

Nitrous Oxide as Pain Relief for Women in Labor

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Research Questions:

- What are the benefits and risks associated with the use of nitrous oxide as a method of pain relief for women in labor?
- What are the known contraindications, patient satisfaction and implementation methods associated with the use of nitrous oxide in this patient population.?

Introduction:

- Labor and childbirth can be a very frightening and anxious time in a woman's life and pain is considered a normal, natural and expected part of childbirth.
- There are both pharmacologic and non-pharmacologic pain relief measures that can be taken in order to reduce pain and improve comfort of laboring women.
- Nitrous oxide is a tasteless and odorless gas used as a labor analgesic in some hospitals
- Nitrous oxide, more commonly known as laughing gas, is most well-known for its use in the dental field however it is becoming increasingly popular as a tool for women to manage their labor pains.
- Nitrous oxide labor analgesia is safe for the mother, fetus, and neonate and can be made safe for caregivers
- Women in the United States and around the world deserve to have as many options as possible to choose from to ensure that they feel comfortable and satisfied with their pain management regimen.

Significance in Nursing:

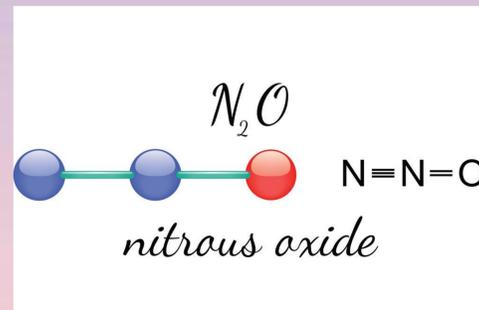
- Pain is one of the most common problems that nurses have to manage during their care of patients. Whether the patient is in pain from a surgery or cancer, a broken bone or delivering a baby, pain remains at the center of patient problems
- Women in labor experience pain and discomfort through all stages of labor and after birth. As nurses, it is our responsibility to help patients cope with the pain they are experiencing and provide them with the most comfort and support that we can. It is also important to provide patients with options for their own pain management.

Methods:

- This literature review will evaluate the current scientific evidence with the goal of understanding whether nitrous oxide is a valid and viable option for women experiencing labor pain.

Results:

- The overall search provided 35 articles to be reviewed and utilized in the writing of this review.
- Many of the articles utilized in this review were conducted or reviewed in areas such as Iran and countries in Europe
- The majority of these articles have experts in the field working on the research and review or literature. Medical doctors, certified nurse midwives, nursing and midwifery professors, anesthesia professionals and other research experts were involved in all of the articles used in the review.



Implications in Nursing Practice and Education

- Nurses working in hospitals, clinics and primary care settings, especially those who work in obstetrics and gynecology specialties, should use the information provided in this literature review and work to apply it to their nursing practice.

Implications for Future Research

- Opportunities for research related to N_2O include occupational exposure and effects on those caring for women using N_2O ; fetal/neonatal effects; maternal satisfaction; institutional and system factors that may act as an impediment to initiation; and initiation by nursing staff versus other types of providers (respiratory therapy or anesthesia, for example)

Discussion:

- It provides women experiencing labor pain another option and supports a woman's right to make choices about her body and her plan of care. Some of the most obvious benefits found during research surrounded topics including ease of administration, cost, onset and excretion from the body, influence on maternal outcomes, influence on fetal outcomes, influence on labor pattern and cost.
- Some hospital staff on labor and delivery units have questioned the safety of their exposure to nitrous oxide after stories arose about fertility issues among other healthcare professionals exposed to nitrous oxide on the job
- As with any inhaled medical gas, there is concern over environmental dispersion of nitrous oxide waste
- Implementation of any new procedures, supplies, medications or treatments in the medical world can be difficult
- Absolute contraindications to the administration of nitrous oxide include the presence of a potential space the gas could fill such as with pneumothorax, intraocular surgery, bowel obstruction or middle ear surgery. Other conditions that contraindicate nitrous oxide usage are increased intracranial pressure, increased intraocular pressure and pulmonary hypertension
- Women should be checked for vitamin B12 deficiency prior to the use of nitrous oxide
- studies have shown that the majority of pregnant women receiving Entonox gas were satisfied with the analgesic effects and reported good experiences

