

# A Comparison of Two Case Studies Using the Roy Adaptation Model: Parents of Opioid-Dependent Adults and Bariatric Surgery

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## Abstract

The authors in this paper demonstrate the utility and versatility of the Roy Adaptation Model (RAM) as applied to two contemporary case studies. The first case uses the RAM model to gain understanding and guide nursing practice to assist the parents of a young adult with an opioid use disorder and depression, and the second case involves using the RAM model to help a woman who recently had bariatric surgery cope and adapt postoperatively in a way that helps her maximize the benefits of having had that procedure. The authors discuss how the RAM provides a holistic approach that can be used to provide high-quality, comprehensive nursing.

## Keywords

bariatric surgery, opioid dependence, Roy Adaptation Model

The authors seek to demonstrate the utility and versatility of the Roy Adaptation Model (RAM) by applying it to two different case studies. The first case uses the RAM and Roy's midrange theory (MRT) of coping and adaptation processing (CAP) to guide nurses to assist the parents of a young man with an opioid use disorder and depression, and the second case involves using the RAM and CAP to help nurses work with a woman who has had bariatric surgery, to maximize the benefits of that procedure. While the two cases are different (one is applied to the family and the other to the patient, one is about misuse of illegal substances and the other very legal), both are potentially equally health damaging as regards excessive consumption of food. There is some overlap in that both represent excessive and unhealthy patterns that must be changed. In both cases, the RAM and CAP provide nurses with a holistic approach that can be used to provide high-quality, comprehensive nursing.

The RAM focuses on the physiological and psychosocial adaptation of people to their environment. Roy built on the model, developing a theoretical concept of coping within each of the four adaptive modes that people use to adapt to their environment: physiologic, self-concept, role function, and interdependence. She identified two subsystems people use for adaptation: the regulator and the cognator. These subsystems are activated as needed within each of the adaptive modes. In the 1980s, while participating in clinical neuroscience nursing research, Roy (2011) focused

specifically on the cognator subsystem. Through this research, she developed an MRT of cognitive processing that identified the cognitive pathways of perceptual/information processing, learning, judgment, and emotion. These are the cognitive processes individuals use to process life events, connecting past experiences to present experiences. The processes are also used to develop adaptive responses when a person encounters stimuli from the environment (Roy & Andrews, 2009; Zhan, 2000).

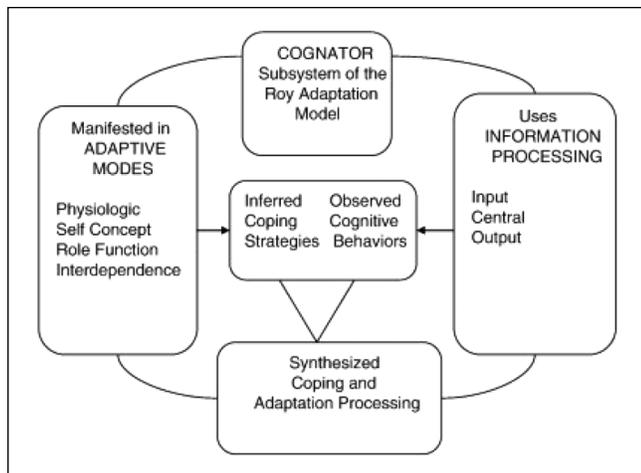
To further understand the concepts of coping and adaptation, Roy (2011) created an MRT of CAP. This theory is derived from Roy's clinical experiences, the RAM, the theory of cognitive processing, the theory of coping in the four adaptive modes, a model of information processing, and research projects that focused on the relationship between coping strategies and adaptation (Roy, 2011). The CAP is a multidimensional and transactional conceptualization of coping and adaptation (Figure). The conceptual basis emanates from Roy's definition of adaptation as "a state and a process of being and becoming an integrated whole" (Zhan,

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**Figure.** The middle-range theory of Coping and Adaptation Processing  
Source: Roy (2011).

2000, p. 159). The CAP explains the cognitive and emotional efforts made by individuals to gain mastery over their lives, to maintain their sense of self, and to enhance their well-being (Roy, 2011).

