

Personal Use of Nicotinamide Mononucleotide

And

Research Plan

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Question 1: Personal Use of Nicotinamide Mononucleotide

The personal use of supplements has become a common practice among individuals in Hong Kong, seeking ways to support their health and well-being. One supplement that has gained considerable attention and adoption is Nicotinamide Mononucleotide (NMN). NMN is a molecule that plays a crucial role in the synthesis of nicotinamide adenine dinucleotide (NAD⁺), an essential coenzyme found in all living cells. NAD⁺ is involved in various essential processes such as protein synthesis, cell growth regulation, energy sensing, DNA expression, and aging regulation (sirtuins). In the aging process, NAD⁺ levels decline, leading to epigenetic shifts, genomic instability, mitochondrial dysfunction, and other age-related issues (Shade, 2020). NMN, as an NAD⁺ precursor, can be orally taken and rapidly converted into NAD⁺ within the body. NMN supplementation has been found to increase NAD⁺ biosynthesis (Johnson & Imai, 2018). While NMN shows promising effects in restoring NAD⁺ levels in aged animals and disease models, human clinical trials are still limited, and the long-term safety and efficacy of NMN supplementation, have not been fully established (Yoshino et al., 2018).

Positive Effect of NMN on Health

In numerous studies conducted on rodents, it has been demonstrated that systemic administration of NMN effectively enhances NAD⁺ biosynthesis in various peripheral tissues, including the pancreas, liver, adipose tissue, heart, skeletal muscle, kidney, testis, eyes, and blood vessels, under normal and pathophysiological conditions (Yoshino et al., 2011; Peek et al., 2013; de Picciotto et al., 2016). Although it remains uncertain whether NMN can cross the blood-brain

term oral administration of NMN in normal wild-type mice has been reported to be safe and well-tolerated without causing any obvious adverse effects (Mills et al., 2016). NMN has been found to offer broad applications and therapeutic potential, with studies indicating beneficial effects on various physiological functions and disease models (Shade, 2020).

The pancreas, a vital organ involved in glucose metabolism, has been shown to be particularly responsive to NMN administration. Research by Yoshino et al. (2011) demonstrated that NMN enhances glucose-stimulated insulin secretion, improving glucose tolerance in diabetic mice. This indicates that NMN has the potential to support pancreatic beta-cell function and contribute to the management of diabetes. The liver, another crucial metabolic organ, also benefits from

al., 2016). These findings suggest that NMN may be beneficial in addressing insulin resistance, a key risk factor for type 2 diabetes and cardiovascular disease. Furthermore, NMN has demonstrated positive effects on mitochondrial function in various tissues (Gomes et al., 2013). The heart and eyes have also shown improved mitochondrial function with NMN administration. The positive effects of NMN on NAD⁺ biosynthesis and its potential impact on various

physiological functions and disease models indicate a broad application and therapeutic impact of NMN supplements.

Negative Effects on Health

Although the existing research indicates that NMN is generally safe and well-tolerated, there are some concerns that have been associated with these supplements. One concern relates to the fact that the exact dosage and optimal form of administration has not been fully established. The studies that have been conducted to establish the appropriate dose in animals indicate that lower doses of NMN may be more beneficial for certain outcomes (Yoshino, 2018). For instance, research has shown that 100 mg/kg of NMN improves physical activity better than a higher dose

profile which is associated with a decrease in global hepatic DNA methylation and uracil content in DNA (Li et al., 2013). NMN may also be associated with genotoxicity and carcinogenicity Hwang & Song (2020). Although not conclusive, NMN inhibits poly (ADP-ribose) polymerases which are involved in DNA repair. This inhibition raises concerns about DNA integrity and the potential for certain types of cancers. Furthermore, NMN treatment can lead to an increase in NAD⁺ levels and a decrease in NADH/NAD⁺ ratio in mitochondria. This has the potential to reduce electron supply for the electron transport chain leading to decreases in ATP production. This effect could potentially affect physiological activities and organ functions that require high levels of ATP.

