

Using a Multidimensional Approach to Predict Motivation and Adherence to Rehabilitation in Older Adults

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Physical therapists working with older adults often encounter problems related to low motivation and adherence. This review article integrates data on factors related to adherence behavior from the fields of sports medicine, sport psychology, athletic training, and physical therapy and applies the results to older adults in rehabilitation. Key factors are highlighted and a model for predicting adherence behavior, based on protection motivation theory, is outlined. The authors advocate complementing orthopedic assessment with a psychosocial assessment in the form of brief surveys or structured interview. The article concludes with several evidence-based recommendations for the practicing physical therapist. **Key words:** *adherence, rehabilitation, review*

ASSESSING patient motivation and predicting adherence to rehabilitation may present a difficult situation for a physical therapist (PT) or sports medicine professional (SMP). Licensed PTs and SMPs are trained to be competent in many areas within the health sciences, but may have less confidence in counseling, psychological assessment, or mental skills training.¹⁻³ Yet on a daily basis, practitioners are faced with interpersonal evaluations and are asked to create rehabilitation programs for a variety of patients with differing skills, goals, and needs. A client's perceptions, motivation, and adherence behavior can greatly impact rehabilitation progress; and expecting all PTs and SMPs to successfully navigate these uncharted waters may be unrealistic. Numerous studies have identified key factors related to patient motivation and adherence, but guidelines for translating these research findings into practice have not been

fashioned. Further, only one text in the field of physical therapy has exclusively addressed psychological factors related to geriatric rehabilitation in the last 15 years.⁴ This text, *Psychological Aspects of Geriatric Rehabilitation*, is a useful sourcebook. However, the authors focus on lower-functioning patients and clinical disorders that may interfere with rehabilitation.

Carefully examining the broad literature base on rehabilitation allows the informed consumer to glean important lessons for the practice of physical therapy with older adults. The underlying assumption of this work is that PTs would prefer to have motivated patients who closely follow their recommendations and that regularly working with motivated patients would increase job satisfaction. Psychosocial research has assessed a variety of factors that may facilitate or interfere with a patient's motivation, and if providers can identify and reduce barriers early in rehabilitation, the patient may respond positively. This increased motivation would lead to improved adherence to the rehabilitation protocol and an increased likelihood of positive health outcomes.

Health science and sport psychology researchers have examined rehabilitation

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adherence over the past 2 decades, and more than 200 potential mediating variables have emerged.⁵ With this proliferation of research, though, has come considerable confusion for applied professionals in discerning which factors to focus on when evaluating new patients. Should you focus on pain and pain tolerance or is the patient's lack of confidence more important? Is it critical to address the patients' perceived barriers ahead of time or just wait for them to emerge? Contributing to the problem, it has been common for previous research related to motivation and adherence to examine 1 or 2 factors in isolation. While these unidimensional studies are helpful in assembling the pieces of the adherence puzzle, they do not provide a clear or practical solution to assessing patient motivation, neither do they allow for a comparison of the multiple factors that are likely to influence patient behavior.

The purpose of this review article is to offer a theoretical framework for the study of motivation and adherence to rehabilitation among older adults. The review draws from the fields of sports medicine, sport psychology, athletic training, and physical therapy and applies the findings to older adults. There is a dearth of research literature on adherence and motivation among physical therapy patients in general, and more specifically, there is a void in the literature exploring these issues within a geriatric population. The majority of the information discussed within this review will be most relevant for moderate- to high-functioning geriatric patients with subacute and acute injuries. Hopefully, reviewing the relevant findings related to adherence to rehabilitation in healthy and unhealthy populations will highlight methods that could be used to complement traditional rehabilitation programs by identifying patients' dysfunctional attitudes and barriers to rehabilitation before they emerge. The review will first discuss adherence rates across situations and modalities and discuss key factors identified as predictive of adherence in rehabilitation settings, then offer a theoretical framework for current and future study, and conclude

with a section offering evidence-based recommendations for research and practice.

