Coping with stress in the most remote part of the world – Antarctica

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Learning objectives

• Understand sources of stress
• Recognize manifestations of stress
• Appreciate coping methods
• Understand debriefing procedure and outcome
Overview

• Introduction
• Past expeditions
• McMurdo
• Stress
• Debriefing
Introduction:

• **Where:** McMurdo Station, Antarctica
• **When:** “Winfly” refers to the winter fly-in by Navy aircraft of personnel and supplies needed to prepare the station for the upcoming summer season (August).
Minnesota vs. Antarctica

• **Highest point:**
  Eagle Mountain     Vinson Messif
  2,301 feet         16,066 feet

• **Lowest point:**
  Lake Superior      Bentley Sub glacial Trench
  600 feet           -8,382 feet

• **Coldest temperature:**
  Embarrass Tower    Vostok Station
  -60 (2-2-96)       -128.6 (7-20-83)

• **Warmest temperature:**
  Moorhead           Hope Bay
  114 (7-6-36)       63.5 (3/24/15)

• **Annual precipitation average:**
  33.92 in.          6.5 in.
Dealing with stress in cold climates

- Positive self-talk
- Daily relaxation (yoga, meditation)
- Activities
  - Walk, explore
  - Bowling
  - Read
  - Listen to music
  - TV or movie
  - Play cards or board game
  - Talk with friends
  - Computer
  - Toast masters
  - Church
  - Photography
  - Sew, knit or crochet
History of Antarctica Expeditions

• Belgica expedition 1898-99
• Scott and Amundson’s Race to the South Pole
• Air Age 1920s
1940s and 1950s

• Construction of permanent stations
• Sophisticated research
• Transportation and communication improvements
• International cooperation and competing territorial claims
Antarctic Treaty 1961

- Quality of life improved secondary to technology and construction
Today

• Sixteen nations operate more than 50 year-round stations
McMurdo

- Center of the United States Antarctic Program
- Like a small town in Alaska or the Pacific northwest
- Hodge-podge of buildings
Personnel

• 156 - 1,200

• U.S. Navy (air transport, communications, weather forecasting, recreation, supplies and food services)

• American and New Zealand Army and Air Force (cargo handlers and pilots)
Personnel (continued)

- NSF (administrative personnel, grantees)
- ASA (administrative personnel, construction workers, trades people, technicians)
- Catering service (food service workers)
Climate

- Cold
- Total darkness from February through August
Sources of stress in Antarctica

• 1. Isolation
• 2. Confinement
• 3. Environment
Isolation

- Physically located between February and August at McMurdo
- Darkness and weather conditions prevent travel
- Separation from family and friends lead to emotional deprivation
- Personal crisis becomes magnified
- Tension or conflict with external organizations or agencies
Confinement

- Lack of isolation within the station
- Lack of environment stimulation
- Interaction with limited number of individuals
- Reduction in gratification of “basic” needs like affection, security and feelings of personal significance
Confinement (continued)

- Absence of statuses and roles which define one’s social position in the outside world
- Lack of privacy
- Constant gossip
- Little separation between work and leisure may increase social conflict
- Travel outdoors is limited
Environment

- Extreme lows/dark cycles
- Very low humidity
- Extreme cold
- Physiological responses
Physiological responses

- Sleep
- Circadian rhythm disturbance
- Dyspnea
- Arterial hypoxia
- Headaches
Physiological responses (continued)

- Hypocapnia
- Erythrocytosis
- Mild alkalosis
- Immune system suppression
- Thyroid function disruption
Winter-Over Syndrome

- First reported by Frederick Cook, Belgica
- Most common condition
- “Long eye” or the Antarctic stare
Winter-Over Syndrome (continued)

• Multiple etiologies (stressors)
• Symptoms peak at mid winter, decline during the third quarter and increase at the end of winter-over
• Winter-Over Syndrome may represent various stages of the general adaption syndrome
McMurdo

- Sleep disturbance (64.1 percent)
- Depressed mood (62.1 percent)
- Irritable mood (47.6 percent)
- Decreased concentration (51.5 percent)
Other diagnoses

• Psychosis (rare)
• Suicide attempts – less frequent than continental United States
• Mood disorder – sometimes
Psychological debriefing report of McMurdo

- October 2, 1997
Debrief results

- 154/156 completed the winter-over
- One person died
- Six people left at Winfly
- 22 of 22 military completed debrief
- 58 of 124 civilians completed debrief
- 80 of 156 total personnel completed debrief
Debrief results

- Overall winter-over went well
- Death brought the smaller community together
Several activities and resources available

- Chapel
- Music
- Recreation
- Socializing
- E-mail
- Telephone
Several activities and resources available (continued)

• Exercise
• Reading
• Correspondence courses
• Outdoor travel
• Television
• Private rooms
Issues

• Food
• Leadership
• Alcohol
• Staffing
• Work
• Recreation
• Communication
Clinical problems

• Three personnel required additional clinical observation
Case #1

• 28 year old civilian male suffered a relationship breakup

• Diagnoses: other life circumstance problem; cannabis dependence, in remission; dependent and borderline traits

• Tx – Brief supportive psychotherapy
Case #2

- 40 year old U.S. Navy male encountered divorce, two relationship rejections and denial of his request for early retirement
- Diagnoses: Adjustment disorder with depressed mood; dependent personality disorder
- Tx – Brief supportive psychotherapy
Case #3

• 42 year old U.S. Navy male experienced an increase of alcohol consumption, various somatic complaints (insomnia, anxiety, tremor, GI complaints and loss of desire PCS orders)

• Diagnoses: Alcohol dependence; Alcohol withdrawal

• Tx – Valium for alcohol withdrawal, tremor; Trazodone for insomnia; mulit-vitamins, thiamine for alcohol withdrawal; supportive therapy. Level III Treatment was recommended