Personal Opinion

Based on the available evidence, the use of Nicotinamide Mononucleotide (NMN) as a supplement raises both potential benefits and concerns. I believe that NMN shows promising potential in various areas, particularly in its role as a precursor to NAD⁺ (nicotinamide adenine dinucleotide) synthesis, which plays a crucial role in cellular energy metabolism. One of the key

longevity. Furthermore, some studies have shown that NMN supplementation can have positive effects on age-related conditions. For instance, research conducted on mice has indicated that NMN can improve cardiovascular health, enhance insulin sensitivity, and mitigate age-related decline in physical performance (Yoshino et al., 2011). While further human trials are needed to confirm these findings, they provide promising insights into the potential benefits of NMN supplementation. Most of the studies conducted so far have been short-term or performed on animal models, and there is a lack of comprehensive data on the potential side effects and risks

of prolonged NMN use in humans. Since the exact dosage has not been fully established and there are concerns of increased risk of obesity, type 2 diabetes, and carcinogenicity associated with high intake of nicotinamide, it is important to approach NMN supplementation with caution before recommending it to a client.

Words: 1209

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Question 1b: Research Plan

Title: Exploring the Views of Residents in Mong Kok on the Use of NMN as a Dietary Supplement: A qualitative study.

Research Question: What are the views of residents in Mong Kok regarding the use of NMN as a dietary supplement?

Objectives:

1. To explore the diverse perspectives and attitudes of community dwellers towards the use of NMN as a dietary supplement.
2. To explore the reasons and motivations behind the use of NMN as a dietary supplement among community dwellers in
3. To investigate the factors influencing the decision to use or not use NMN among the residents.
4. To identify the sources of information that residents rely on when making decisions about the use of NMN supplementation.

Research design:

The researcher will use a descriptive qualitative research design for this study. This design is appropriate as it aligns with the research aim of exploring the views of residents in Mong Kok on the use of NMN as a dietary supplement. A descriptive qualitative design focuses on capturing the richness and depth of participants' perspectives and experiences, allowing for a comprehensive description of the phenomenon being studied (Yilmaz, 2013). This type of research design emphasizes the understanding and interpretation of the subjective viewpoints of individuals rather than quantifying data or testing hypotheses. It allows for flexibility and openness in exploring different aspects of the research topic, providing insights into the complex views of the participants (Polit & Beck, 2017).

Sampling strategy:

A theoretical sampling strategy will be used for this research. Theoretical sampling will allow for the selection of informants who can share their views relating to the use of NMN supplements. As guided by Polit and Beck (2017), the researcher will start by selecting a few participants through convenience sampling approach to recruit the initial participants. During the early stages of this research, a strategy known as maximum variation sampling will be used. This approach aims to include participants who represent a wide range of perspectives and experiences related to the use of NMN. The researcher will continuously adjust the sample by selectively including

(adults aged 50 years and above), gender (male and female), NMN usage duration (any duration), and familiarity with NMN (individuals who have knowledge or experience with the use of NMN). Another important selection criterion for participants in this study is that they must be English-speaking. They must also be residents of Mong Kok to ensure that the researcher

captures the specific perspectives and experiences of individuals living in the residential district under investigation.

Sample size:

Sample size for this study will be determined based on the data saturation principle. Data saturation refers to the point at which no new information or perspectives are emerging from the collected data, indicating that the researcher has obtained a comprehensive understanding of the

can change depending on the saturation, participants, time, and human resources available for data collection (Polit & Beck, 2017). A range of 20-30 provides a reasonable estimate to explore views of diverse community members considering factors such as the age, gender, religion, and socioeconomic status of the participants. As explained by Polit and Beck (2017), a sample size of 20-30 participants is often recommended in grounded theory research. The data is collected until data saturation is reached, which is the point at which no new information or themes emerge from the data.