### Case Study: Robby's Story

Soon after graduating high school, despite starting at the local community college and starting a part-time job at a local supermarket, Robby became increasingly depressed and was drinking increasing amounts of alcohol, or perhaps it was the other way around, he was not sure. Before long Robby and some of his friends from high school were mixing alcohol and narcotic pain pills, which were readily available at the time. Robby did this for about 2 years, during which his girlfriend of a few months broke off their relationship because of his drinking and pill use. Even though he was able to graduate from the 2-year college and get into a local 4-year liberal arts college, his opioid use escalated to daily nasal heroin use, in part because the pills had become more difficult to obtain. After his second emergency department (ED) visit with a drug overdose, his parents (Jim and Diane) began to accept that Robby was not just going through a phase or having a difficult time adjusting; he had a drug problem and he was depressed. At the time of the second ED visit, he was eight credits short of graduating with a BA degree, but because of excessive absences, his part-time job was in serious jeopardy. He also lost most of his non-drug-using friends.

The RAM provided the nurse with a framework to better understand the adaptation the parents needed to go through the situation and be most helpful to their young adult child with an opioid use disorder and depression. The case exemplifies one of 8.2 million adults in the United States who have both a substance use disorder and serious mental health issue (Center for Behavioral Health Statistics and Quality,

2016). The term *mental illness* is not used in the paper; because of the stigma associated with the term *mental illness*, not doing so is not meant to suggest that Robby's depression is not serious, particularly in the context of this opioid problem. Stigma is a negative valuation of a person with certain health conditions as well as the placement of blame, which is a barrier to recovery and healing, which will be further discussed in regard to the self-concept mode for both cases discussed in this paper. In the case of Robby, his mental health issues increased his risk of a fatal drug overdose, the number of which has tripled in the United States in the past 15 years (Rudd, Aleshire, Zibbell, & Gladden, 2016). In 2016, 60,000 people died of opiate overdose in the United States, which represents 27% of world cases, in a country with only 4% of the world population (Dhand, 2017, p. 541).

While there have been no reported studies using the RAM with parents of persons like Robby, there have been some applications of the theory to some health issues that share elements with opioid use disorder and depression. Some of this literature was reviewed in the context of this case and the case that follows it. The RAM guides nurses and other healthcare professionals in how to help parents of young adults like Robby to accept and adapt to their child's chronic conditions, substance disorder, and depression. The focus of this discussion on the parents is not a substitute for providing substance use or mental health services for the patients like Robby but is instead a complement to them. One of the reasons this is important is that Robby's commitment to recovery from his drug use problem remains limited. His parents, on the other hand, appreciate that if they do not do whatever they reasonably can do to help him, he may not survive. The CAP MRT is based on the RAM framework, and it includes the four adaptive modes (physiologic, self-concept, role function, and interdependence), which together are key to adapting to living with chronic illnesses, including substance use disorders with and without concurrent mental health issues. Each of the four modes is discussed here as they related to working with Jim and Diane, the parents of Robby.

### Discussion

As suggested above, opioid use disorder with or without mental health issues is seen by the model as a chronic stimulus for persons and their families to cope and adapt. Each of the four adaptive modes as well as the subsystems as described above can be applied to the parents of young adults with opioid use disorders as well as to the patient. The cognitive substance processes are called upon by the parents of someone like Robby to respond to the overdose crisis as well as the unfolding revelation of the seriousness of their child's substance use and mental health issues. It connects their past experiences of being parents to their present situation. These processes play a significant role in determining if they are going to cope and adapt and be an asset or liability for Robby now and in the future. Ideally, they engage in

adaptive responses, which include accepting the realities of their son's condition (Roy & Andrews, 2009; Zhan, 2000).

The CAP model includes the cognitive and emotional efforts made by individuals and families to gain mastery over their lives, to maintain their sense of self, and to enhance their well-being (Roy, 2011; Roy & Andrews, 2009; Zhan, 2000). For Jim and Diane dealing with the crises and ongoing stress of witnessing their son's struggles as he falters in transition to adulthood, it is a challenge for each of them separately and for their relationship with each other and with him. They may also be going through midlife, work, and relationship issues of their own. The cognitive processes of parenting a child who has chronic debilitating and life-threatening illnesses involve worry and grief. They probably had assumed that their child's life was going to be more like their own and that they could have provided him with lessons from what they had learned, but in this case, their son's life is not like theirs was; it was a different time and they were different. Therefore, they are largely lost and ill-prepared for the parenting role they now face. They search their memory for early signs of their child's substance use or mental health issues to make sense of it all, to get a handle on it, and to try to manage the self-blame that inevitably arises through their best effort to be objective and effective. They deal quietly with shame and embarrassment as their peers brag about the accomplishments of their children and grandchildren; they now wonder about their own situation. Jim and Diane are coping with the realization of their reality; it is both problem-focused and emotion-focused (Lazarus & Folkman, 1984). Roy conceptualized coping as both a process and an outcome that includes adaptation (Roy & Andrews, 2009).

