

Nicotinamide Mononucleotide

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1a): The Use of Nicotinamide Mononucleotide and its Effects

The successful management or control of most diseases has led to a significant rise in life expectancy. However, this situation has increased the prevalence of age-related conditions such as hypertension, neurodegenerative diseases, and atherosclerosis (Buoso et al., 2022). Hong Kong has witnessed an increasing elderly population, with 19.3% being over 65 years (Wong et al., 2021). Therefore, the need for age management health practices through supplements has increased. Because of the aging population, local customers are becoming more interested in longevity and anti-aging products. New goods and technologies have been developed to accommodate this expanding demand, and NMN has been gaining popularity in Hong Kong since 2021 (Feuz et al., 2023). Its effects on antioxidation, cell damage restoration, and cellular renewal have been extensively researched and published. Nicotinamide mononucleotide has recently emerged as one of the most promising anti-aging supplements (Wei et al., 2021). Nicotinamide mononucleotide is an intermediary in the production of NAD⁺ (Nicotinamide adenine dinucleotide) (Li et al., 2023). Taking NMN supplements boost bodies' NAD⁺ levels. The interaction between ribose and a nucleoside containing nicotinamide with a phosphate group produces NMN.

It occurs generally in many different kinds of animals and plants. Although NMN exists in a particular food, some people use supplements to boost their body levels. Some NMN foods include edamame, cucumber, cabbage, broccoli, and avocado (Danailova et al., 2022). While

(Conforti et al., 2023). Despite the absence of robust human proof, it has become popular among those confident of its effectiveness as an anti-aging ingredient.

Uses of NMN

People use NMN to enhance insulin sensitivity, eye function, physical activity, energy metabolism, and suppressing age-associated weight. In Hong Kong, people use NMN as an anti-aging drug. There is a possibility that it aids in preserving the BBB (blood-brain barrier) (Nadeeshani et al., 2022). Inflammaging, the rise in inflammation due to aging, is uncommon in

considerable energy, which requires a substantial level of NAD⁺ (Poddar et al., 2019).

Preliminary studies suggest that NAD precursors aid in weight loss, protect against the adverse consequences of high-fat diets, and boost energy levels. According to a short investigation, women with prediabetes saw an improvement in their muscles' capacity to handle sugar after taking NMN (Khan et al., 2019).

Human skeletal and muscular tissues need fatty acids and glucose for survival. NAD⁺ aids in their metabolism and incorporation into the body. Everything drags, and muscles lose endurance if they do not get enough NNM (Poddar et al., 2019). Human NMN improves aerobic capacity, as was recently shown in an experiment with recreational runners. Scientists think this outcome is because skeletal muscle uses oxygen more efficiently. Nicotinamide mononucleotide supplementation has been shown to improve memory and cognition in Alzheimer's disease models, possibly owing to NAD⁺'s capacity to enhance numerous essential activities in the brain.

Nicotinamide Mononucleotide Effects on Health

Mitochondria are tiny but crucial organelles for metabolism, and the NAD⁺ generated by NMN helps to keep them active. Without mitochondria, cells would perish from a lack of energy (Waddell et al., 2023). These organelles are responsible for converting oxygen and glucose into cellular energy. Sirtuins are a class of proteins involved in cellular homeostasis and DNA repair, and they are also activated by NAD⁺ (Shahgaldi & Kahmini, 2021). Cell division causes the caps at the ends of DNA strands to get shorter, which is harmful. However, sirtuins stabilize these caps (telomeres) to slow this process. Sirtuins depend on NAD, implying they cannot do their duties without this molecule (Shahgaldi & Kahmini, 2021).

Rats and mice constitute the bulk of NMN research. These have been found to have beneficial benefits on a wide range of bodily processes, including skin, liver, metabolism, brain, skin and muscle function; vascular health; reproduction; bone structure; longevity;

study's flaws. Clinically, meaningful improvements in muscular glucose metabolism were shown in another human investigation using NMN in 2021 (Thaung Zaw et al., 2021). The findings indicated that NMN was improving energy levels, which may be seen as an anti-aging impact, although a minor one. Nonetheless, those who took a placebo instead of NMN also had their NAD⁺ levels rise.