Data collection:

A combination of self-reported semi-structured interviews and open-ended questionnaires will be used to collect the views of the community dwellers on the use of NMN. These methods will allow participants to share their experiences, opinions, and reasons for using NMN in an open and flexible manner. There will be face-to-face interview through which the participants will express their views. For accurate data collection, the interview will be audio recorded and subsequently transcribed. This approach will capture the participants' actual verbatim responses, allowing for a thorough analysis of the data. The researcher will obtain the consent of the participants before recording the interviews to ensure they are comfortable. Furthermore, high-quality audio recording devices will be used to capture the interviews for easier transcription. Also, the interviews should be conducted in a comfortable and private setting to encourage

range of perspectives from a larger pool of participants in a convenient and efficient manner. The data from the questionnaires will supplement the findings from the 20 interviews, enabling a broader perspective and enhancing the overall validity and reliability of the study's conclusions.

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Question 2: Nurses' Professional Development

It is generally assumed that more experienced nurses provide better care compared to novices. Prior research investigating the relationship between nursing experience and the delivery of high-

acquisition of skills in nursing practice (McHugh & Lake, 2010). These stages, including novice, advanced beginner, competent, proficient, and expert, highlight the evolution of nursing expertise and knowledge through education and practical experiences.

The novice stage mainly comprises of nursing students in their first year of clinical education. According to Petiprin (2021), novices exhibit limited and rigid behavior in the clinical setting, and they have a restricted ability to anticipate outcomes in specific patient scenarios. For example, in the first encounter with a patient, novices may not be able to recognize signs and symptoms like changes in mental status unless they have encountered a patient depicting similar symptoms (Petiprin, 2020). Benner (1982) further explains that novices have no prior experience with the presenting situations in which they are expected to perform assigned tasks. In order to familiarize novice nurses with clinical scenarios, they are taught about these scenarios in

minor surgery. One of the objective attributes I was taught to focus on was monitoring the patient's vital signs, including their blood pressure, pulse, and temperature, to assess whether their condition was stable. From my theoretical knowledge and ongoing interactions with the ward nurses, I developed a better understanding of the expected range of vital signs, but still, I did not fully understand how to make sense of the findings.

The second stage of Patricia Benner's theory of skill acquisition is the advanced beginner level. The advanced beginner comprises new graduates in their first jobs who have gained some experience and are able to recognize recurrent and meaningful components of a situation (Petiprin, 2021). They possess the necessary knowledge and know-how, but they still lack in-depth experience. As explained by Murray et al. (2019), new graduates have limited exposure to clinical settings and experiences, which puts them at risk of making errors and not recognizing deterioration in patients. They may prioritize time management and task completion over patient

acquired the necessary knowledge and skills from my education, and I could apply them in real-world situations. I remember one time caring for a cardiac patient, and I was able to pay close attention to things like cardiac rhythm, respiratory status, and signs of pain or discomfort and recognize patterns of distress because I had some prior experience.

At the competent level, nurses have progressed beyond being advanced beginners. They possess a higher level of mastery and can rely on advanced planning and organizational skills. While they may not yet have the speed and flexibility of proficient nurses, they have developed a

characterized by a focus on long-term goals and plans. I utilized therapeutic communication techniques, conducted a thorough assessment, collaborated with the interdisciplinary team, and designed outcome measures to ensure he received comprehensive care.

At the proficient level, nurses have developed the ability to perceive situations as whole rather than in terms of aspects, and their performance is guided by maxims (Benner, 1982). Nurses at this level have accumulated a wealth of experience that allows them to anticipate and recognize

can make well-informed judgments, drawing on their comprehensive understanding of the patient's context and their own experiences.

At the expert level, nurses have reached a stage of mastery where they possess a profound understanding of their practice. Expert nurses no longer rely on analytical principles or explicit rules to guide their actions. Instead, their extensive background of experience allows them to

multiple factors simultaneously, and initiate appropriate interventions without delay.

Words: 998

Question 3: Overnight Accommodation

In recent years, there has been a significant shift towards family-centered care, which recognizes the vital role that loved ones play in the well-being and recovery of patients. As emphasized by

whereby one significant other of a patient will be allowed to stay overnight in the ward. The change will utilize the strategies proposed by Yoder-Wise and Menix (2007).

