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Understanding Adolescent Suicide through Roy's Adaptation Model: A Concept Analysis

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ABSTRACT

Background: Adolescent suicide is a growing public health concern, and nursing theories play an important role in nursing education and practice to facilitate efficient and individualized care. Roy's Adaptation Model (RAM) views a person as an adaptive system that responds to environmental stimuli and seeks adaptation. ***Purpose*:** This paper aims to analyze the concepts used in RAM and provide an understanding of suicidal behaviors among adolescents based on the relevant model concepts. ***Methods*:** The Walker and Avant's six-step model, including model origin, key concepts, logical adequacy, usefulness, generalizability, and testability of the model (2019) was utilized to understand suicide among adolescents by using the model concepts. ***Results*:** Nurses are required to determine the individual needs, especially with maladaptation, to provide tailored interventions and to facilitate adaptation in challenging situations, such as suicidal behaviors. This will enhance the adaptation capabilities of the individual and the efficient use of resources with better outcomes. ***Conclusion*:** This analysis demonstrates that RAM offers a structured framework for understanding the adaptive processes and coping mechanisms involved. Aligning the RAM core concept with the phenomena of suicidal behaviors among adolescents is essential to enhance conceptual clarity and support more individualized, theory-informed assessment and intervention aimed at promoting healthier adaptation. ***Implications for Nursing*:** This paper offers nurses a clear theoretical foundation for interpreting adaptive challenges and recognizing the interplay of physiological, psychological, and social factors concerning maladaptation. The understanding of this model may enhance nurses' ability to conduct focused, theory-informed assessments and recognize early maladaptive responses while dealing with patients. This work advances nursing knowledge and equips nurses to better support their patients, experiencing maladjustments, such as suicide among adolescents, thereby promoting adaptation and overall well-being.

Keywords: Adaptation, Nursing theory, Nursing model, Roy's adaptation, Concept analysis.

What does this paper add?

1. It clarifies the concepts of maladaptation through the RAM lens, offering a deeper understanding of how environmental stimuli compromise adaptive processes.
2. It strengthens nurses' ability to apply theory-informed practice by supporting early recognition of maladaptive patterns while dealing with patients.

3. It guides more focused assessments by helping nurses identify key attributes that signal compromised adaptation.
4. It supports the development of individualized, holistic interventions that promote healthier adaptive responses and enhanced well-being.
5. It provides a coherent RAM-based framework that may clarify the concepts of adaptive and maladaptive responses associated with suicidal behaviors.

Introduction

Roy's adaptation model recognizes the individual as an adaptive system and in a constant interaction with the internal and external environment to seek adaptation (Hosseini & Soltanian, 2022). These systems include physiological, psychological, role function, and interdependence, and play as a positive and goal-directed approach to maintain well-being (L. Chen, 2025). The physiological mode is concerned with the physiological response of a person to stimuli, self-concept deals with emotions and perception, while role function and interdependence are associated with the expectation of society and the interceptive behaviors between social and individual systems (Lakdizaji et al., 2014). Individuals with mental hardships respond to stimuli and become ineffective, due to compromised systems, requiring structured interventions to facilitate adaptation. The interaction between the systems in RAM is shown in Fig. 1.

