Overcoming Athlete Barriers to Rehabilitation Adherence

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- The views expressed in these slides and today's discussion are mine
- My views may not be the same as the views of the AZATA
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Objectives

- Describe common patient barriers to rehabilitation adherence
- Identify and describe available tools to assess common patient barriers to rehabilitation adherence
- Implement patient-specific strategies to reduce patient barriers to rehabilitation adherence into clinical practice to promote positive patient outcomes

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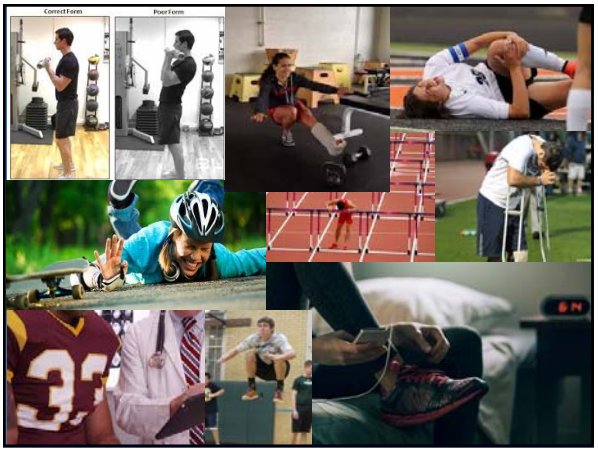

Background

- Musculoskeletal injuries are highly prevalent annually
  - 77% of healthcare visits
  - $176.1 billion in cost
- Approximately 380,000 student-athletes participate in NCAA sports
  - 13.79 injuries/1000 athlete exposure (games)
  - 3.98 injuries/1000 athlete exposure (practices)

(Weintstein, 2000; Jones, 2006; Hootman, 2007)

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Background

- Rehabilitation following musculoskeletal injury is crucial to the healing process
  - Adherence to rehabilitation has been identified as a precursor to improved outcomes
- Despite benefits, patient adherence is low
  - 30-70% of the time patients are non-adherent to prescribed rehabilitation
- Unsuccessful coping behaviors athletes present following injury include:
  - Stress/anxiety
  - Anger
  - Treatment adherence issues

(Fisher, 1993; Sluijs, 1993; Kolt, 2003; Brewer, 2004; Pizzari, 2005; Jack, 2010; Pisters, 2010; Clement, 2013; Holden, 2014)

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Adherence

Rehabilitation *adherence* in athletic training:

"The behaviors an athlete demonstrates by perusing a course of action that coincide with the recommendations of the athletic trainer."

(Granquist, 2010; McKay, 2016)

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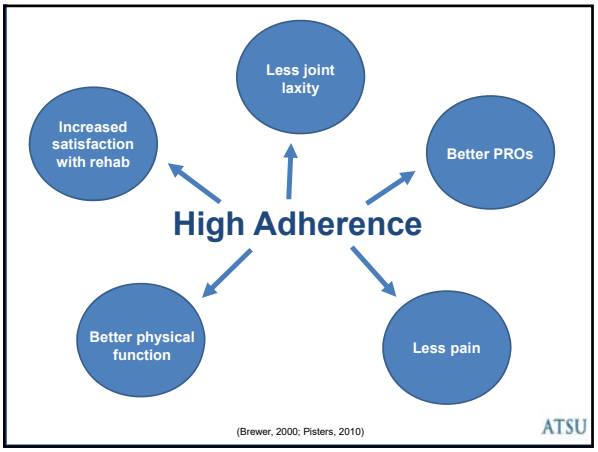

(Brewer, 2000; Pisters, 2010)

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The Adherent Patient

Adherent

- Self-motivated
- Increased social support
- Not bothered by environmental conditions or scheduling
- Strong belief in treatment efficacy

Non-adherent

- Less tolerant of pain
- Tend to be younger

(Fisher, 1988; Duba, 1989; Dishman, 1986; Byerly, 1994; Al-Eisa, 2010; Knox, 2014)

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Barriers to Patient Adherence

Are we evaluating patient barriers??