Side Effects

. Excessive amounts of the vitamin NAM (nicotinamide adenine dinucleotide) have shown promise in treating various illnesses and ailments, such as inflammatory diseases, depression, and neurological dysfunctions. Concerns over the safety of long-term use of NAD⁺'s precursor NAM have arisen in light of rising public knowledge of the potential pro-aging effects.

when the NAD⁺ pool is increased. In the meantime, High levels of NAM cause shifts in the proteome and transcriptome, affecting the methylation of proteins and DNA. Methyl nicotinamide, one of NAM's methyl metabolites, is believed to be involved in the progression of several illnesses.

The clinical understanding and benefits are still evolving. From existing studies, it is evident that NMN has several benefits to the human body. However, it is ideal to ascertain the specific required dose of NMN in the human body. Despite the evidence of NMN benefits to human health, particularly as an anti-aging agent, a full review of the required quantity needed to

improve efficacy and reduce side effects require examination and further research. The data on the necessary amount may lead to beneficial outcomes (Nadeeshani et al., 2022).

(1200 words)

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1b: Investigation of People's Perception of Nicotinamide Mononucleotide

Objectives

The research objectives for ascertaining NMC uptake in the region include the following:

- To evaluate people's perception considering using NMN perspective as an anti-aging drug.
- To know whether people know the adverse effects and benefits of using NMN.
- To ascertain the specific reported effects of NMN on older adults.

Based on peoples' views, the researcher will be able to determine the use of NMN supplements and the perceived benefit.

Research Questions

For the research to be successful, it requires study questions that will evaluate the hypothesis or provide an avenue for further studies. The following research questions will play a pivotal role in attaining the study objectives:

- What is the level of awareness of using NMN by Kwun Tong residents?
- What are the perceived risks and benefits of using NMN as an anti-aging supplement?
- What is the predominant use of NMN among the residents of Kwun Tong?
- What are the reported side effects of the use (s) of the supplement among the residents?

Research Design

This study will adopt a qualitative research design by using questionnaires. This qualitative approach is critical because it provides primary data concerning people's perceptions of using NMN because it will reveal opinion narratives and experiences. Also, the data collected can be tested with existing research to validate its authenticity. Questionnaires allow

use a cross-sectional approach because it does not make inferences about the future or past but relies on the current time.

This research will target older people living in Kwun Tong. The primary reason for using this criterion is because the NMN is used mainly by older adults as an anti-aging supplement. The questionnaires will be administered to older people who have not used NMN and those who have used or are using the supplement. This approach will allow the researcher to gather data on the supplements' risks, perceptions, and benefits.

Sampling Size

The sample will include three hundred elderly individuals residing in the Kwun Tong district of Hong Kong. A small sample size is ideal because it can give accurate results or measurements. Also, it is easy to control measurement bias and measurements when using a small sample. The study will consist of an equal number of male and female individuals. The target group will comprise individuals between 65 to 75 years. Individuals suffering from chronic conditions like cancer will not participate in the survey.

Sampling Plan

This research aims to identify the adaptation, use, and perception of NMN among adults in the Kwun Tong district of Hong Kong. This research will use a purposive sampling style because it targets aging individuals of 65 years and above. Purposive sampling is a class of non-probability approach where individuals are chosen for their capacity to fulfill a specific role in the overall sample. Purposeful sampling occurs when the sample population is determined at the researchers' discretion (Mweshi & Sakyi, 2020). Researchers often assume that they can save

resources by using their good judgment to choose a sample representative of the population of

most individuals who use anti-aging supplements want to look young. The questionnaire will be available online and also in print form. To avoid visibility challenges, the questionnaire will use large fonts to accommodate those who might have visual challenges.

Data Collection Method

The primary data collection method will involve using questionnaires to collect the data. Questionnaires offer a convenient approach to managing critical data from a large population. An excellent questionnaire is appropriate for testing drug or supplement efficacy among a population because it reduces bias and research costs (Pittas et al., 2023). The questionnaire used in the

of their anonymity. Also, the responder may take their time filling out the questions. Since there is no human interviewer, it eliminates human bias or error (Newman et al., 2020).

One of the primary goals of this research is to find non-bias responses by allowing the respondents to share their true feelings. Therefore, this study will administer open-ended questionnaires to allow respondents to share their feelings without prejudice. Open-ended questions do not require a simple no, or yes answer but require the respondent to give details about their response. There is no limit to the amount of information that may be gathered through

Therefore, using an open-ended questionnaire in this research will play a pivotal role in understanding people's perceptions concerning NMN comprehensively.

