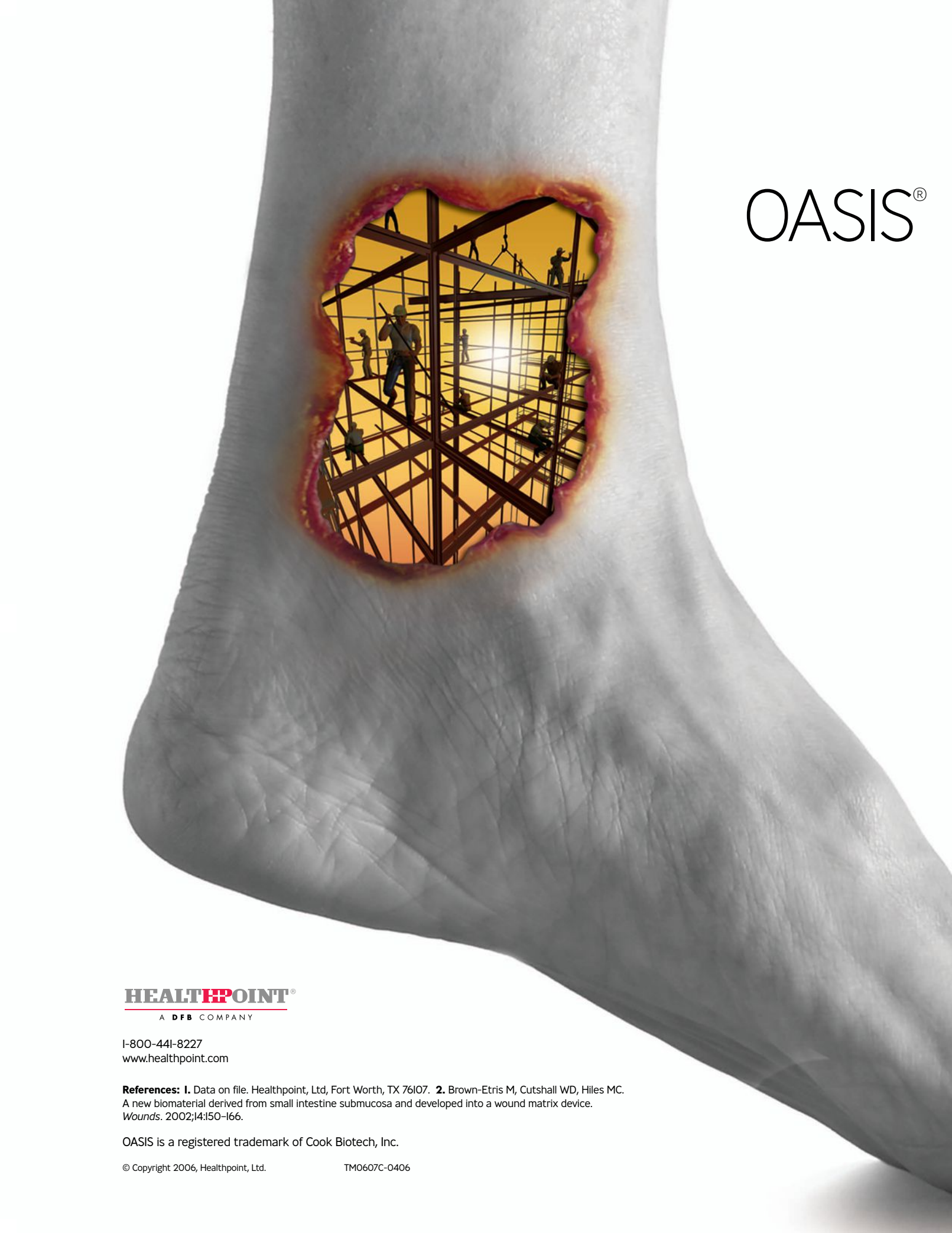

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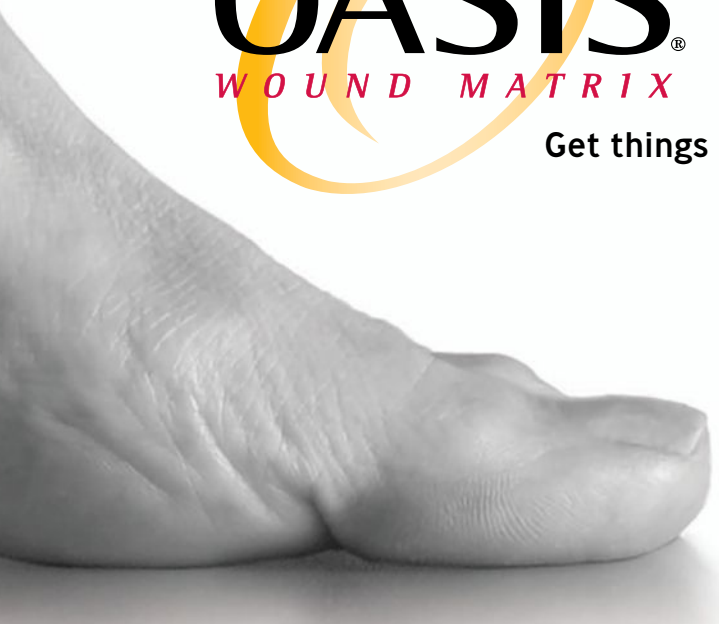

TABLE 2

Strategies that may influence adherence to medical treatment[18]

Interventions and summary of related findings

1. Technical interventions

- technological "fixes" to simplify treatment regimens and electronic monitoring devices
- effect decreases with duration of treatment

2. Behavioural interventions

- provide patients with memory aids or reminders, calendars or diaries, feedback, support or rewards that encourage self-efficacy
- use of motivational techniques
- effect diminishes over time

3. Educational interventions

- provide transfer of knowledge and concrete problem-solving skills using a variety of approaches
- outcomes improve with addition of reinforcement, feedback, patient-focus and collaboration

4. Social support interventions

- practical social support was found to provide higher effects than emotional or undifferentiated support
- practical support for a treatment regimen was better than no such support
- how social support contributes to health is not yet well understood

5. Structural or organizational interventions

- community or workplace programs specifically targeting non-adherence problems are more effective than broadly based interventions

6. Complex or multi-faceted interventions

- no single strategy showed any clear advantage over the other
- approaches combining cognitive, behavioural and affective components of the provider-patient relationship such as empathy, attentiveness, care, concern or support can be more effective than single focus

chronic illness requires disciplined daily self-management, which ultimately becomes the responsibility of the patient.[1,19]

Individuals are likely to change their health behaviour in order to feel better physically, psychologically, socially or spiritually.[20] The decision to do so can be based on a complex combination of patient, environmental, practitioner, disease, and treatment factors that may generate motivation for and/or barriers to change (Table 1).[20] Health beliefs and perception of threat have been identified as significant predictors of adherence.[21] The patient needs to be motivated, ready and willing to change their behaviour; therefore, assessment of a patient's perceived barriers and benefits to engaging in the desired behaviour is necessary.[22]

