Water Safety

Water I: Pursuing a Safe & Reliable Supply

Water as an Essential Nutrient

Dr. Sophie Miquel-Kergoat
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Water Safety

- SOME HISTORICAL BACKGROUND
- HEALTH
- INITIATIVES (STUDIES CASES)
- FUTURE
History

• Since water is absolutely essential to human life, it should not be surprising that it is an important component of human history.

• Most of the great ancient civilizations depended on a particular source of water.

• Water facilitated relatively rapid transportation prior to about 1850 C.E.

• Water was a fundamental aspect of the era of exploration and discovery from the late 15th through the 18th centuries.

• Water was also thought to be an essential aspect of the Industrial Revolution in all kinds of manufacturing processes.

http://witcombe.sbc.edu/water/history.html
Water supply and sanitation has been a primary logistical challenge since the dawn of civilization.

Water-flushing toilets 
3180 BC–2500 BC
Skara Brae 
a Neolithic village in Orkney, Scotland

History

And over the millennia, technology has dramatically increased the distances across which water can be relocated…
.....but the availability of clean and fresh water remains a limiting factor on the size and density of population centers, and is expected to remain so into the foreseeable future.

In 2030, 47% of world population will be living in areas of high water stress.

Most population growth will occur in developing countries, mainly in regions that are already experiencing water stress and in areas with limited access to safe drinking water and adequate sanitation facilities.
Where water resources or infrastructure or sanitation systems are insufficient for the population, people fall prey to disease, dehydration, and in extreme cases, death.

Fig. 1 A 1939 conceptual illustration showing various ways that typhoid bacteria can contaminate a water well (center).
The current knowledge of water intake on human health includes:

- overall patterns of intake,
- factors linked with intake,
- water homeostasis mechanisms

Studies are covering:
- effects of variation in water intake on health and energy intake,
- weight,
- human performance and functioning (i.e. cognition, alertness, sleep quality)

MOH/UNICEF, 2011, Study on the correlation between sanitation, household water supply, mother’s hygiene behaviours for children under 5 and the status of child nutrition in Vietnam
Takanashi, et al., Improved food selection of mothers on complementary feeding practice in Vietnam, 41st Asia-Pacific Academic Consortium for Public Health (APACPH) Conference, 3-6 December, 2009, Taipei, Taiwan, Poster presentation
Project SWAN (Safe Water and Nutrition)

2001- ILSI Japan and its partner National Institute of Health, Vietnam, launched Project SWAN

-> collaborative, multisector effort among engineers; disease and nutrition experts; educators; and communications experts.

-> to enable local communities to use existing community assets to create and maintain a safe and sustainable water supply.

-> to improve recognition of the importance of drinking water, food hygiene and nutrition, and sanitation at the household level.
Project SWAN (Safe Water and Nutrition)

2015- ILSI Japan and ILSI Southeast Asia Region, engaged several partners (Southeast Asian Ministers of Education, Organization Regional Centre for Food and Nutrition, the Yasmina Foundation, and local engineering consultants) in Indonesia

-> to conduct a pilot Project SWAN program in a rural district of the country.

2016- ILSI Japan and ILSI Southeast Asia hope to begin full implementation of Project SWAN in a test location in Indonesia.

N= <100,000
Global Initiatives like SWAN found many of the same circumstances of lack of safe water and health issues:

- inadequate treatment facilities and procedures
- low public awareness of the importance of safe water;
- food hygiene
- nutrition
- sanitation.
Further investigation is required about the extent to which water intake might be important for disease prevention and health promotion especially in younger population…

As for or children under five, water and sanitation-related diseases are one of the leading causes of death.

Over 800 children die/day from preventable diseases caused by poor water, and a lack of sanitation and hygiene.

Initiatives (i.e. SWAN, ONU, UNICEF, UNESCO, WWAP…) are improving access to clean water and reducing malnutrition, raising awareness and implementing educational tool
While some other, like “Water Project H2Oooh!” focus on education

-> to encourage a greater understanding of the situation related to water resources in our world today and the issues related to its use, to its exploitation and to its limited supply.

N= 6,000 students ages 6 to 16 from (Italian schools)
storyboard on the theme of water Educational course (i.e. videos, books..)
“You see, because water is a precious resource and we need to be careful not to waste it.”
WWAP contribution to the “Budapest Water Summit 2016 Messages”

“As water is the most threatened resource today, it needs to become the central question of the political thought and action”, declared His Excellency Mr János Áder, President of Hungary, in his opening speech at the Budapest Water Summit 2016, which was held in Budapest on 28-30 November 2016. The Summit aimed at discussing the role of water as a source of cooperation, peace and development, instead of conflicts and global risks. To this end, participants of the Budapest Water Summit 2016 proposed solutions for the relevant international bodies by adopting the “Budapest Statement 2016”.

The World Water Assessment Programme (WWAP) of UNESCO contributed in drafting this important document, which summarizes the major political recommendations of the participants to the larger political community. Read more
Thank You
Water I: Pursuing a Safe & Reliable Supply

The session will explore the challenges associated with contaminants and toxicities in water & efforts underway to ensure a safe and reliable supply of water.

• Drinking Water Contamination - Shane Snyder, PhD, University of Arizona

• Water Disinfection By-Products and their Safety - Brian Cummings, PhD, University of Georgia

• Global Lessons Learned: Case Studies on Lead and Arsenic - Alan Roberson, PhD, Corona Environmental Consulting

A follow-up session (“Water: Part II”) will be part of the 2018 scientific program and will focus on water management, sustainability, global supply/distribution, agricultural systems, and environmental factors.