Two studies (Phillips, 2011; Phillips, Moneyham, & Tavakoli, 2011) used the CAP to explore the stigma of having HIV/AIDS. Like having HIV/AIDS, persons with an opioid use disorder and depression, and their parents, suffer from society's negative evaluation of persons and families with such problems. This often reflects ignorance and at times the desire of others to feel superior and distance themselves from such suffering, as if this could never happen to them. Substance use disorder and depression when considered as part of the physiological mode is associated with reduced functioning, and for the parents, this can include a spiritual or existential crisis, as they deal with guilt, helplessness, and threatened loss of hope.

### *Physiologic Mode*

The physiologic mode, according to Roy (Roy & Andrews, 2009), is the way persons respond to stimuli from the environment based on their biophysical and chemical processes. Coping processes are activated by stimuli, and the response from this mode is physiologic behaviors (Roy & Andrews, 2009). Opioid use disorder is now seen primarily as a biochemical process in specific brain regions—evidenced by cravings, intoxication, withdrawal, and depression. It involves

all of the cells, tissues, organs, and the person's entire bodily systems (Roy & Andrews, 2009). Opioid overdose impacts the respiratory system and oxygenation; its longer term use is associated with reduced nutritional status, changes in elimination, activity/rest, and self-protection. These threats to human integrity and health indirectly affect the lives of those closest to the patient, as they learn to live with doing what they can to help, while feeling helpless and uncertain.

The adaptive response of this mode is physiological integrity (Roy & Andrews, 2009). Physiological integrity is achieved when the person's physiologic needs are met (Roy & Andrews, 2009). The parents of adult children with opioid use disorder and depression who are coping and adapting are able to maintain their own physiological integrity. Ordin, Karayurt, and Wellard (2013) included questions about appetite, diarrhea, constipation, nausea, and vomiting in their study using the RAM to understand adapting to having received a liver transplant. These questions would be useful for the parents of persons with opioid use disorders to help them monitor the physiological integrity of their adult child's drug problem. Woods and Isenberg (2001) explored the focal stimuli of interpersonal abuse and response to posttraumatic stress disorder in women. Many parents of adult children with opioid use and mental health issues also have been abused by their children. Because of this, they are at risk of burning out concerning assisting their struggling family member. The practice of meditation or deep relaxation, self-acceptance, and living the serenity prayer (to change the things that can be changed, accept the things they cannot, and have the wisdom to know the difference) can aid them in coping and adaptation.

### *Self-Concept Mode*

Roy and Andrews (2009) included self-concept as a significant mode; through this adaptive mode, as with other adaptive modes, individuals act on stimuli reflected in behavior. The same can be said for parents and families. According to Roy and Andrews (2009), the self-concept mode consists of the physical self, which includes the body sensation and body image, and the personal self, which includes self-consistency, self-ideal, and moral-ethical-spiritual self (Roy & Andrews, 2009). The self-concept of a parent of a young adult child, either biological or adoptive, is to a significant degree informed by the character and characteristics of their child as well as their own self-concepts and relationship. Memories of childbirth (if the biological parent) and childrearing provide experiences and stories that inform the self-concepts of parents. It is not the sole element of the parent's self-concept, but it is usually central. Step- and foster parents, because their relationships are likely to be shorter and probably less engaged, are likely to be less informed by the parent-child relationship. It is difficult for all parents to not engage in some self-blaming when one of their children has substance use disorder or mental health issues.

Roy and Andrews (2009) identified the underlying need for this mode as psychic and spiritual integrity, which a person needs to maintain a coherent sense of life's meaning and unity. This is particularly important when an adult child's effort to gain independence and success that they believe their parents expect of them, and they expect of themselves, is in jeopardy. This mode addresses how motivated parents accept and do what they can to encourage their adult child. The physical self refers to how the parent perceives her or his own self, which is in part being shaped by their child's substance use disorder and depression. Body sensation includes feelings and experiences that arise in the face of difficult and challenging parenting situations, like being called to come to the ED because their adult child has been taken there by ambulance in an unresponsive state. The personal self refers to the self-assessment of interactions, experiences, values, morals, self-worth, ethics, spiritual-self, self-ideal, and self-consistency (Roy & Andrews, 2009).

