Overcoming the Biggest Hurdles:
Getting Patients into Cardiac Rehab and
Other Wellness Programs. Then Keeping
them Exercising Once they Finish Rehab

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Learning Objectives

• Identify current referral and adherence rates for cardiac rehabilitation, as well as the general fitness standards.
• Detail various models that are currently being used for cardiac rehabilitation or general wellness programs.
• Describe the barriers that a patient faces in both the enrollment in and the maintenance of a cardiac rehab or wellness program.
• Identify possible strategies that could be utilized in an attempt to address or alleviate the barriers that a patient encounters.
• Describe key components of methods that could increase adherence to rehab or wellness program and exercise after rehab is completed.
Schedule

• Intro and review of adherence rates for general fitness and cardiac rehab programs.
• Current models of phase II cardiac rehab programs and other wellness or medical gym models.
• Barriers to cardiac rehab or wellness program
• Current general fitness attempts at improving compliance with exercise.
• Models that may be able to increase compliance or adherence to cardiac rehabilitation/wellness program
• Motivational enhancement strategies
Adherence/Compliance

Pamela Bartlo, PT, DPT, CCS
Adherence Rates General Fitness

• 2012: More than 1 in 10 people (11%) signed up for a gym as part of a New Year’s Resolution – and quit before the year was over.¹
  –Women more likely to quit than men: 14% and 8% respectively
  –This Harris Interactive Survey showed 80% of those that quit did so in the first 5 months.

• Some reports are at least 50% of those that start exercise will drop out in first 6 months.²
The Gallup-Healthways Well-Being Index classifies and ranks all 50 states on five health related categories.

- They are already showing that adults reporting that they exercise at least 30 min at least 3 days/week for:
  - January 2013: was 47.7% vs 49.1% in 2012.
  - June 2013: 53.8% which was decreased from 2012 55.2%³
Rates of Referral to Cardiac Rehab

• Anecdotally heard rates of less than ½ eligible pts are referred to CR
• Studies have shown 15-25% referral to CR
• AHA study showed only 56% referred.
• One study showed over 1/3 pts undergoing percutaneous intervention (PCI) not referred to cardiac rehab (CR) at all.
CR Among Minorities and Women

- Minorities much less likely to be referred and to begin CR
  - Rates from 35 - 77% less likely.\textsuperscript{4,8,9}
- Women less likely to be referred
  - Rates from 1-27% less.\textsuperscript{5,7,10}
Rates of Initiation of CR

• Anecdotally heard rates that \( \frac{1}{2} \) or less of those pts referred to CR ever begin the program.
• Brand new study showed 67% of those referred in Wisconsin group enrolled. \(^{11}\)
  – Normal???
• Study in American Journal of Cardiology just a few years ago showed only 10-15% enroll. \(^{12}\)
• Another study showed 59.4% enrolled. \(^{8}\)
Compliance or Completion of CR

• Rates similar to general fitness
• No **TRUE** completion rates available, but most CR centers asked stated about 2/3 of those enrolled don’t complete ALL sessions.
• Rates of compliance after rehab about the same as general adults too.\textsuperscript{11}
Models of Phase II
Cardiac Rehab

Paul Ricard, PT, DPT, CCS
Why Cardiac Rehabilitation (CR)?

• Class I evidence for\textsuperscript{13,14}
  – Coronary Artery Disease (CAD)
  – Chronic Heart Failure (CHF)
• Multidisciplinary and multifaceted approach to overall cardiovascular risk reduction, more than exercise\textsuperscript{15}
Alternative Models of Cardiac Rehabilitation\textsuperscript{16,17,18}
Multifactorial Individualized Telehealth

- Program characteristics
  - Brief phone conversations spread out over the program
  - Examples include CHOICE and COACH programs

- Outcomes
  - Similar to traditional CR
  - Some outcomes sustained >24 months
  - Increased satisfaction
  - Coaching had magnitude of effect = lipid lowering drugs
Internet-based

• Characteristics
  – Web-based interactions and education
  – 30min/week for 6 weeks
  – Examples
    • E-CHANGE
      – Case manager to track progress, communicate

• Outcomes
  – Fewer CV events with estimated $1418/patient
  – Increased weight loss
  – Similar risk factor reduction
Telehealth Focused on Exercise