KEY FACTORS RELATED TO REHABILITATION ADHERENCE

Among allied health providers, the shared goal of rehabilitation is to assist patients in enhancing their functional abilities and return them, where possible, to preinjury health as efficiently as possible.⁶⁻⁸ Not surprisingly, several authors have suggested that adherence behavior is a major contributor to successful rehabilitation.⁹⁻¹² Although there is an awareness of this importance, low to moderate adherence rates have been reported in numerous health-related fields.¹³⁻¹⁵ For example, Ice¹⁴ reported 40% to 64% adherence within fitness programs, 25% to 75% adherence in weight reduction programs, and 30% to 80% dropout rates in cardiac rehabilitation programs. Sluijs et al⁵ noted that only 35% of their physical therapy sample fully adhered to home exercise regimes. Bassett^{16(p65)} suggests that approximately 65% of patients are "... likely to be nonadherent to some degree ...," while Brewer¹³ noted 40% to 91% adherence rates in sport injury rehabilitation settings. Cumulatively, these suggest that rates have greatly varied and are less than optimal.

Higher adherence rates, however, have been reported within the physical therapy literature. Vasey¹⁷ completed a survey of 4 physiotherapy departments in the United Kingdom and reported that 7% to 14% of patients failed to return to follow-up appointments, with 6% to 11% failing to even attend their first scheduled appointment. Similar improved results have been reported in other research, also ranging from 8% to 15%.^{7,15,18-21} Because of variations in definitions, measurement, and reporting, it is difficult to make firm conclusions about the research findings presented. However, it appears that adherence rates could be improved considerably. Numerous problems have been noted because of definitions, research design, instrumentation, and the lack of theory-driven research.

Methodological concerns have been discussed at length in previous reviews.²²

The multitude of factors related to adherence behavior have commonly been categorized as either personal or environmental. Personal factors most commonly reported as affecting adherence rates include belief in efficacy of treatment,²³⁻²⁵ self-motivation,^{23,26-31} perceived social support,^{23,27,32} pain tolerance,^{27,29,32} emotional disturbance,^{18,33} belief in ability to perform activities prescribed,²⁵ goal direction,²³ instrumental coping,³⁴ positive attitude,³⁰ perceived risks for future complications and long-term benefits,²⁵ success perceived to be related to controllable factors,²⁶ and perceived lack of time.³¹

Environmental or situational factors most commonly reported as affecting adherence rates include clinical setting and scheduling,^{27,31} communication,²⁸ therapists support and progression of exercises,³¹ and rehabilitation professionals' expectancy of patient behavior.²⁵ To date, little has been done to try to incorporate this wealth of information to try to predict those who may be at risk for nonadherence. In an effort to develop a more parsimonious model of adherence, the following discussion will focus on frequently cited personal factors that influence rehabilitation attitudes and behavior.

PERSONAL FACTORS

Self-efficacy and self-motivation: Self-efficacy is a situation-specific construct. Perceived self-efficacy takes into account individuals' conceptualization of the situation (eg, the demands of rehabilitation) and their capabilities to meet the situational demands (eg, their own skill level). Flint³⁵ reported that 10 athletes recovering from anterior cruciate ligament (ACL) reconstruction who observed peers involved in rehabilitation from the same injury and surgery had increased self-efficacy, self-confidence, and adherence to rehabilitation. Evans and Hardy³⁶ reported that a

goal setting group had higher levels of self-efficacy and they also had the higher mean adherence score, although not significantly different from the control group. Studies have shown that a specific belief that goal setting will assist recovery has been shown to positively influence home and clinic-based adherence in several studies.^{23,31,37,38} These findings are likely linked to the concept of self-motivation, which, as previously discussed, has been cited as a factor positively affecting adherence in both qualitative and quantitative research efforts.