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2: Patricia Benner's Theory of Skill Acquisition

Among the most debated development approaches in nursing practice and learning is Dr. Patricia Benner's skill acquisition theory. The scholar argued that one could gain knowledge without learning (Cromeens et al., 2021). As described by Patricia, the five levels of nursing experience include novice, advanced beginner, competent, proficient, and expert. The Dreyfus Model of Skill Acquisition is the basis for Benner's work (Murray et al., 2019). Benner suggests in her writing that knowledge and practice in nursing are necessary for attaining an expert level of competence. According to Benner, nurses form and amass patient-related global paradigms and sets. She also believes nursing care should be interpreted by the individual's values, experiences, and beliefs.

Novice

At this level, nurses are beginning their careers as they are in their initial year of clinical education. The individuals in this category must gain the required skills or experience to make prompt decisions for various cases. Individuals who fall under this category need more

(Cromeens et al., 2021). Instructors aid students in moving from one developmental stage to the next by providing guidance and instruction. An excellent example comes from those nurses who can only decide with the assistance of someone more skilled or experienced. Helping beginning nurses understand the importance of personalized care and how to use it in practice is a priority.

Advanced Beginner

At this stage, one can identify nurses working their first jobs. After novice nurses have gained some experience, they become advanced beginners. At this stage, the nurses have real-life experience dealing with patients and can recall similar situations quickly (Leistner & Carlin, 2019). Understanding the patient's position might be challenging for advanced beginners since

require guidance from more experienced colleagues to offer individualized patient care. Some hospitals offer programs such as mentorships and internships for advanced beginners.

Competent

At this stage, the nurses have worked for 2 to 3 years. Nurses can recognize patterns and implement care procedures or strategies accurately. Also, the nurses at the competent level have organizational skills, which are crucial for clinical practice (Tuomikoski et al., 2020). Nurses can react promptly to several situations because they have enhanced flexibility and speed. However, nurses at this level cannot multitask like proficient leaders. With increased knowledge,

needs (Straughair et al., 2023). They can ask relevant patient care questions to improve informed

decisions. By using their knowledge of nursing principles and theories, competent nurses may better assess patient needs, develop tailored care plans, and implement sound clinical judgment.

Proficient

At this level, the nurse uses evidence-based practice for their clinical operations. The nurses in this group have three or more years of practice. At this stage, the nurses have three or more years of experience (Roth et al., 2021). Benner claims they can step up and provide

and less experienced nurses receive proper training to provide individualized treatment. Proficient nurses must develop their expertise and enhance their skills by reading healthcare journals, participating in scientific conferences, conducting research, and participating in international and national projects to provide the best possible care to their patients (Ozdemir, 2019).

Expert

Expert nurses are consistent and make judgments in a fluid, intuitive way (Sherrill, 2020). They make essential clinical judgments while having a holistic view, using their intuition

design all-encompassing training programs for newer nurses or those with less experience and assess the results. Expert nurses have the knowledge and skills to critically examine nursing interventions from every angle, allowing them to create novel care models, theories, and investigations grounded in humanistic and holistic philosophies designed for patient-specific approaches. Expert nurses have the expertise necessary to use advances in medical technology to deliver patient-specific care. Expert nurses' understanding of the latest medical research and technology helps less seasoned nurses provide tailored treatment.

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Change Management using Yoder-Wise and Menix Approach

Education and communication are pivotal in initiating a change process in the nursing practice. The parties involved in the change process must know its purpose and potential outcomes (Kotcher et al., 2021). The effectiveness of each patient's tailored nursing care depends on open lines of communication among the nursing staff. I will communicate with the nurses in the acute care unit concerning the need for change. Also, I will call for a consultative meeting comprising nurses, therapists, diagnosticians, doctors, and support staff to get varied views on allowing patients' significant other to stay overnight. The knowledge from these meetings will play a critical role in developing an ideal framework accommodating all staff involved. During the process, I will also consider feedback received from the patients. The person leading the change will be in charge of the meetings. I will encourage informal meetings among the nurses, in which they will report their outcomes in our weekly consultative meeting. One of the primary goals of the meetings will be to quantify the resources and infrastructure required to handle the changes.