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Survey of Rehabilitation Clinicians

Purpose of this study was to evaluate ATs' familiarity with and assessment of patient barriers to rehabilitation adherence

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Methods

- Cross-sectional survey based study
- Participants were recruited through the NATA
  - Via email
  - Provided a link to the survey in Qualtics
- Questions types consisted of Likert, single select, multi-select, and rank order questions

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Respondents

- 80 athletic trainers
  - 39 males, 40 females, 1 unreported
  - Age = 39.4 ± 13.4 years
  - Athletic training experience = 15.2 ± 12.3 years
- 90% (n=72/80) reported familiarity with patient barriers to rehabilitation adherence

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Results

- ATs were asked to rank order patient barriers
- "Lack of time" and "forgetting" were the two most common barriers *observed* in clinical practice
- "Increased pain with exercise" and "anxiety/depression" were the most *negatively influential* to patient adherence

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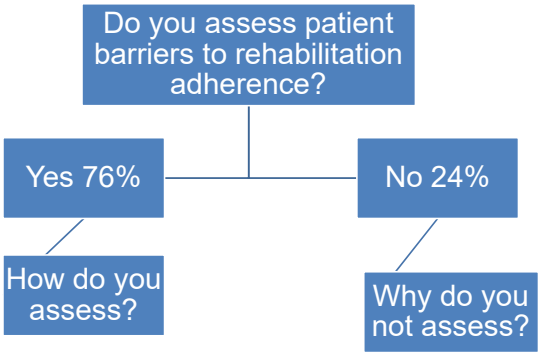

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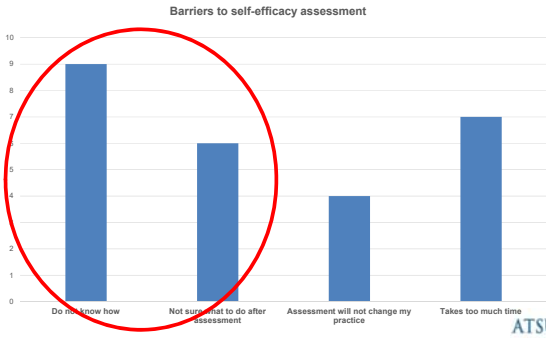
How do you assess the following barriers:

Barrier	Verbal Discussion	Observation of the Patient	Patient Self-Report Questionnaires	I do not Assess this Barrier	Other Method
Anxiety/Depression	50 (63)	22 (28)	12 (15)	4 (5)	2 (3)
Forgetting to complete exercise	56 (70)	25 (31)	2 (3)	0 (0)	1 (1)
Helplessness/lack of independence	39 (49)	21 (26)	8 (10)	12 (15)	0 (0)
Increased pain during exercise	55 (69)	38 (48)	16 (25)	0 (0)	1 (1)
Low Self-Efficacy/lack of confidence	46 (58)	28 (35)	6 (8)	5 (6)	0 (0)
Sedentary/low levels of activity at baseline	30 (38)	26 (33)	11 (14)	17 (21)	1 (1)
Lack of social support	43 (54)	12 (15)	3 (4)	15 (19)	2 (3)
Lack of time	60 (75)	13 (16)	3 (4)	0 (0)	0 (0)

*Counts (percentages)

Why do you not assess patient barriers to rehabilitation adherence?



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Issues…

- Most common methods of barrier assessment = **verbal discussion and patient observation**
  - Problem = not previously identified as reliable or valid methods
- Most common reason for not assessing patient barriers = **not knowing how to assess or what to do with the information**
  - Lack of education in clinical programing

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Now what…?

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Recognize, Assess, Intervene

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Introduction to Measures

1. Clinician-rated
   - Specific to patient adherence to rehabilitation
2. Patient-rated
   - Addresses patient barriers

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Measuring Patient Adherence

- Reliable evaluations of adherence should be multifaceted
  - Clinician observation
  - Objective measures (eg. percentage or ratio of attendance)
  - Patient self-report
- Conduct regularly
- No gold standard

(Brewer, 1999; Bassett, 2003; Frost, 2017)

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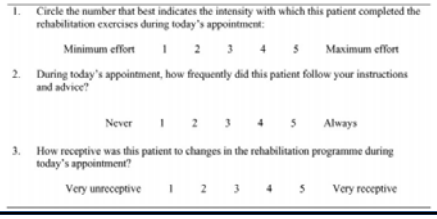
Sports Injury Rehabilitation Adherence Scale (SIRAS)

- Clinician-rated
- Scoring = sum of 3 items (0-15)
- Acceptable internal consistency (α = 0.82) and test re-test reliability (ICC = 0.77, over 1-wk)



1. Circle the number that best indicates the intensity with which this patient completed the rehabilitation exercises during today's appointment:

   Minimum effort 1 2 3 4 5 Maximum effort

2. During today's appointment, how frequently did this patient follow your instructions and advice?

   Never 1 2 3 4 5 Always

3. How receptive was this patient to changes in the rehabilitation programme during today's appointment?

   Very unreceptive 1 2 3 4 5 Very receptive

(Brewer, 2000)

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Rehabilitation Adherence Measure for Athletic Training (RAdMAT)

- Clinician-rated
  - Rate athlete on items 1= never, 2 = occasionally, 3 = often, 4 = always
- 16-items, 3 subscales
  - Attendance/participation
  - Communication
  - Attitude/effort
- Acceptable internal consistency (α = 0.75-0.92)
- Positive and strong relationships with the SIRAS (r = 0.898, p < 0.01)

(Granquist, 2010)

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RAdMAT

Please rate the athlete on each item using the scale: 1 = *never*, 2 = *occasionally*, 3 = *often*, 4 = *always*.