Perceptions of symptoms: Taylor and May²⁵ reported that more adherent patients perceived their injury to be more serious. They also reported, along with Brewer and colleagues,³⁹ that those who perceived themselves to be more vulnerable to further problems if they did not follow their rehabilitation protocol were more adherent. The results suggest that assessing individuals' perceptions of the severity of the injury and perceived susceptibility to reinjury may be useful in identifying cognitive barriers at the onset of rehabilitation. Although neither of these previously cited studies dealt specifically with older adults, these concerns may be highly relevant in geriatric populations given the added salience of health concerns among older adults.

Mood: There have been a variety of models to explain possible reactions to injury. After injury, it is not uncommon for an individual to display negative self-talk, and experience anxiety, tension, frustration, or depression. Cognitive appraisal models from psychology suggest that these cognitions and subsequent negative emotions can then affect behavioral responses (ie, decreased adherence). McDonald and Hardy⁴⁰ reported a progression from a negative to a more positive mood state as the rehabilitation progressed, while other authors have suggested a curvilinear pattern over extended periods of rehabilitation.⁴¹ Daly et al¹⁸ reported that emotional disturbance was inversely related to attendance, yet unrelated to PTs' and athletic trainers' ratings of adherence during

sessions. The lack of relationship between negative mood and providers' rating could suggest an inability for SMPs to recognize and account for mood disturbance among injured patients. Malec and Neimeyer⁴² noted poor adherence in spinal cord injury patients with psychological distress. This suggests that emotional disturbance could be a cue to rehabilitation professionals of a patient's future poor adherence. Among geriatric populations, depression and other forms of mood disturbance are even more likely to manifest.⁴³ In addition, elderly depression may be mistaken for dementia because of the overlap in symptomology.⁴⁴ Rehabilitation professionals could target these groups for referral or intervention that would help address their mood and consequently may positively impact their adherence behavior.

Pain: Kolt and McEvoy⁷ have suggested that recovery may be affected by prior pain experiences. The study did not report on patient's pain experiences throughout the study, which could have also had an effect on their recovery. The findings also suggest that higher adherence scores and PTs' first-week estimates of recovery have some predictive qualities on future recovery levels. Fisher et al²⁷ noted that college athletes who were deemed adherers in their sample tolerated pain better. In another study, adherers to rehabilitation were less concerned with occasional pain compared to those who did not adhere and who reported stopping once they felt pain.²⁹ In contrast, Pizzari and colleagues found in their interviews that pain had only a fleeting influence upon adherence throughout various stages of the rehabilitation process.³¹ Although there has been great variance in the amount of influence pain has on the rehabilitation process, all studies have reported that pain is a contributing factor.

Perceived barriers to rehabilitation: Vasey conducted a questionnaire survey that looked at 4 physiotherapy departments in the United Kingdom.¹⁷ Common barriers cited by patients after no-shows and discontinued treatment included decreased need for treatment, problems with time off from work, family

problems, and feelings that the treatment was not helping. Sluijs and colleagues⁵ noted some of the reasons that patients cited to explain their nonadherence to physiotherapy treatment: the patient was too tired, the exercises were dull, and the patients perceived the exercises to cause pain. The barriers factor showed the strongest relation with nonadherence to home-based exercise was perceived lack of time, which was also the most frequently mentioned barrier (73%). Other authors have reported that adherers to exercise seemed to make time for their rehabilitation while nonadherers found rehabilitation an inconvenience.²⁹ Through discriminant analysis, the authors reported that scheduling concerns were the greatest contributor to the overall difference between adherers and nonadherers, specifically nonadherers thought that their sessions required too much time. While the aforementioned studies document "perceived lack of time" as a major barrier to rehabilitation, the implicit conclusion remains that patients who prioritize rehabilitation are more likely to make time to attend sessions, follow instructions, and complete home-based exercises.