Based on the work of Kurt Lewin, the Health Belief Model is one such approach that helps to identify why some individuals are motivated to adapt a particular health behaviour while others are not.[20,27] Prochaska and DiClemente's Transtheoretical Model of Change helps us to conceptualize behaviour change by providing a framework outlining the process of how people change their behaviour.[27,28]

Maintenance of a behaviour change requires prolonged effort to avoid a relapse as the change is incorporated into daily routine and becomes a "habit of action."[29] This requires a patient's understanding, co-operation and active participation in the decision-making process to be successful.[30]

There is ongoing debate regarding which terms best describe the behaviour associated with following a prescribed medical regimen. *Compliance*, *adherence*, *concordance* and more recently *coherence* are all found in the literature.[31,32] Lack of a universally accepted definition limits strength and transferability of much related research literature.[18]

Use of the terms *compliance/non-compliance* or *adherence/non-adherence* has also been criticized for being "dysfunctional concepts" representative of a practitioner's attempt to control patient self-management choices.[1]

Collaboration or shared decision-making, defined as a "process by which patients and providers consider outcome probabilities and patient preferences then reach a health-care decision based on mutual agreement," may be preferable.[24]

Although not a new concept, it is one that fits well with that of patient choice and adherence. Patients engaged in shared decision-making have a greater sense of personal control or empowerment, lower levels of concern about their disease, are more satisfied with their treatment and experience positive treatment outcomes.[24,33] Although most patients strongly prefer to be involved in decision-making, its value has been questioned in medical emergency situations, in patients over 60 years of age or those who feel hopeless or anxious, and in the presence of language and cultural barriers.[24,26]