For effective change, involving and allowing all nursing staff to participate is critical for better results. The change leader will address staff anxieties about the future. They must be aware that bringing about change is not always straightforward, and some people may respond

the benefits of allowing patients' significant others to stay overnight. I will also present them with a risk-benefit analysis to show them which variable outweighs the other. All these efforts will be aimed at nurses to understand, allowing nurses to understand the benefits of the change.

According to Yoder-Wise and Menix, support and facilitation are critical in the nursing practice to promote efficiency. True transformation demands changes in people's views, actions, and attitudes; therefore, effective

and reduce their burden of performing simple tasks. I will reassure the nurses that the presence of significant others will assist them in concentrating on critical cases without worrying about other patients because there will be someone to alert them in an emergency.

Negotiating and agreeing with all parties involved in a change process is critical. Most change process that involves several parties faces some resistance often. To avoid resistance and negative attitudes toward change, it is essential to negotiate with the parties involved to come to a compromise (Kinley et al., 2020). I will negotiate with the nurses to find an ideal way of

partitioning wards to ensure privacy among different groups of patients. Evidence-based design advocates building hospital spaces for adult patients to accommodate their significant others

(Gregory et al., 2022). This approach equates to personalized care and creating a healing environment.

Manipulation can promote nursing motivation toward change. This approach addresses the staff's immediate need to accept change (Block et al., 2019). Because several nurses complain that they have to work extra when dealing with patients overnight, I will inform them to allow the patients' significant others will help improve patient outcomes (Boney et al., 2022). I expect this motivation to convince the nurses that their work burden will increase. I will also convince the management to offer better incentives when implementing the change.

Cooption is another example that will be crucial in allowing significant others to stay

ensure that violation of its specification goes against hospital policy, which is punishable.

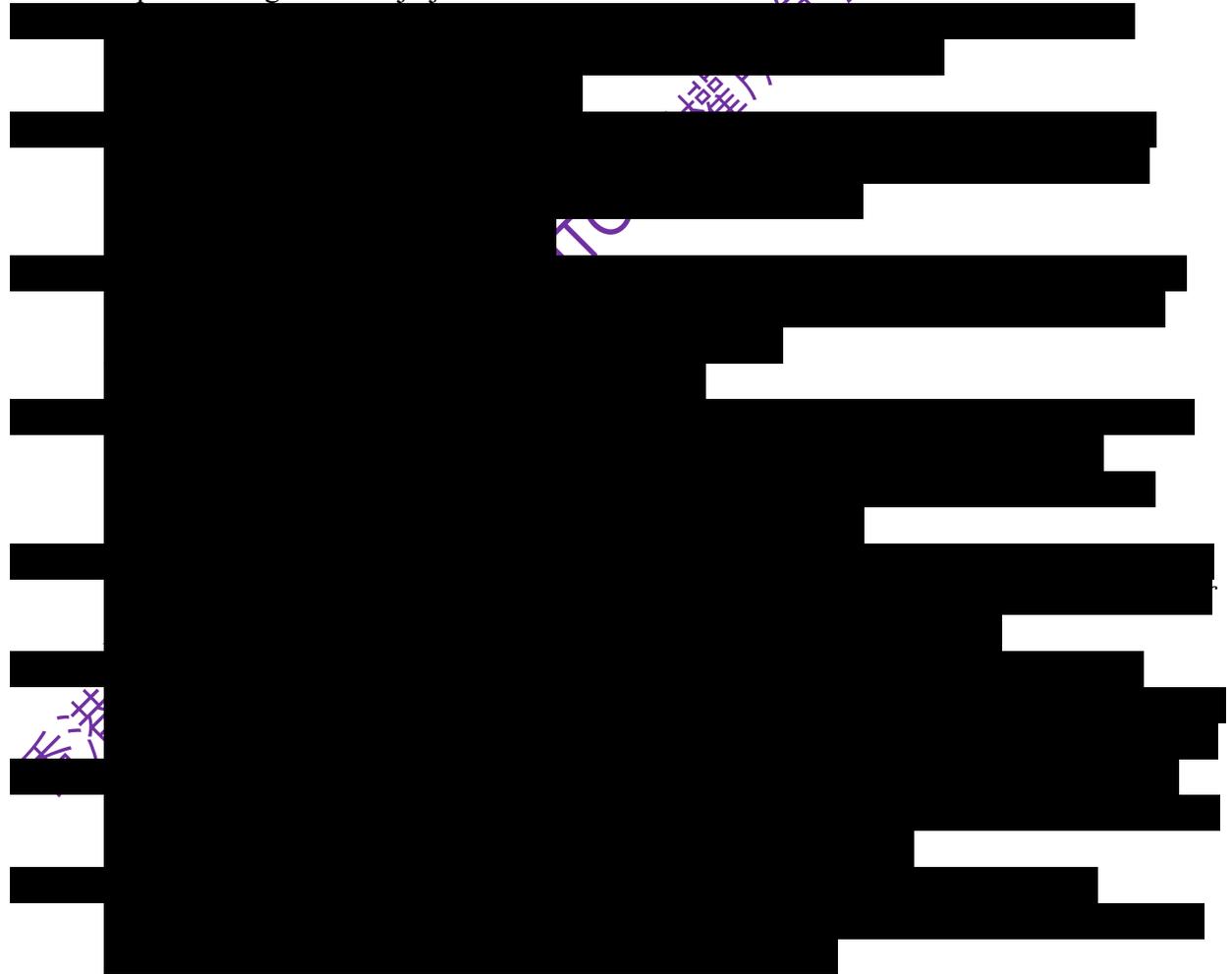
An effective change process requires a relationship by matching skills with required outcomes. Relationship-based care involves compassionate and humane care (Molina-Mula & Gallo-Estrada, 2020). To ensure optimal patient outcomes, I will ask the nurses to coordinate care with other healthcare team members, including doctors, therapists, and support staff. This approach will require a coherent treatment plan for the patient and open communication between the various healthcare teams.