Understanding these and other barriers to rehabilitation could be a useful component to patient assessment, particularly among older adults. Geriatric patients may also be impeded by lack of social support, lack of knowledge of rehabilitation, feeling embarrassed about their injury, or transportation issues (for non-ambulatory patients), lack of independence, and adjusting to sudden change in routine. Although research in this area has begun to identify key barriers in some specific populations, more effort is needed to understand specific barriers that negatively impact the motivation and adherence behavior of older adults in rehabilitation.

ENVIRONMENTAL AND SITUATIONAL FACTORS

Rehabilitation professionals: Several articles within the athletic training and physical

therapy literature have discussed the importance of the therapeutic relationship and the need to build trust and rapport with patients. Some of these relational elements have been shown within the rehabilitation adherence literature to be perceived by patients to be factors that influence adherence behavior. Communication,²⁸ interactions with the PT, information delivered regarding the injury and the rehabilitation process, and therapist support³¹ were all deemed components that could influence an individuals' adherence behavior.

Insurance: Kolt and McEvoy⁷ compared insured and uninsured patients seeking treatment for lumbar pain. It was found that those paying out of pocket for their own visits were more adherent and put in greater effort in rehabilitation sessions. However, no differences were found between the 2 groups in relation to attendance and adherence to home exercise completion. No other study has commented upon insurance, although this seems a logical component of the rehabilitation process that could be an influential factor to adherence. Insurance type, unfortunately, may also dictate the number of therapy sessions allotted for rehabilitation, and may interact with injury severity depending on the quality of insurance provided to the injured patient.

Injury severity: Numerous studies attempt to control for injury severity by selecting a specific group of individuals that have the same injury. Commonly, ACL recovery is used in the sport psychology literature because of similarity in prescribed rehabilitation protocols. Severity of injury could affect the length and type of rehabilitation. For example, someone recovering from a knee or hip replacement may be facing a significantly longer rehabilitation period compared to someone recovering from a grade II ankle sprain. The first patient has an extended period of time to experience barriers, setbacks, and fluctuations in mood or motivation. The same patient may also have a more rigorous and grueling rehabilitating regimen or may be restricted from normal activity for longer. Thus, this is an important factor to account for when assessing

motivation among older patients, although in a heterogeneous PT population it is one of the least controllable factors once the patient has begun rehabilitation. With all patients, there is always fluctuation in healing time but there may be more variability in geriatric populations. For example, a minor injury could take a significantly longer time to heal in an elderly patient compared to a young adult, so there may be reactions more similar to those associated with more severe or long-term injuries.

In sum, research has provided considerable evidence that in some populations and for some modalities, there are a variety of demographic, orthopedic, and psychosocial variables that impact motivation and adherence behavior toward rehabilitation. Unfortunately, the bulk of research on adherence and patient motivation has been conducted either in athlete subpopulations or more generally with healthy younger adults, so it is unclear if these same relationships exist in geriatric populations undergoing rehabilitation. Couching these results within a broader theoretical model of health behavior, however, provides a useful foundation for further exploration and understanding.

USING THEORY TO PREDICT PATIENT MOTIVATION AND BEHAVIOR

Much of the early research conducted in the health and exercise sciences related to patient behavior was atheoretical. While there were many potentially useful findings offered, few of the studies complemented each other enough to provide direction for the practitioner. Isolated studies that do not help build theory are not able to offer as much practical value to PTs and SMPs who work directly with patients on a daily basis.

Several theories have been developed and tested to investigate preventive health behavior that may be relevant to older adults.^{45,46} These theories suggest that individuals act in a particular manner with the expectation that a certain consequence will occur (eg, adhere to rehabilitation to recover to the best

of my ability), and for those consequences to have a value to the individual (eg, how severe of a problem is it if I do not adhere to my rehabilitation protocol?). The health protection theories also share a cost-benefit analysis element where the individual weighs the costs of performing the health benefit (discomfort of rehabilitation exercises) against the benefits of the actions (higher quality of life, potential for full recovery, and less chance of reinjury). One theory that has gained attention, protection motivation theory (PMT), will be detailed in this review and adapted specifically to the context of geriatric rehabilitation.