Communication and Education:

Communication and education facilitate sharing of information and ideas among stakeholders. According to O'Daniel (2008), effective communication can lead to various positive outcomes, such as enhanced information flow, improved staff morale, safety, and increased satisfaction. For effective implementation of this change, I would organize a series of staff meetings to

the rationale behind the change, the specific procedures for accommodating significant others, and the potential impact on patient care. I would also create an environment that encourages staff members to share their thoughts, concerns, and suggestions, fostering a sense of ownership and collaboration.

Participation and Involvement:

The second strategy emphasizes the importance of involving staff at all levels in the change process from the early stages and throughout. For example, I will create a multidisciplinary team

meetings to discuss the change, gather feedback, and ensure that all staff members feel included and informed. This strategy will be crucial in reducing staff resistance to change as they will have shared ownership of the process.

Facilitation and Support:

Facilitation and support is important in addressing resistance and ensuring a smooth transition. It entails proactively assisting and reassuring those who are resistant to the change and providing the necessary resources and support to facilitate their acceptance and participation in the

disruptions to their routines. I would provide the staff with evidence-based resources to demonstrate how allowing a significant other may enhance patient comfort, facilitate communication, and improve overall patient outcomes (Al-Mutair et al., 2013).

Negotiation and agreement:

Resistance is a natural and expected part of the change process. This proposed change strategy can be used when the change agent faces resistance from individuals who possess the power to prevent implementation. For example, the head nurse may express concerns about patient safety, thus prevent change implementation. In this case, revising the terms of the change to address their specific concerns becomes crucial in fostering a more positive attitude towards the proposed change. In this case, I would revise the terms and implement measures to ensure patient safety. For instance, preventing the risk of infection from family members staying overnight by implementing strict infection control protocols and guidelines for visitors. These measures may include proper hand hygiene practices and visitor health screenings.

Manipulation:

Another strategy that can be used to manage this change is manipulation. In this case, the change agent can address the motivational needs of stakeholders to reduce resistance. To address the motivational needs of stakeholders, I would emphasize that this change improves patient

care is likely to motivate stakeholders to support the change and actively participate in its implementation.

Cooptation:

Cooptation entails manipulating individuals' involvement in a change process by assigning them a specific role or responsibility. This strategy can be used to engage individuals who are resisting or opposing the proposed change with an aim to convert their resistance into active participation and support. For instance, if there is a nurse on the team who is resisting the change due to concerns such as the potential disruption to the workflow and patient care that could arise from having significant others stay overnight. Instead of excluding this nurse from the change process, I would appoint them to a change task force that is specifically dedicated to implementing the initiative of allowing overnight stays for significant others.

Coercion:

Yoder-wise and Menix (2007) proposes that coercion may be employed when time is limited, and resistance is high. Coercion involves utilizing power to compel individuals to adopt the

Additionally, I can request the management, such head nurse and other higher power, to support the initiative by emphasizing the need for this change so as to encourage resistant staff to be actively involved.

Relationship:

Recognizing and leveraging the unique qualities of stakeholders is vital for the success of this initiative. Yoder-wise and Menix (2007) emphasize the importance of matching individuals'

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responsibility of creating informative presentations, handouts, and visual aids to facilitate understanding and engagement.

Information:

Sharing the right information is crucial during a change initiative. It involves providing accurate, relevant, and timely information to the appropriate individual. I would ensure that all the staff, including physicians, registered nurses, APRNs, nursing assistants, and other healthcare

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the specific policies and procedures related to the overnight stay of a significant other, such as safety guidelines, visitor restrictions, and communication protocols.

Visioning:

Visioning is a strategy that focuses on continuously creating goals and visions in response to the dynamic nature of the change process. It recognizes that change initiatives can evolve over time and that new opportunities and challenges may arise along the way. As new insights or challenges emerge, I would revisit the goals and objectives with the stakeholders and make necessary adjustments to ensure their continued relevance and effectiveness.

Words: 1194

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