Change can only occur with adequate information transfer. The critical information in nursing includes expressing the problem, opportunities, and action plan (Molina-Mula & Gallo-Estrada, 2020). During the change implantation, informing patients, families, and nurses of the roles and expectations will be critical. Conflict in nursing is expected because of differences in values, expectations, and functions. I will ensure open communication between staff, management, and patients. I will also include a suggestion box for parties or individuals who want to retain their autonomy.

A shared vision is critical when implementing change in the nursing practice. In this case, the shared vision is to provide a holistic, individualized, and homely environment to improve patient outcomes. I will communicate the vision with all parties involved in the change process. This strategy allows for improvements in the implemented change (Alsufyani et al., 2020).

healthcare process is dynamic, it is ideal to maintain ongoing consultation with all stakeholders to improve care and patients outcome. This approach will ensure that the change process can deter adverse effects that may arise during the process.

References

- Adams, A., Hollingsworth, A., & Osman, A. (2019). Implementing a cultural change toolkit to reduce nursing burnout and mitigate nurse turnover in the emergency department. *Journal of Emergency Nursing, 45*(4), 452–456. <https://doi.org/10.1016/j.jen.2019.03.004>
- Alsufyani, A. M., Alforihidi, M. A., Almalki, K. E., Aljuaid, S. M., Alamri, A. A., & Alghamdi, M. S. (2020). Linking the Saudi Arabian 2030 vision with nursing transformation in Saudi Arabia: Roadmap for nursing policies and strategies. *International Journal of Africa Nursing Sciences, 13*, 100256. <https://doi.org/10.1016/j.ijans.2020.100256>
- Block, K., Croft, A., De Souza, L., & Schmader, T. (2019). Do people care if men don't care about caring? the asymmetry in support for changing gender roles. *Journal of Experimental Social Psychology, 83*, 112–131. <https://doi.org/10.1016/j.jesp.2019.03.013>
- Boney, O., Moonesinghe, S. R., Myles, P. S., Grocott, M. P. W., Bartoszko, J., Beattie, W. S., Bellomo, R., Buggy, D., Cabrini, L., Canet, J., Cook, T., Cooper, D. J., Corcoran, T., Devereaux, P. J., Eckenhoff, R., Evered, L., Gan, T. J., Gin, T., Grocott, H., ... van Klei, W. (2022). Core outcome measures for perioperative and Anaesthetic Care (COMPAC): A modified Delphi process to develop a core outcome set for trials in perioperative care and anesthesia. *British Journal of Anaesthesia, 128*(1), 174–185. <https://doi.org/10.1016/j.bja.2021.09.027>
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