Protection motivation theory: PMT was developed in concordance with the Health Belief Model, which shares many similar components but has not been used widely in studying rehabilitation behavior.^{46,47} Previous authors have suggested that both of these theories are highly relevant in the study of geriatric health behavior since older adults may be able to relate more closely to health beliefs, disease processes, and disease outcomes compared to younger adults. The most widely studied health behavior model, the Trans-theoretical Model,⁴⁸ has considerable limitations when applied to rehabilitation behavior among older adults because of its lack of focus on health beliefs, perceived susceptibility, and perceived severity.

At the onset of rehabilitation, each patient evaluates the health threat related to his or her injury. This evaluation is impacted by previous experiences, interpersonal resources (eg, coping skills, personality variables), and prior contact with PTs and SMPs.⁴⁹ The message then initiates 2 cognitive processes: (1) threat appraisal and (2) coping appraisal.⁵⁰ Thus, patients' initial impressions of the demands of rehabilitation and their own abilities to complete the necessary exercises start an internal evaluation process. The resulting perceptions could produce aversive consequences, such as risk-taking behavior, avoidance, or denial (eg, excessive self-medication, not putting effort into rehabilitation sessions), or could provoke a behavior to reduce the chance of the

negative event occurring. These responses are referred to as maladaptive and adaptive coping.^{49,50}

There are a variety of factors that can influence the type of response exhibited. These factors include intrinsic or extrinsic rewards, which could increase the chances of a maladaptive behavior occurring or continuing. Consider, for example, the motivational differences between an elderly patient who is striving to return to attending to his or her garden or playing with new grandchildren, compared to an elderly patient who is enjoying the increased attention he or she is receiving from family and friends. The latter of these 2 patients may be highly motivated to stay injured to continue to receive secondary benefits (eg, social interaction). However, perceived severity and susceptibility may produce an element of fear that then may reduce the chances of such a behavior occurring. Therefore, the total threat appraisal is equal to the rewards minus severity and vulnerability.^{46,47} Within PMT, adaptive responses can be influenced by response efficacy and self-efficacy. These adaptive responses relate to the beliefs of the individuals regarding the effectiveness of the course of treatment suggested and their ability to complete the recommended course of action. Protection motivation is seen as an intervening variable between the threat and coping appraisals and the action. This construct acts as a motive for behavior as it "arouses, sustains, and directs activity."^{47(p98)} Therefore, the action or the inhibition of action to change is mediated by the amount of protection motivation that the individual perceives. This amount of motivation then affects the intentions for action and subsequent change (or lack thereof) in health behavior.

As with all theories, there are limitations. First, the theory assumes that environmental input is attended to and comprehended⁴⁷ and that individuals make decisions rationally.⁴⁹ In a physical therapy context, PMT assumes that the service provider has communicated the demands of the rehabilitation process clearly and that the patient has understood. Second, there may be other environmental,

intrapersonal, and cognitive processes that mediate the protection motivation response that are not captured within this theory.⁴⁷ While studying rehabilitation behavior, it may be useful to supplement the theory with additional concepts that have been previously identified as meaningful predictors of motivation and adherence.

Evidence supporting PMT: In 2000, Floyd and colleagues⁴⁵ performed a meta-analysis looking at 65 studies that had used at least one component of PMT in examining 20 different health behaviors. Some of the health issues were environmental concerns, protecting others, political issues, smoking, and adherence to medical treatment regimens. Generally, the results of the meta-analysis supported the structure of the model but the authors did note slightly stronger relationships with adaptive behaviors to the coping variables in comparison to threat variables. These relationships were particularly true in 4 studies related to adherence to medical regimens. Interestingly, Floyd and colleagues also reported that the studies that included follow-up data showed that intentions were directly linked to future behavior over time, and noted that "... decisions made become decisions implemented."^{45(p421)} A subsequent review confirmed these results, showing strong support for the relationship between coping appraisals (eg, self-efficacy) and health-related intentions and behavior.⁵¹