In the Phillips (2011) study of the stigma of AIDS, the physical self was described as feeling blemished and experiencing being branded with shame. The participants of that study admitted to being deceitful to others when talking about their illness. The Woods and Isenberg (2001) study of women who had been abused explored how the women felt about themselves and their perceptions of how others felt about them. That study includes a global self-evaluation of self-esteem as well.

### Role Function Mode

Roy described the role function mode as the measurement of the primary, secondary, or tertiary roles that individuals occupy in society (Roy & Andrews, 2009). She defined a role as "the functioning unit of society" and suggested that each person's role "exists in relationship to another" (Roy & Andrews, 2009, p. 360). While parenting is not the only significant role persons have, it is usually one of the longest and most defining. It is also supported by cultural norms and laws, which provide guides to how parents are expected to act within the relationships with their children, at least before the age of 18. Akyril and Ergüney (2013) included the statement "I have trouble caring for my children" as one of the role function behaviors in their study. Farsi and Azarmi (2016) included five questions about family, family roles, and family expectations. DeSanto-Madeya (2006) included a question related to challenging the bonds of love and reaching normalcy. The table shows tasks reflecting the parenting role function of adult children with opioid use disorder. Many parents assume the considerable financial burden and make other sacrifices to help pay for drug and depression treatment for their children. This, like the bonds of love and encouragement, suffers from repeated drug relapses and apparent treatment failures that are common in both substance use disorders and depression.

**Table.** Tasks Reflecting Parenting Role Function for the Adult Child With Opioid Use Disorder.

1	Able to provide love and encouragement
2	Assist them with getting to treatment
3	Help provide them with a safe place to live
4	Help find them work, education, or training
5	Help them avoid setbacks in recovery
6	Encourage them to consider methadone or buprenorphine [Suboxone] (medication-assisted treatment)
7	Interest in having Naloxone (an antidote to opioid overdose) to administer to them in an overdose

Source: Adapted from the Substance Abuse and Mental Health Services Administration (2014).

### Interdependence Mode

The last mode, the interdependence mode, was defined by Roy (Roy & Andrews, 2009) as "the close relationships of people aimed at satisfying the needs for affection and the development of relationships" (p. 385). She included in this mode "the feeling of security in relationships" (Roy & Andrews, 2009, p. 385). As discussed above, the ability to feel love and encouragement from one's parents is a critical asset for persons recovering from opioid use disorders and mental health issues. This, along with engagement in meaningful work or school, is a key motivational factor and at times a life-preserving asset for the young adult struggling with opioid use disorder and depression. Unconditional positive regard, genuineness, and empathy, as described by Rogers (1961), are now seen as necessary but not sufficient for how the parents of adult children with opioid use disorder should act with their struggling offspring. Education about all aspects of drug use and depression is required of parents. Twelve-step support groups remain important assets for persons with opioid use disorder; as it does for other substance use disorders, medication-assisted treatment like Suboxone are more likely to be effective with such group involvement.

### Coping and Adaptation

While overdoses and ED visits as experienced by Robby and his parents are difficult events, they may be valuable teachable moments. Coping and adaptation are more likely to occur between such events. It involves awareness that Robby's brain has been commandeered by his use of an opioid problem and complicated by his depression. Coping with and adaptation to his reality involve appreciating that recovery and resumption of full function in his life is possible but never free of the risk of relapse. The current treatments of opioid use disorder, and other substance use disorders, with depression involve mutual help groups (12-step), cognitive behavioral therapy and motivational interviewing, medications, family therapy, primary care services, and mental health services.