Quality of the practitioner-patient relationship has been identified as an important factor influencing a patient's treatment choices.[34] Due to their direct access

to the public, primary care clinicians become a "principal source of influence on health behaviour."[35] In a successful patient-practitioner relationship, effective communication facilitates not only service delivery, but also effective implementation of the treatment plan through increased understanding and patient adherence, improved health outcomes and improved social outcomes such as patient and clinician satisfaction.[36] A patient who feels that their contribution is valued will more comfortably share personal preferences and goals, thus enabling the practitioner to determine how this can be accommodated within the best available treatment options.[24] This type of health-care provider becomes a "coach" who provides the tools, encourages their use and offers support, thereby empowering the patient to develop self-sufficiency, build confidence and move forward with their own personal goals.[37]

Practitioner-patient communication that includes the relationship tasks of engagement, empathy, education and enlistment has the potential to increase the benefits and effectiveness of a health-related encounter by building on the "power of the clinician-patient relationship."[35,36,38] Creating an empathetic bond facilitates emotional and physiological engagement and caring.[25] Listening to and understanding the patient's story therefore becomes an important part of integrating this type of communication model into an individualized treatment plan.[36]

The literature discussing strategies to improve medical treatment adherence is extensive. Differences in methodology, definitions and measures of adherence limit the strength and transferability of findings.[39] Current methods for improving treatment adherence in chronic illness are considered to be complex, ineffective and inadequately researched.[40] Dulmen et al conducted a meta-analysis of 38 systematic reviews (a "review of reviews") of the effectiveness of medical treatment adherence interventions published between 1990 and 2005.[18] Twenty-three studies with significant differences between interventions were reviewed and strategies found to improve adherence were identified (Table 2). None of these studies were found to address treatments or lifestyle changes specific to the treatment of chronic wounds.

Developing Effective Strategies

As patient behaviour is influenced by a complex combination of both intrinsic and extrinsic factors, wound-care practitioners need to develop useful and practical strategies that can help to optimize treatment

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TABLE 3

Encouraging adherence to compression stockings in patients with CVI: Approaches and strategies

Adherence approach	Adherence strategy
1. Establish a caring relationship with patient through appropriate use of therapeutic communication skills.[36,38]	Listen to their story and identify main concerns.
2. Identify individual's level of readiness/motivation for change.[28]	How important is this to you?
3. Identify individual's barriers to change.[28]	What is your previous experience?
4. Encourage patient participation in the shared decision-making process regarding treatment options.[24]	Collaborate/negotiate.
5. Assess patient's level of knowledge and need/desire for more information.[23]	Provide the right amount of non-judgemental information.
6. Create an individualized education plan.[23]	Information helps patient develop the problem-solving skills needed to find workable, real-life solutions.
7. Maximize social support.[18,23]	Provide follow-up and ongoing support/encourage family involvement/access community resources (health-care team vs. individual practitioner).

outcomes. Based on this limited literature review, approaches that could potentially be applied to patients with chronic venous insufficiency to encourage adherence to ongoing treatment with compression stockings have emerged. Some of these have been combined to create Table 3.

Wound-care practitioners for Mrs. A and Mr. B were able to significantly improve adherence to ongoing compression stocking treatment and help prevent ulcer recurrence specifically by:

1) Actively listening and establishing an empathetic bond with their patients.
2) Recognizing that readiness/motivation to change is evident by the patient's desire to find a workable solution to prevention of ulcer recurrence.
3) Identifying that physical limitations make stocking application time-consuming, painful and difficult.
4) Initiating discussion regarding solutions to difficult compression stocking application in order to identify gaps in knowledge.
5) Providing non-judgmental information specific to these gaps re: stocking types, aides for stocking application and other methods of reducing leg edema such as leg elevation, exercise and weight loss.
6) Engaging in shared decision-making and problem-solving to find individualized solutions to empower the patient (reconsider type/strength of stockings and how best to apply them based on the patient's situation and choice).
7) Involving family and community resources in treatment and the scheduling of follow-up appointments for reinforcement of teaching, re-evaluation of treatment, support and encouragement.

A limited review of literature related to medical treatment adherence has been presented and considered in relation to patients with chronic venous stasis disease. It is evident that this is a complex concept and that existing literature, although extensive, is rarely specific to patients with chronic wounds. Studies are limited by varied methodology, lack of universal definitions or measurement outcomes. Although transferability of findings within a wound-care setting is uncertain, approaches have been identified that may have universal application.

Strategies grounded in behaviour-change theory and existing adherence research have the potential to empower patients and practitioners, encourage adherence to treatment, and thus improve wound-care outcomes. Wound-care practitioners need to develop practical strategies to address the challenge of treatment adherence in order to optimize care. This is an area where future research is urgently needed.

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