PMT has also received recent attention within injury rehabilitation realms. Taylor and May²⁵ devised the Sports Injury Rehabilitation Beliefs Scale (SIRBS), which used PMT as a basis for item construction. Subjects were recruited from one rehabilitation facility in the United Kingdom. Men and women ($N = 55$) aged 19 to 32 years, who were required to attend a second appointment and conduct home rehabilitation activities, were included in the sample and analyses. Participants completed a demographic form and the SIRBS immediately after leaving the clinic. After the patient's second appointment, both physiotherapist (PT) and patient completed an adherence data sheet relating to home-based

rehabilitation. The responses were eventually collapsed into 4 dichotomized adherence measures; adherence and nonadherence for both the PTs' and patients' ratings. Regarding demographic variables, the authors noted that no relationships were found between type of sport and sport level, type of injury, age, sex, and adherence. With moderate accuracy, however, PTs were able to estimate patient rates of home-based adherence. Supporting the concept of protection motivation, PTs' estimates of adherers to prescribed modalities had higher levels of perceived susceptibility and severity. The exact mechanisms by which these estimates were made are unknown but it is assumed that the PTs noticed and assessed both verbal and nonverbal cues given by their patients. When entered into the stepwise maximum likelihood logistic regression, severity and self-efficacy were the only predictors of PTs' estimates of adherence to prescribed modalities or rest. Perceived susceptibility was the only significant predictor of patients' estimates of adherence to rest. In particular, those with high belief in susceptibility to reinjury tended to follow rest advice more. Therefore, support for some components of the theory with sports injury rehabilitation modalities was found. How the model relates to clinic-based modalities, attendance, and to other rehabilitation populations requires further investigation.

Brewer and colleagues²⁶ attempted to address some of the limitations noted above by recruiting and studying a homogenous sample ($N = 85$) of American male and female competitive and recreational athletes. Participants' mean age was 27.25 ($SD = 8.27$ years). All patients were rehabilitating from ACL reconstruction at the same clinic and following the same rehabilitation protocol. The investigators extended Taylor and May's original work by examining adherence to both home and clinic-based exercise. Perceived susceptibility, treatment efficacy, and self-efficacy were positively associated with SMPs ratings of adherence, home exercise completion, and home cryotherapy measures (range $r = 0.29$ – 0.43 , mean $r = 0.36$). However, none of the

4 components of the SIRBS were associated with clinic attendance. A canonical correlation analysis was conducted with the first canonical correlation contributing significantly to the relationship. SIRBS subscales accounted for 43% of the variance in adherence scores, with treatment efficacy, self-efficacy, and susceptibility being associated with higher levels of home-based and clinic-based adherence. The elements of the coping appraisal components were more strongly related to adherence measures that mirrors previous PMT findings.^{45,51} These data lend stronger support for the SIRBS' predictive qualities, thus suggesting that PMT is a viable framework for understanding adherence to rehabilitation, especially in a home setting.²⁶

EVIDENCE-BASED RECOMMENDATIONS FOR RESEARCH AND PRACTICE

Suggestion 1: Complement orthopedic assessment with psychosocial measures at the onset of rehabilitation. As previously mentioned, a common struggle among practitioners is in the translation of volumes of research findings into practical guidelines for clinical practice. On the basis of data from numerous studies cited within this review, it is fairly clear that psychosocial variables moderate adherence intentions and have been shown to account for up to 50% of adherence behavior. To simplify the process, a proposed model of adherence to physical therapy among older adults is offered (Fig 1). This model seeks to guide further research linking factors to adherence and further development of client-centered screening and intervention programs geared at impacting patient motivation and adherence. By taking this more holistic, proactive approach to patient assessment, at-risk patients can be identified early and brief interventions implemented prior to the patient becoming a nonadherence statistic. Complementing the typical orthopedic assessment with a few short, valid surveys assessing key factors related to adherence would provide PTs and SMPs with a wealth of