• Characteristics
  – Home-based exercise for 15-28 days
  – Daily phone calls

• Outcomes
  – Significant increase in 6MWT
  – 95% patient satisfaction
  – Compared to traditional CR

• Outcomes were variable (some better, some the same)
Telehealth Focused on Recovery

• Characteristics
  – Introductory session 1-2 days prior to discharge
  – 4 phone calls over following 6 weeks
  – Individually tailored content included all core components of traditional CR

• Outcomes
  – No significant effect on psychosocial adjustment, anxiety, or depression
  – Variable findings on
    • Utilization of healthcare services
    • Functioning
    • Physical activity
Community- or Home-based\textsuperscript{18}

- Characteristics
  - Multimedia education and exercises
  - Most had phone calls from advanced NP’s
  - 1 study use pedometer

- Outcomes
  - Home-based had ↓ direct costs after adding patient costs
  - ↓ readmissions
    - Estimated $5716 savings
  - No significant differences in mortality or CV events
HBCR vs In-Hospital CR after Cardiac Surgery: Non-Randomized Controlled Study

- Compared exercise capacity in the above groups-participants at low-moderate risk for early mortality post-surgery

- Bottom line- HBCR effective and comparable to INCR- when complemented by telemedicine service
Rural, Remote, Cultural & Linguistically Diverse\textsuperscript{18}

- Characteristics
  - Similar to home- or community-based programs
    - Example = Heart Manual

- Outcomes
  - Improvements noted in more core areas at 6 months
Multiple Models of Care

• Characteristics
  – Studies used or evaluated other forms of CR and compared to traditional CR

• Outcomes
  – Hospital-base CR is cost effective
  – Home-based CR was no different than hospital-based CR
  – Home-based CR is more cost effective than no CR
Complementary and Alternative Medicine

• Interventions included
  – Expressive writing
  – Chinese Qigong
  – Wu style Tai Chi
  – Peer support
  – Acupuncture
  – Transcendental meditation
  – Chelation Therapy

• Outcomes
  – Qigong and Tai Chi are alternatives for those who are limited
  – Meditation reduced stress
  – Insufficient evidence existed for acupuncture or alternative therapy (Chelation)
Summary of Systematic Review

- Community-based and telehealth-based individualized and multifactorial models of CR improve CV risk factors similar to traditional CR
- Brief interventions which encouraged autonomy and choice had long-lasting effects
Recommendations of Systematic Review\textsuperscript{18}

• Home-based programs could accommodate more high-risk, post-surgical patients with telemonitoring and expensive equipment
• Be flexible and individualize CR prescriptions and interventions
• Engage the person in the process of rehabilitation
Models of Wellness

Pam
Wellness and Medical Gyms

- CR Phase III Wellness
- Wellness Models
- Medical Gyms
CR Phase III Models

• Many phase II facilities offer phase III rehab – maintenance
• Same facility, equipment, staff.
• Pts just can’t with ex on their own.
• Pay is anywhere from $2-$7 per session.
• Some places charge by session, some by month.
• This is typically for 3 days/week for general fitness gym equipment (treadmill, bike, rower, weights, recumbent stepper, etc.)
Benefits of Phase III CR

• Benefits
  – Comfortable with staff and facility
  – Medical staff present
  – Medical staff familiar with pt
  – Camaraderie with other pts.
Drawbacks of Phase III CR

- Pt must pay on own
- Pt may not push themselves and stay at same level
- Lack of variety in ex routine
General Wellness Models

• Locations: Senior Centers, PT Clinics, Community groups, Companies, Schools, other groups

• Set up:
  – Facility may be used for other non-fitness related activities and then wellness at scheduled times
  – May have wellness equipment available at all times, but scheduled group work at specific times

• Cost:
  – Some free, some per month, some per activity
Benefits of Wellness Models

• Benefits:
  – Convenient and comfortable
  – Low cost or free (typically $2-12 per session)
  – May look at all facets of wellness, not just ex.
  – May foster “community” feel
Drawbacks of Wellness Models

• Drawbacks:
  – May not foster “community” feel
  – Cost
  – Lack of variety, availability of ex choices
  – Typically no medical screening
  – May or may **NOT** have true qualified staff
Medical Gyms