1. Attends scheduled rehabilitation sessions
2. Arrives at rehabilitation on time
3. Follows the athletic trainer's instructions during rehabilitation sessions
4. Follows the prescribed rehabilitation plan
5. Completes all tasks assigned by the athletic trainer
6. Asks questions about his or her rehabilitation
7. Communicates with the athletic trainer if there is a problem with the exercises
8. Provides the athletic trainer feedback about the rehabilitation program
9. Has a positive attitude during rehabilitation sessions
10. Has a positive attitude toward the rehabilitation process
11. Gives 100% effort in rehabilitation sessions
12. Is self-motivated in rehabilitation sessions
13. Is an active participant in the rehabilitation process
14. Stays focused while doing rehabilitation exercises
15. Is motivated to complete rehabilitation
16. Shows interest in the rehabilitation process

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Patient-rated

Addressing common barriers to rehabilitation adherence

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Depression Anxiety Stress Scale (DASS)

- 42-item or 21-item version to assess depression, anxiety, and stress
- 0= does not apply to me to 3= applies to me most of the time
- Completion time 10-20/5-10 mins
- High internal consistency (α = 0.84 -0.97)
- Construct and convergent validity with other depression and anxiety scales

	Normal	Mild	Moderate	Severe	Very severe
Depression	0 - 9	10 - 13	14 - 20	21 - 27	28 +
Anxiety	0 - 7	8 - 9	10 - 14	15 - 19	20 +
Stress	0 - 14	15 - 18	19 - 25	26 - 33	34 +

(Lovibond 1995, Brown et al 1997, Antony et al 1998, Clara 2001, Page 2007)

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Sports Injury Rehabilitation Beliefs Scale (SIRBS)

- 19-items
  - Rehabilitation value
  - Perceived severity
  - Perceived susceptibility
  - Treatment efficacy
  - Self-efficacy
- 7-point Likert scale
  - (1= very strongly disagree to 7= very strongly agree)
- Scoring = sum of all constructs
- Acceptable internal consistency (α = 0.63-0.83)
- Some evidence for construct validity

(Taylor and May, 1993 & 1995)

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Self-Efficacy for Rehabilitation Outcome Scale

- 12-items measure the patient's beliefs about whether he/she can perform behaviors typical in rehabilitation
  - 2 subscales: self-efficacy in overcoming barriers and self-efficacy for rehabilitation therapy exercises
  - 0 (I cannot do) to 10 (certain I can do)
- Scoring = mean of 12-items
- High internal consistency (α = 0.94), excellent external validity

(Stevens, 2005; Waldrop, 2001)

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Fear Avoidance Beliefs Questionnaire (FABQ)

- 16-items originally created to assess patient's beliefs about how physical activity and work would affect their low back pain
- Scoring
  - Scale 1 (work)- items 6, 7, 9, 10, 11, 12, 15
  - Scale 2 (physical activity)- items 2, 3, 4, 5
- High test-retest reliability, good internal consistency (α = 0.88 and 0.77)

(Waddell, 1993)

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Athletic Fear Avoidance Questionnaire

- 10-items measuring injury-related fear avoidance in athletes
  - 5-point Likert scale (1, not at all to 5, completely agree)
- Scoring sum all items (10-50), higher score = high fear avoidance beliefs
- Good internal consistency (α = 0.81)
- Concurrent validity established with PCS and FABQ (r = 0.28-.59)
- Completion time >2 mins

(Dover, 2015)

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Pain Self-Efficacy Scale

- 10-items related to pain during ADLs, work, socializing, hobbies
- Completion time = a couple of mins
- Total score = 60 points
  - High score = higher pain self-efficacy
- High internal consistency (α = 0.92) and reliability

Please rate how **confident** you are that you can do the following things at present, **despite the pain**. To indicate your answer circle **one** of the numbers on the scale under each item, where 0 = not at all confident and 6 = completely confident.