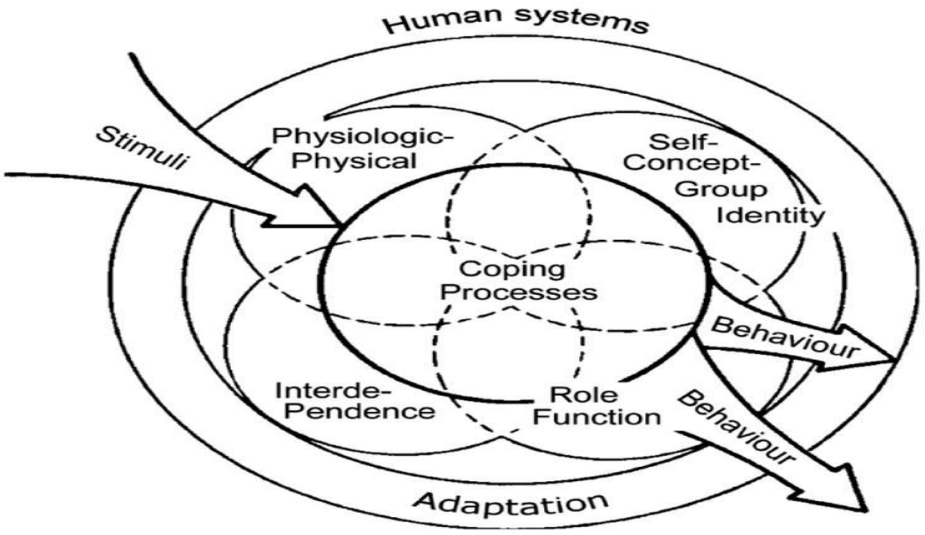


Figure 1. The Roy adaptation model

The metaparadigms of this model are person, environment, health, and nursing. It considers a person as a biopsychosocial being that constantly interacts with the changing environment, which includes focal, contextual, and residual stimuli. A focal stimulus is the instant confrontation with one's internal and external environment, while contextual stimuli may influence later and contribute to focal stimuli. The residual stimuli are factors that impact the current situation, based on an individual's beliefs, behaviors, and personal experiences (Terela, 2025; Ursavaş et al., 2014). The second component of the metaparadigm is health, which is a fundamental element of human life and well-being and represents a health-disease continuum. Nurses are required to identify and manage these stimuli and facilitate adaptation (Ursavaş et al., 2014). The adaptation depends on the type and intensity of stimuli and the individual's response to them. The hormonal and biological variations, especially in the adolescent period, along with parenting and childhood experiences, may influence the nature and intensity of the stimuli (H. Chen, 2025). The holistic approach of this model helps nurses facilitate the adaptation processes through preventive and structured interventions in addressing complex health issues, including suicidal behaviors (L. Chen, 2025), and other chronic conditions.

The mental health problems due to maladaptation are a global health concern, which accounts for approximately 15% of the global burden of disease (WHO, 2025). The adolescent population is at high risk of suicide due to their developmental stages, marked by significant physical, psychological, and social changes,

putting them at high risk of maladaptation and suicidal behaviors (Baldini et al., 2025). Theories play a key role in establishing the discipline's knowledge base, and future advancement will be achieved through the ongoing interplay between theory and practice (Harb, 2024). This underscores the need for effective theory-guided interventions to support successful adaptation. Although various models have been used to understand the development of suicidal behaviors (O'Connor & Kirtley, 2018), none have explicitly applied the RAM as a guiding framework to clarify the understanding of adaptive and maladaptive responses associated with suicidal behaviors. To analyze these problems through the lens of RAM is important, because this model offers a comprehensive framework for nurses to understand how individuals respond to environmental changes, facilitate the effective adaptation processes, and maintain well-being. The model focuses on guided interventions that improve the psychological resilience, social function, and overall quality of life among patients requiring adaptation (Wang et al., 2025). Therefore, the application of the RAM model is critical for nurses while dealing with patients with suicidal ideation, and the development of holistic interventions aimed at reducing suicidal behaviors.

Purpose of Analysis

This paper aims to conduct a concept analysis of the stimuli discussed in RAM to support preventive interventions and facilitate adaptation among adolescents experiencing suicidal ideation that can positively affect their adaptation. Moreover, this paper will add knowledge through the RAM applicability to reduce suicidal behaviors among the adolescent population.

Methodology

The Walker and Avant's six steps of concept analysis were conducted to understand the stimuli related to suicidal ideation among adolescents through the lens of RAM concepts. This strategy facilitates model analysis and aids in understanding the concept with a more objective analysis of the problem. This includes 1. Origin of Model 2. Key Concepts of Model 3. Logical Adequacy of Model, 4. Model Usefulness, 5. Generalizability, 6. Determining Model Testability (Pacheco-Brousseau et al., 2022).

Discussion

Origin of the Roy Adaptation Model

The initial phase of the model analysis focuses on the evolution and purpose of the model to understand the underlying assumptions. It further allows nurses to articulate what they do for patients and why they do it, to support evidence and guided nursing practice (Younas & Quennell, 2019).

Historically, this concept began in 1964 by sister Callista Roy, when her advisor suggested defining the goal of nursing as a way of knowledge development for practice, in her master's program at the University of California, Los Angeles (Mount Saint Mary's University, 2025). Before this model, follow the recovery protocol provided by the attending physician as the best approach, and remain the same for any patient dealing with a similar illness (Dewey, 2023). She read about the concept of adaptation from the resiliency of children she had cared for in pediatrics and proposed the goal of nursing to promote adaptation, which she later developed into her concept of adaptation as a nursing framework and integrated into health and illness. The early development of the central concept of the model was influenced by Dohrenwend, Lazarus, Mechanic, and Selye's model, that contribute to viewing a person as an adaptive system (Mount Saint Mary's University, 2025). The model was first published in 1976 and became a common model for nursing practice (Dewey, 2023), and it has been used over the past 50 years to guide practice, research, and knowledge development across the field (Jennings, 2017). The effective application of the model depends on a clear understanding of the meaning and important concepts to facilitate the practitioner's appropriate utilization of the model in practice.