• Person is seen by medical staff first, program designed and supervised for a short period, person then ex at that location from then on.
  – Similar to phase III rehab, but open to more people than just cardiac pts.
• Medical Fitness Association: National organization to help promote/assist medical fitness facilities or practitioners
• Buffalo alone:
  – MOG (Medically Oriented Gym)
  – Buffalo Cardiology and Pulmonary Associates - Get Healthy Program
Benefits of Medical Gyms

• Benefits:
  – Staffed with medical professionals
  – Fitness program that takes into account medical comorbidities
  – Variety of equipment, classes, etc.
  – Integration with non “ill” people
  – Usually track attendance more and will follow up with lack of attendance
Drawbacks of Medical Gyms

• Drawbacks:
  – Cost: usually similar to fitness gyms, but may be more due to medical staff availability (approx. $10-50 per month)
  • One program charges $300 per month for a 3 month program that gives full medical access and individualized training, then cuts back to around $50 per month for regular medical fitness location and treatment
  – Integration with non “ill” people
  – May or may NOT foster “community” feel
  – Transportation or not convenient
Why is compliance so low?

Paul
Why Such Abysmal Admission and Compliance Rates?\(^{19}\)

**European Journal of Cardiovascular Prevention & Rehabilitation**

- Class I & II supporting cardiac rehabilitation for myriad of health conditions before and after medical and surgical interventions
Processes and Factors That Influence Decisions to Complete Programs

Barriers

Individual
- Identity & Self
- Negative Views & Reactions to Health Services
- Views & Reactions to Heart Disease

Contextual
- Distance & Transport Issues
- Lack of Family Support
- Gender Roles & Ethnicity
Factors Impacting Participation in CR

• These people are not like me! CR is for people who are:
  – Sick, Old, Unfit, Took risks, Need goals prescribed for them

• Men/Women = Mars/Venus
  – Men view other people who participated in programs as being different to themselves
  – Women disliked being center of attention

• Felt would increased stress on other family members or dominated family life
Men/Women = Mars/Venus

- Women
  - Lack of social support
  - Insensitive to cultural
  - Did not harness women’s expertise in own care
  - Too much emphasis placed on frequent weighing
  - Preferred individualized care > group-based sessions, women-only programs, or more varied exercises that did not need equipment.

- Men
  - CR too standardized to meet needs
Negative Views & Reactions to Health Services$^{20}$

- Information inconsistent, badly timed, cajoling
- Health professionals excessively intense, judgmental, & lacking in cultural sensitivity
- Services poorly organized, too narrowly focused, badly timed, generally unsuitable, not beneficial, less effective than surgery
Views & Reactions to Heart Disease

• Do not identify with
  – Health condition
  – People who have similar conditions

• Feel that
  – Heart disease is not a significant issue
  – Does not impact their daily lives
Barriers to CR Participation

• Distance & Transport Issues
  – Increased distance from home was more difficult for all genders
  – Women
    • More lived in rural setting
    • Increased distance
    • Increased time
    • Needing to drive
  • Lack of family support
  – Women less likely to receive family support
Gender Roles & Ethnicity

• Conflicted with women’s occupational demands & other social roles (child care, housework, family life)
  – Time conflicts
  – Reduced energy to participate
  – Perceived responsibilities to other family members

• Programs seen as “men’s clubs”

• Some ethnicities felt exercise was “sinful”

• Fail to sufficiently include different languages, cultures, and clothing preferences while exercising
Processes and Factors That Influence Decisions to Complete Programs$^{20}$

Facilitators

- Individual
  - Perceived Benefits of Exercise
- Contextual
  - Access
  - Social Networks & Benefits
  - Program Components
    - Educational Content
  - Program Components - Monitoring & Safety
Perceived Benefits of Exercise by Gender

- Sustained in women who had a positive experience with exercise and its benefits
- Men found increased benefits and lessened the disbelief of what happened to get them there
Perceived Benefits to CR

• Access
  – Greater sense of control
  – Support around transportation

• Social Networks & Benefits
  – Enhanced social camaraderie with other participants
  – Increased confidence
  – Supported mutual problem-solving
Program Components - Educational Content

- Content raised awareness
- Increased response when combined with supportive family and social contexts
- Challenged negative misconceptions of heart disease
- Members could ask questions freely and hear responses from other participants
• Encouragement and ongoing assessment were supportive and reassuring
• Perception of service providers as knowledgeable and capable were also reassuring
Clinical message

- Participation as a complex consumer behavior.
- Perceptions and knowledge influence participation less.
- Harness social marketing approaches and mobilize family support.
Other Methods to Increase Participation

