

SPACE NURSING



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INTRODUCTION

Space nursing is the nursing speciality that studies how space travel impacts human response patterns. Similar to space medicine, the speciality also contributes to knowledge about nursing care of earthbound patients.

THE CHALLENGE of SPACE NURSING



The challenge is to have man living and working in a permanently based space station. Nursing is on the threshold of expanding the health care role to man's adaptation in outer space. Elements of man's physiologic and psychologic responses are involved in determining the most productive use of man and machines in the space environment. Curricular considerations for a career in space nursing are being explored. The projection of possibilities for practice of space nursing can produce effective contributions toward health care maintenance of the space station personnel. The challenge for nursing is to become a collaborating team participant in the exploration of living and working in space.

HISTORY

Since the beginning of commercial aviation in the 1920s, nurses have been part of aviation and flight. In 1958, President Eisenhower signed the National Aeronautics and Space Act to form NASA. Part of this act was to recruit nurses to work closely with medical teams to determine the fitness of astronauts for space exploration. Nurses helped observe the effects of spaceflight on astronauts upon their return from missions.

First Nurse to "NASA'S FIRST ASTRONAUTS"

"Dee O'Hara was born in Nampa, Idaho in 1935. Dee was with the first seven Mercury astronauts and continued on with the other astronauts through the Gemini, Apollo and Skylab programs. During the last Skylab mission, she transferred out to Ames Research Center in Mountain View, California. The flight crews invited her back to participate in the Apollo- Soyuz Test Program (ASTP) and the first shuttle flight in 1983. Dee saw all the launches from the first Mercury launch through the first shuttle launch.

Lt Dolores O'Hara and Lt Shirley Sineath were the first nurses assigned to work with the first seven Project Mercury astronauts. They worked to develop emergency hospital kits for the astronauts. These nurses had to ensure that the astronauts could manage casualties, plan for disaster control, and provide first aid in the event of an emergency.

In 1962, NASA announced the Space Nursing Program which required applicants to have a previous bachelor's degree in nursing.



THE SPACE NURSING SOCIETY

In 1991, THE SPACE NURSING SOCIETY was founded by Linda Plush with the help of Dr. Martha Rogers. It is based on Rogers' Theory, the Science of unitary human beings. The Space Nursing Society is an international space advocacy organization devoted to space nursing and space exploration by registered nurses.

The society is an affiliated, non-profit special interest group associated with the National Space Society. The society was founded in 1991 and has members from around the world including Australia, Canada, Czech republic, England, Germany, Greece, Scotland and the United States. The society serves as a forum for the discussion and study of issues related to nursing in space and the impact of these studies on nursing on Earth.

HOW DO WE MAINTAIN GRAVITY IN SPACE:

The human body was developed to thrive under the force of gravity. This is why our muscular and skeletal systems are shaped the way they are. Over time, in a zero or weightless environment, the bones of the body become brittle and certain muscles, like those in the thigh actually weaken. There are also worries about its effect on the circulatory system as well. So if a voyage with the latest propulsion technology to Mars takes 11 months or more coming and going, there is a concern that the long amount of time in space might have even more detrimental effects, like making it impossible for astronauts to safely return to Earth. So scientists and even science fiction writers have been thinking about how to create gravity in space. There are several proposals some already proven and others that are still theory. The first is to use the centripetal force of a rotating hull. This method is the most trustworthy as the effect has been observed on Earth.

Every object in the universe wants to go in a straight line. In the case of planets, it's the pull of gravity from an object with great mass that curves most celestial object's paths. In the case of a space craft it would be the hull itself. Since you can't walk through solid walls the force

of your body wanting to go in a straight line would resemble gravity. This theory has drawbacks. First, the amount of gravity you feel would vary depending on how close you are to the center of the craft. Scientists believe that the longer the radius of the spacecraft the less the effect will be felt. The other challenge is nausea. You are still basically on something like a huge merry go round. Like on its namesake, some people will be able to handle it and others will experience nausea. But in most cases it's believed that if the space craft rotates at 1 rotation per minute the nausea won't be an issue.

The other method of maintaining gravity is to constantly accelerate a spacecraft at 9.8 m/s, Earth's acceleration due to gravity. The problem with this is that due to limitations imposed by fuel there is no spacecraft that can maintain this rate of acceleration more than 7 minutes. This idea might become possible if a more reliable source of propulsion is found.

NURSING CARE IN SPACE

Nurses can contribute meaningfully in the development of healthcare teams in space using their experience from Earth. For example a group of 64 perioperative and postanesthesia nurses, with an average 10 years experience, were informally asked to prepare a surgical suite in a space station. They had the same concerns found in space literature¹⁸. Although this was informal research, it confirms that nurses can meaningfully contribute to the space program. Nurses finally may have a significant role in space. Although nurses have applied to participate in the astronaut program, none have been selected, and the reasons are speculative. One reason often cited is the multiple levels of education that dilute and confound nursing's credibility. The entry level for most recognized professional careers is a Bachelor's Degree with engineering now pushing for a Master's Degree. With that said, however, the best fit in the proposed healthcare team may be an advanced practice nurse; possibly an advanced practice nurse with perioperative and recovery experience. These nurses would be technically able to perform emergency

procedures, understand and use aseptic techniques, be easier to guide through telerobotic or telesurgery than other crew members without healthcare backgrounds, have general nursing skills, familiar with recovery from anesthetics, able to multi-task, thus they are cost effective. These nurses would also need a solid background in infection control due to the closed-loop design of space craft. Infections allowed to contaminate the life support systems could seriously endanger the entire crew. It is easy to envision these nurses becoming central members of the space crew.

Surgery in Space 2007: Where Are We Now?

On February 26, 2007, National Aeronautics and Space Administration (NASA) announced an undersea mission to include "first flight surgeon". The mission named NASA Extreme Environment Mission Operations 12, NEEMO 12 for short, will include among many experiments, a hands-on telesurgery demonstrations and robotic telesurgery technology. The purpose of this phase of the mission is to help surgeons to overcome simulated interplanetary communication lag time issues related to robotic and telesurgery. This news release is very exciting since it demonstrates a shift in focus within the United States Space Program. Only in the last few years has the human factors issues of space flight begun to take center stage; brought on in part by the new push within NASA to return to the Moon and go on to Mars as directed by President Bush's "Vision for Space Exploration".

References:

1. "Perceived healthcare risks of space activities" National Space Society Roadmap: Social Barriers to Space Settlement.
2. NSS Online Report #10 SpaceRef.com - January 2001.
3. "Nurses' contributions to the U.S. space program" Association of Operating Room Nurses, Inc. Journal - May 1, 2000.
4. "Surgery in Space?" Association of Operating Room Nurses, Inc. Journal - June 1999.
5. "John Glenn gets space aged" Nurseweek/Healthweek - Sep. 20, 1998.

INDEPENDENCE DAY CELEBRATION



68th Independence day was celebrated on Aug 15 2014 with flag hoisting at Narayana Medical College Auditorium at 09:00 am flag hoisted by Dr. Subramanyam, Director, NMCH . The Celebrations were continued with cultural programme at Narayana Nursing Institutions at 11 : 00 am.



The Programme was inaugurated by the chief guest Dr. Indira. S, Principal, Narayana College of Nursing and after the address by the principal and the faculty cultural programmes were started. All the Nursing students participated in cultural programmes with great Joy and Happiness. Following cultural programmes, prizes and certificates were awarded to the winners of essay writing and poem writing and rangoli competitions. The celebrations ended with National Anthem at 02 : 00 pm.