Examining the Meaning of the Roy Adaptation Model

This part evaluates the concepts used in the model and explores the links between the systems, as well as the stimuli influencing the adolescent adaptation to external and internal changes through the lens of RAM, in order to develop a deeper understanding of the concepts.

Roy illustrates the internal and external stimuli originating from within the individual or the outside environment. The heredity predisposition or any hormonal, chemical, or emotional challenges are the

internal stimuli and may contribute to suicidal ideation, while parenting, school environment, or social pressure are examples of external stimuli affecting the individual's adaptation (Hannon-Engel, 2008).

The focal stimulus that confronts the individual requiring the most attention may be an internal or external stimulus, such as school violence, abuse, and neglect, … etc. (Yang & Moon, 2024). While contextual and residual stimuli are the underlying contributor factors to focal stimuli that contribute to the overall response by the individual and occur alongside the focal stimuli, influencing adaptive responses (Akinsanya, 1994), like peer pressure, family conflict, and past trauma or unexpressed fear as residual stimuli influence the individual's adaptation. The two sub-coping systems, known as cognator and regulator, regulate these stimuli and determine a person's response to adaptation (Akinsanya, 1994). The regulator deals with the automatic bodily responses through neural, chemical, and endocrine adaptation channels (Rogers & Keller, 2009), while the cognator deals with controlling the psychological and emotional system (Almasloukh & Stewart Fahs, 2021).

This controlling mechanism influences an individual's response to environmental stimuli and controls the situation to respond effectively and achieve adaptation. These stimulus-based interventions can be used as a preventive approach to promote client well-being or successful adaptation.

Nurses play a key role in facilitating adaptation and require an in-depth understanding of the problem, including potential stimuli and other risk factors leading to suicidal behaviors, and to address timely facilitation through structural and contextual interventions to facilitate adaptation. The adolescent population is at considerable risk of mental problems, particularly suicidal ideation, due to social, psychological, and physiological changes. When the individual system fails to respond effectively to stimuli, maladaptive responses may emerge, including suicidal behaviors. The behaviors of an individual that include taking actions or thinking of performing actions with the intention of killing oneself are referred to as suicidal behaviors (Yöyen & Keleş, 2024).

These behaviors can be affected due to the use of social media and other digital platforms, among others, and may sometimes disrupt the adaptation. Substance abuse, bullying, online gaming, and other underlying emotional problems are all risk factors for suicidal ideation (Yousafzai & Yousuf, 2023). Similarly, personal factors, such as disturbed sleep, substance use, and relationship problems, among others, may also play a role in suicidal behaviors, along with other health issues, and societal pressures, which are among other examples that need RAM-based individualized care. This can be possible through the effective and logical application of the RAM-based approach, which is the best fit for providing structural interventions and the logical adequacy of this model.

Logical Adequacy of the Model

The logical adequacy of the model is structured concepts for nurses (Group, 2006), that can facilitate and guide the adaptation processes, while dealing with patients having complex health problems (Jennings, 2017). This further helps nurses recognize the contributing stimulus and helps in the targeted interventions for their patients. The integration between the concepts of the model makes this model the best fit for application in addressing suicidal behaviors.

The Usefulness of the Model

The fourth step of the Walker and Avant's analysis focuses on the usefulness of the model. The RAM model considers the wholeness of the person and provides care at multiple dimensions by using a unique holistic framework to promote successful adaptation. The model acts as a guide for nurses to provide structured and efficient care (Tulsa, 2023). Its effectiveness has been proven to address various clinical problems and settings, such as adaptation in burn patients and patients with heart diseases.

The identification of stimuli using a comprehensive framework and tailored interventions is imperative to promote effective adaptation by approaching holistic care. This has been exemplified in the case of Parkinson's disease, which shows a significant improvement in all modes (L. Chen, 2025). The application in education and research in promoting education regarding healthy lifestyle behaviors of working adolescents (Tatoğlu & Ayyildiz, 2025) are among some of the examples of its broad applicability across settings, populations, and health conditions.

The model becomes more effective and practical for adolescents suffering from suicidal behaviors that impact the integrated system of the RAM model, such

as psychological, interpersonal, and role function. The model facilitates nurses in promoting well-being and providing tailored interventions to a variety of situations, which makes it more generalizable among other models.