– Marketing programs
– Advertising CR programs as multiple risk reduction programs
– Consider alternate models (e.g. home-based)
– Physicians must buy into and actively support CR for all patients
– CR occurs no less than 3 weeks after event

– Increased resources towards diet to facilitate behavior change
– Populations with known risk factors for nonadherence or nonparticipation are targeted early
– Rehabilitation flexible to cater towards individual personalities, varying functional capacities, and gender differences.
Further Research^{22,23,24}
Models or Concepts Wellness/Fitness Groups are Trying to Increase Adherence
Fitness Gyms

• Apps for gyms: usually only the big national gyms. Gives you locations, class times, and you can input when you attend to track it.

• New classes to encourage new interest
  – Boot camp, Zumba, Pilates – all trends over the past 5 years

• More one-on-one training included in fee: many gyms give 1-3 sessions with personal trainer when you first join.
Fitness Gyms Cont’d

- Return to basic, yet high intensity exercises—Crossfit
- Give-aways—i.e. win a session with a personal trainer, free smoothie of the month, etc.

*Common unspoken truth among fitness industry that gyms don’t really care if people come or not, they just want their membership fee.*
Smart Technology to Help Us (Apps)

- **Human move 30 min or more**: tracks outdoor walking until you hit 30 min, doesn’t count indoors
- **Accupedo**: accurate pedometer to track walking
- **Fitocracy**: turns workouts into video game like experience
- **Fitbit**: pedometer, also monitors calories burned, food eaten, and hours you sleep
- **My Fitness Pal**: calorie counter, but you also put in exercise so may be good for someone who’s main exercise motivator is weight loss as main motivator for ex
- **Map my run/walk/hike**: You get the app for the activity you are doing (walking, running, etc.) App uses GPS to track distance, speed, time, etc.
- **Gorilla workout** – app gives you an ex program to do at home
Wellness Programs

- Individualized tracking:
  - Daily mark offs for attendance, weekly phone calls, set interval re-evaluation and adjustment to program, etc.
  - One study just for general ex in older women used home visits, phone calls, meetings if adherence dropped off. Results: 71% continued to ex, but only 17% met the intensity guidelines.²⁶
Wellness Programs Cont’d

• Incentives and Rewards:
  – One Meta Analysis of rewards programs found\(^25\)
    • Much greater adherence with set reward vs. chance or lottery based reward
    • Incentives increased adherence vs. no incentive
    • Escalating amount of incentive increased adherence
  – Higher cost/ lower costs
    – Some people trying to do low cost to improve adherence
    – Some feel you need to have “skin in the game”
    – No real data on either one that I could find.
Wellness Programs Cont’d

• New types of programs:
  • Many different studies on exergaming in children, adults with disabilities, and older adults. One study showed exergaming increased adherence in a rural area.\textsuperscript{26}
  • Also, water aerobics, yoga for seniors or children, dance classes for exercise (other than Zumba), etc.
• How the study is initiated:
  — Faith based\textsuperscript{27}
  — Specific MD\textsuperscript{28}
Medical Gyms

- As per earlier
- Trying to get more medically complex people into physical activity
- Have a lot more individual attention and monitoring, but still use “gym” environment
Models or Concepts That Will Increase Compliance or Adherence to Cardiac Rehab

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A qualitative systematic review of influences on attendance at cardiac rehabilitation programs after referral

Alexander M. Clark, PhD, a Kathryn M. King-Shier, PhD, b David R. Thompson, PhD, c Melisa A. Spaling, MEd, a Amanda S. Duncan, MA, a James A. Stone, MD, PhD, d,e,f Susan B. Jaglal, PhD, g and Jan E. Angus, PhD h

Alberta, and Ontario, Canada; and Melbourne, Australia

Influences on attendance to CR after referral - A Systematic Review

• ½ of patients referred to programs do not participate
• SR using qualitative meta-synthesis
• Attendance decisions influenced by social factors more so than clinical information and/or health professional advice
Compliance and Adherence

• Predictors of long-term exercise adherence in a community-based sample of older women.²⁹

Compliance and Adherence


ORIGINAL ARTICLE

Who is not adhering to physical activity referrals, and why?