For example:

0	1	2	3	4	5	6
Not at all Confident						**Completely confident**

(Nicholas, 1989 & 2007)

Pain Catastrophizing Scale (PCS)

- 13-items
  - Rumination, magnification, and helplessness
- "When I'm in pain…"
  - 5-point Likert scale (0, not at all to 4, all the time)
- Completion time and scoring >5 mins
- Scoring = sum of responses; 0-52
  - Higher scores = more intense pain, higher levels of pain behavior and disability, more severe depression and anxiety
- Adequate internal consistency
  - (α: total PCS = .87, rumination = .87, magnification = .66, and helplessness = .78)

(Sullivan, 1995, 1998, 2000, 2006; Keefe, 2000)

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Social Support Survey Instrument

- 19-item or 8-item modified version to assess social support
  - *Tangible support (Mod)*
  - *Emotional/informational support (Mod)*
  - Positive social interaction
  - Affection
- Very good internal consistency (α = 0.88-0.93) and good construct validity
- Scoring = average of each subscale OR to compare to published means use the following:

$$100 \times \frac{\text{(observed score - minimum possible score)}}{\text{(maximum possible score - minimum possible score)}}$$

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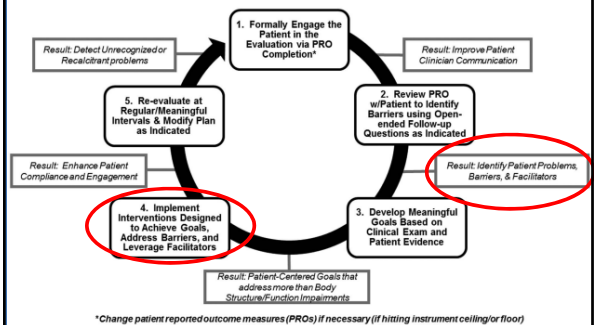
When to use?



*Change patient reported outcome measures (PROs) if necessary (if hitting instrument ceiling/or floor)
*At Return-to-Sport AND Discharge re-evaluate with all utilized PROs

(Howard, 2018)

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Slide 31

KP2 relate this back to my study!!
Kelsey Picha, 1/18/2019

Interventions to Improve Patient Adherence

- Use supporting materials
  - Provide written and illustrative material
- Cognitive Behavioral Interventions
  - Address attitudes, beliefs, behaviors related to physical activity
- Motivational programs
  - Link long-term goals with manageable short-term objectives
- Goal setting interventions
  - Must teach patients how to monitor and restructure goals when necessary

(Gohner, 2006; McLean, 2010; Coppack, 2011; Knittle, 2012)

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Intervene Based on Patient Barriers

Depression, Anxiety, Stress

- Create a welcoming environment
  - Provide a safe, clean, and organized space
- Educate the patient
- Teach/encourage positive self-talk
- Advise on healthy coping strategies

Lack of Social Support

- Provide additional reminders about rehabilitation appointments
  - Via text or email
- Engage teammates and coaches
- Partner patients together
  - Accountability
  - External motivation

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Intervene Based on Patient Barriers

Lack of Positive Feedback

- Provide feedback, encouragement, and praise
- Consider timing and avoid empty praise
  - Be genuine

Fear of Movement/Avoidance

- Control pain during movement
- Educate patient proper form/technique
- Ensure they understand they can do no further harm
  - Be a model or find another patient that is similar and willing to be an example

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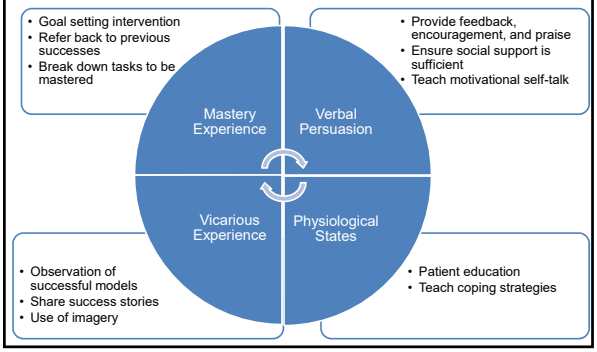
Intervene Based on Patient Barriers

Low Self-Efficacy



Case Example

- Soccer athlete with 2nd ACL tear
- Previous rehabilitation was successful
- Portrays lack of confidence, anxiety while in ATF, and a pessimistic attitude during rehabilitation

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Potential Solutions

- Review low scoring items
- Discussion with patient
  - Low scoring items
  - What do they think would lead to successful completion of rehabilitation

- Provide a mastery and vicarious experience with verbal persuasion
  - Provide reminders of previous rehab success and break down difficult tasks
  - Use models
  - Positive feedback
- Check-in/re-evaluate regularly

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Take Home Messages

- Recognize and assess!!
- Method of barrier assessment is important
  - Use a reliable and valid measure!
  - Make sure it is patient specific
- Be creative with your interventions and refer when needed

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Thank you!

Kelsey Picha, PhD, ATC
Post-Doctoral Fellow
Research Support

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