Model Generalizability and Parsimony

This step focuses on the generalizability and parsimony of the RAM model, which sees the humans as an adaptive system responding to internal and external stimuli that act as positive and goal-directed responses to adapt (L. Chen, 2025). Recognizing and interpreting these adaptive responses to the stimuli helps nurses facilitate patients ' responses to possible adaptation (Hannon-Engel, 2008). It is generalizable to all approaches existing in nursing practice (Shosha & Kalaldeh, 2012), and has been applied to a range of settings and populations, including the management of Bulimia Nervosa (BN) and other chronic conditions (Hannon-Engel, 2008), and proved generable to different contexts and settings across the globe. The flexibility of this model allows nurses to contextualize stimuli, helping in the adaptive responses to complex healthcare challenges.

Parsimony

A model must give clear and straightforward explanations of a complex phenomenon, as well as precise relational statements that do not overlap or harm the contents (Yaqoob et al., 2023). The RAM model includes major concepts, sub-concepts, and relational concepts, which make it a complex model. The arrangement of the concepts is logical, but the clarity of some terms, including contextual and residual stimuli, along with the cognator, is needed to be defined more clearly to enhance the clarity of the model. This may further enhance the understanding and applicability of this conceptual framework in nursing education and research, to facilitate adaptation and managing different stimuli (Shosha & Kalaldeh, 2012). The integration of the different concepts used in a model is important to effectively address complex issues and facilitate the individuals' successful adaptation.

Testability

This step of analysis targets the testable and robust integration of the concepts that have significantly demonstrated improvement in adaptive response, like in the case of heart failure, Bulimia Nervosa, and other conditions that improved the various domains of quality of life. The diverse application of this model in different populations and settings supports the testability of this model. It further provides a framework that assesses the derived hypotheses and evaluates the internal and external stimuli and their integration with the system. The results support a positive correlation of symptom perceptions with psychosocial adaptation and not with actual physiological status. Another systematic review recognizes this model as more effective among other adaptive models due to its holistic approach (Hosseini & Soltanian, 2022).

RAM considers a person as an adaptive system that constantly interacts with the environment. The integration between the internal and external stimuli and the control mechanism through cognator and regulator plays a significant role in achieving adaptation and addressing suicidal behaviors among the adolescent population.

Implications for Nursing

This concept analysis provides nurses with a clearer understanding of the concepts used in the RAM framework and how it may help nurses identify the environmental stimuli and facilitate adaptation. This will further deepen theoretical grounding, supporting more precise identification of modifiable stimuli, enabling nurses to focus assessments on the factors most likely to influence adaptive capacity. Applying RAM to adolescent suicidal behaviors may strengthen theory-informed assessment, guiding nurses in developing individualized, holistic care plans that promote healthier adaptive responses and reduce vulnerability to self-harm.

Overall, the implications of this analysis highlight that the application of RAM is critical for nurses working with patients with maladaptation, particularly adolescents experiencing suicidal ideation. The integration of RAM into clinical reasoning will enable nurses to design holistic, adaptation-focused interventions, support early detection of risk, and foster long-term well-being through strengthened adaptive processes.

Conclusion

This paper analyzes the key concepts in RAM and its potential application to mental health problems,

including suicidal behaviors. This model is one of the most influential frameworks guiding contemporary nursing practice and research. It offers a coherent and integrated structure that systematically explains how individuals respond to internal and external stimuli, and how these responses shape adaptive or maladaptive behaviors. By examining the model's core concepts, this analysis provides a clear theoretical foundation for interpreting complex adaptive challenges and recognizing the interplay of physiological, psychological, and social factors that influence risk. Overall, this conceptual analysis demonstrates that RAM provides a valuable framework for understanding the processes that guide nursing assessment that supports adaptation and theory-informed intervention.

The insights derived from this analysis contribute to nursing knowledge by supporting more individualized and focused care, and ultimately healthier adaptation.

Limitations

The paper used only one method of analysis through Walker and Avant's steps for understanding, which needs further validation and contextual application of the model. The manuscript contains most of the old references that can obscure contemporary applications.

The paper evaluates the concepts and prospects, noting that studies should incorporate empirical referents and compare findings from other theories to advance further validation of the model.

Conflict of Interests

The authors declare no conflict of interests.

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Author Contributions

Conceptualization and Manuscript Writing: **AR**. Critical Review and Intellectual Feedback: **SR**. Peer Review of the Manuscript: **FS**. Overall supervision, intellectual guidance: **RJS**.

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