useful information. For example, having data on a patient's barriers to and perceptions of rehabilitation, coping skills, pain tolerance, and mood states along with their physical status and injury history may help greatly in individualizing exercise prescription. With this approach, many rehabilitation centers may be hesitant to devote additional resources to new patients and patient education, but with effective interventions in place, they would also likely see reduced time and effort tracking down nonadherent patients (eg, cancellations, no-shows, reschedules). This change in assessment protocol is not a dramatic shift, but would require clinicians to step outside of the narrow biomedical model of assessment. A few screening tools that may help predict patient intentions and actual adherence behavior have been established but need further study (E. Grindley, unpublished data, 2004, 2005).^{25,52,53} For clinical application, it is recommended that the number of items on the screening tool be kept to a minimum while tapping multiple concepts. Perhaps research efforts can continue to create and validate setting-specific instruments.

Suggestion 2: Keep track of client motivation and adherence over time. Although there are many opinions on how to measure patient motivation and adherence, the literature suggests using multiple measures of adherence. It is not within the scope of this review to explore all the issues associated with choosing the appropriate measures of adherence behavior. The following broad definition of "rehabilitation adherence" is offered as a starting point and may be adapted to meet clinic, modality, or population-specific needs. Rehabilitation adherence includes the quality and quantity of behaviors exhibited by the patient during prescribed work and rest periods inside and outside of the clinic. These behaviors can be measured by a combination of patient self-report logs, attendance records, and PT or SMP ratings of effort.^{16,22,23,31} By tracking adherence and the various factors that may be impacting positive and negative reactions to rehabilitation, physical therapy clinics will be able to provide patients and healthcare