MATTI E. LEIJON¹, JOHAN FASKUNGER², PREBEN BENDTSEN³, KARIN FESTIN³ & PER NILSEN³
Compliance and Adherence

- Self-reported compliance to home-based resistance training in cardiac patients.\textsuperscript{30}
Compliance and Adherence

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Women’s and Men’s Exercise Adherence after a Cardiac Event:
Does Age Make a Difference?

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Abstract
Compliance and Adherence

• Can low risk cardiac patients be 'fast tracked' to Phase IV community exercise schemes for cardiac rehabilitation? A randomised controlled trial.\(^\text{31}\)

• Robinson HJ, Samani NJ, Singh SJ. *Int J Cardiol.* 2011 Jan 21;146(2):159-63.
Compliance and Adherence

• Exercise motives of long-term phase IV cardiac rehabilitation participants.\textsuperscript{32}

Effects of a Pedometer-Based Intervention on Physical Activity Levels After Cardiac Rehabilitation

A RANDOMIZED CONTROLLED TRIAL

Lyra Butler, BHM (Hons), Susan Furber, PhD, MPH, Philayrath Phongsavan, PhD, MPH, Andrew Mark, BSc (Hons), and Adrian Bauman, PhD, MPH, MBBS
Effects and costs of home-based training with telemonitoring guidance in low to moderate risk patients entering cardiac rehabilitation: The FIT@Home study

Jos J Kraal¹*, Niels Peek¹, M Elske van den Akker-Van Marle² and Hareld MC Kemps¹,³
Motivational interviewing and exercise programme for community-dwelling older persons with chronic pain: a randomised controlled study

Mimi MY Tse, Sinfia KS Vong and Shuk Kwan Tang
ORIGINAL ARTICLE

Telephone Support Oriented by Accelerometric Measurements Enhances Adherence to Physical Activity Recommendations in Noncompliant Patients After a Cardiac Rehabilitation Program

Thibaut Guiraud, PhD, Richard Granger, MSc, Vincent Gremeaux, MD, PhD, Marc Bousquet, MD, Lisa Richard, MD, Laurent Soukarié, MD, Thierry Bab, MD, Marc Labrunée, MD, Frédéric Sanguignol, MD, Laurent Bosquet, PhD, Alain Golay, MD, Atul Pathak, MD, PhD
One-Year Adherence to Exercise in Elderly Patients Receiving Postacute Inpatient Rehabilitation After Cardiac Surgery
Evaluation of a newly designed shirt-based ECG and breathing sensor for home-based training as part of cardiac rehabilitation for coronary artery disease

Erik Skobel¹,², Alvaro Martinez-Romero³, Britta Scheibe¹, Patrick Schauerte², Nikolaus Marx², Jean Luprano⁴ and Christian Knackstedt⁵
A self-regulation lifestyle program for post-cardiac rehabilitation patients has long-term effects on exercise adherence

Veronica Janssen · Veronique De Gucht · Henk van Exel · Stan Maes

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Effects of a DVD-Delivered Exercise Intervention on Physical Function in Older Adults

Motivational Interviewing

Paul
Motivational Enhancement Strategies

- Cognitive Behavioral Therapy
- 12-step Facilitation Approach
- Motivational Interviewing (MI)
- Motivational Enhancement Therapy (MET or MI PLUS)
12-Step Facilitation Approach

• Use a journal and reading assignments
• Structured format
  – Symptoms inquiry, review & reinforcement for participation, introduction and explication of week’s theme, setting goals for the following week
Cognitive-Behavioral Coping Skills Therapy

• Focus on alcohol
• Based on social learning theory
• Emphasis on overcoming skill deficits and increasing ability to cope with high-risk situations
• Skills provide a means of obtaining social support
Motivational Interviewing

• Express empathy
• Develop discrepancy
• Roll with resistance
• Support clients’ self-efficacy
Motivational Enhancement Therapy

• Sessions 1 & 2
  – Focus on structured feedback from initial assessment, future plans, and motivation for change
• Sessions 3 & 4
  – 3 = at midpoint, 4= at end of treatment
  – Reinforce progress, encourage re-assessment, provide objective perspective on the process of change
Summary

• Know the traditional rehab and wellness formats.
• Understand the barriers to accessing these programs
• Explore new options or models for CR or wellness delivery
• Use Motivational Interviewing to help improve exercise adherence
Thank you

Questions??????

If I could have a super power, it would be the ability to watch people workout & then absorb their health benefits.


References Cont’d