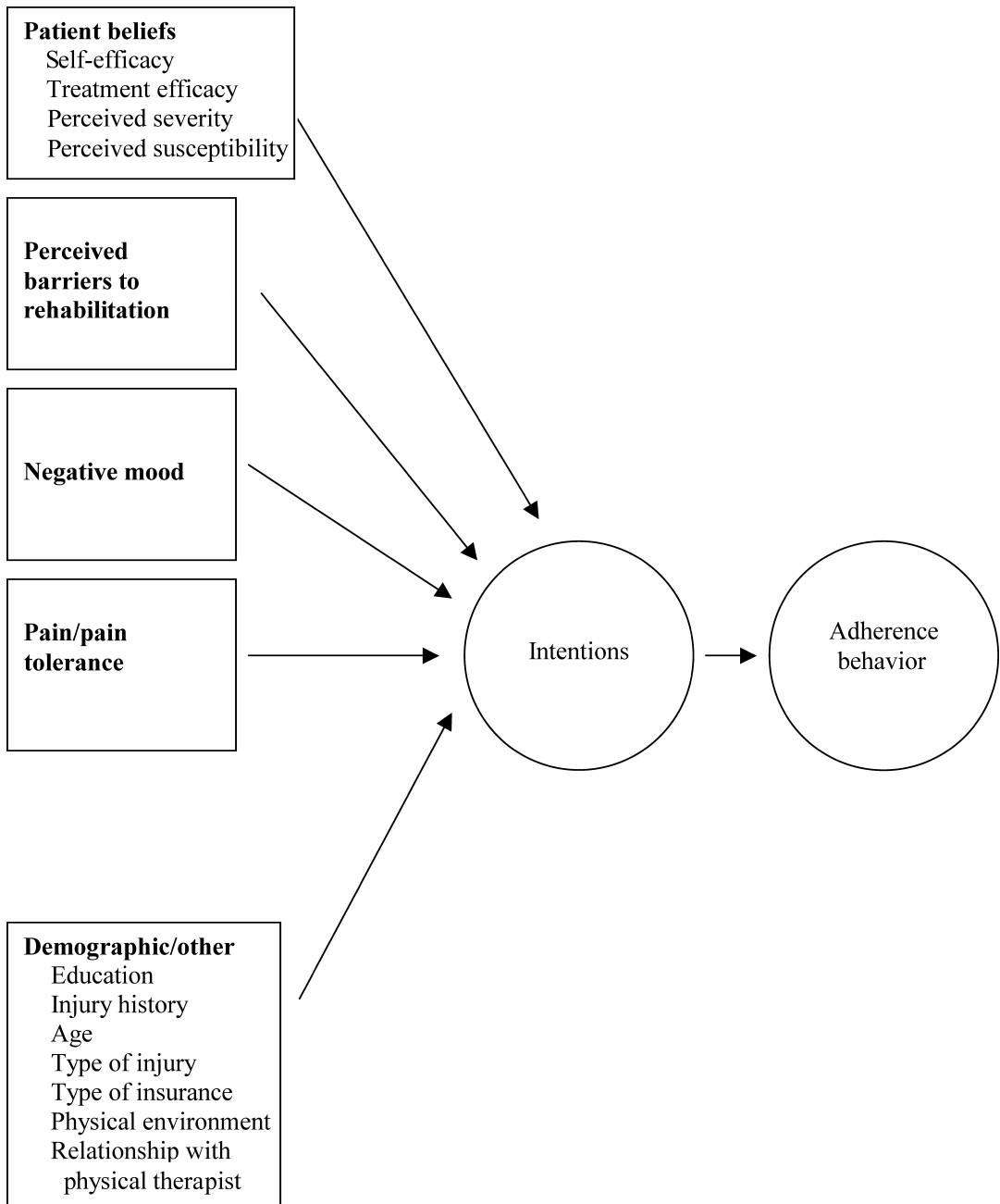


Figure 1. Factors related to injury rehabilitation adherence.

providers with evidence of effective prevention and treatment programs.

Suggestion 3: Develop client-focused approaches to intervention. Obviously, assessment is only the first step in terms of ad-

ressing patient motivation and adherence. A client-centered model ensures that the rehabilitation protocol is molded to the unique needs of the patient (see article by Newcomer and Dacey in this issue for additional

information). Once key barriers and needs are identified, a qualified professional can provide simple feedback during a brief interview with the patient and make subtle alterations to the rehabilitation plan on the basis of the needs of the patient. Some authors familiar with geriatric populations have suggested that the personal interview approach may be more effective than using surveys because of psychometric limitations of various instruments.⁴³ Some sports medicine providers have also found teaching patients mental skills in a group setting to be an effective model of intervention.⁵⁴ The central premise of any approach is to offer patients identified at moderate to high risk for nonadherence educational and counseling services to improve coping skills, reduce barriers, modify negative perceptions, and to develop plans for rehabilitation behaviors. One of the benefits of working with older patients that is often forgotten is that they are typically very self-aware and can draw on a tremendous depth of experience in dealing with daily hassles, grief, stress, and illness. Recognizing and capitalizing on this life experience could be a key to success.

PTs or SMPs with supplemental training or advanced degrees in counseling or psychol-

ogy would be in the best position to evaluate patient needs; however, healthcare professionals often report less competence in this area compared to other areas of practice.^{1,3,30} Competent professionals with specific training in sport and exercise psychology (eg, certified sport psychology consultants, licensed professional counselors, or psychologists) can provide valuable expertise and alleviate the pressure for PTs or SMPs to conduct assessments or interventions that may be out of their areas of practice. Having one or more of these psychology professionals available on staff would be the ideal situation, but many facilities may not be able to afford this luxury. At a minimum, consultants could be employed to conduct assessments and interventions and to provide continuing education in this area to increase the clinical staff's level of competence. With effective interventions in place, it is likely that clinics and rehabilitation centers will see improvements in patient motivation and satisfaction with services. This value-added service, although a break from the norm, has the potential to positively impact both the patient and provider's experiences during the rehabilitation process.

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