## Case Study: Cathy's Story

The second case study explores the wide applicability of the RAM and CAP. Cathy, a 56-year-old married woman, underwent bariatric (Roux-en-Y Proximal gastric bypass) surgery to help manage her obesity and diabetes. A bariatric surgery case was chosen for this paper to further show aspects of RAM and CAP not well explored in the above case and to provide nurses with a theory-based guide to helping postbariatric surgery patients be successful in managing their weight and health issues. Bariatric surgery is a treatment for the management of morbid obesity or obesity associated with significant medical conditions, such as diabetes mellitus Type 2, hypertension, cardiovascular disease, stroke, sleep apnea, gallbladder disease, gout, chronic kidney disease, nonalcoholic fatty liver disease, and other conditions worsened by excessive body fat. Obesity, which is seen now as an epidemic because of its rising incidence, involves excessive calorie consumption in the face of limited physical activity or exercise. While it is discussed as related to complex factors, it can also be seen as an addiction to consuming pleasurable foods, which activates some of the same brain chemicals involved with heroin use although at a much weaker intensity. These are the pain and pleasure areas of the hippocampus and limbic system. Also, like a substance use disorder, continued excessive consumption of high-fat and -sugar foods in the context of negative medical consequences results in reduced functioning and disability. The pleasure-providing capacity of food and eating is continually reinforced by the food, restaurant, and farming industry.

Cathy is married and has a 4-year college degree. She works as a unit secretary in a hospital, and because of that, she has better than average health insurance, knowledge of the healthcare system, and many personal contacts with doctors of various specialties. At the time of her surgery, she was obese and had poorly controlled Type 2 diabetes mellitus. The RAM was used in a study of postbariatric surgery patients by Marklin (2015). She suggested that the establishment and maintenance of effective coping and adaptation postoperatively was necessary to maintain a healthy body mass index (BMI), which in turn affected the participants' self-esteem, marital status, and work life.

## Discussion

The Roux-en-Y Proximal gastric bypass procedure represents an alteration and adaptation for the whole person. The change in the physiologic mode is the most obvious. With the Roux-en-Y Proximal gastric bypass procedure, the small intestine is divided and rearranged into a Y configuration, reducing the size of the stomach and enabling outflow of food so the patient experiences a rapid onset of feeling full and satiety after ingesting a small amount of food. When successful, the procedure alters weight regulation and eating behavior. To be effective, it is necessary for the person to eat

five to six small meals daily, with snacking between meals. The reduced eating can be associated with reduced occasions of pleasure and periods of depressed mood. According to one neurobiological view of addiction, the brain had been previously commandeered by the repeated exposure of pleasure areas from the addictive eating pattern, which is now prohibited by the postbariatric surgery gastrointestinal tract.

Current research on the link between the gut biome and the brain suggests that the bacteria flora in the gut is linked to our brains and moods. How that is altered by gastric surgery is still unknown. It is clear that coping and adaptation to new eating habits is essential for achieving successful postoperative weight loss and maintenance and improved health outcomes. Marklin (2015) used BMI as the chief measure of the physiological mode for her study. Nutritional and exercise education and counseling are also a critical component of the physiological mode of coping with and adapting to postbariatric surgery. These approaches can assure adequate amounts of essential protein, vitamins, and other nutrients are consumed and muscle mass is maintained.

## Self-Concept Mode

Marklin (2015) used self-esteem as the chief measure of the RAM self-concept mode in her study. Self-esteem is likely to be profoundly important when considering coping and adaptation by postbariatric surgery patients. Many of them suffered from low self-esteem before the surgery, because of the stigma and self-blame associated with obesity, in addition to important self-image, self-ideal, and the moral-ethical and spiritual self-issues that are part of the self-concept mode (Roy & Andrews, 2009). As mentioned above, Roy and Andrews (2009) highlight psychic and spiritual integrity. Needing to undergo bowel-altering surgery, which is not without significant risks and costs, to achieve behavioral change and healthy weight may be considered by some people as evidence of personal failure (it likely followed multiple failed diets and exercise efforts) and public embarrassment.

In Cathy's case, largely because she had talked to several nurses and doctors she worked with about having the surgery, it was public knowledge at her worksite, and likely this produced some support and embarrassment. Self-conceptions and habits, such as body-image and eating behavior, usually linger on after rapid weight loss; in part because of the implicit longer term memory that the brain has encoded in neuronal dendrites and spikes, short-term learning is not yet encoded biologically. Persistence, meditation, and group support are helpful coping strategies associated with successful long-term adaptation and weight loss maintenance. Lee, Tsang, Wong, and Lee (2011) had used the RAM to consider pregnancy, which also includes weight and other physiological changes that call for coping and adaptation. They included in self-concept personal feelings about changes in physical appearance as well as social and cultural perception about the changes in physical appearance of a pregnant woman. In

Marklin's (2015) study, BMI 6 months after surgery was a statistically significant predictor of participant's self-esteem; lower weight was associated with higher self-esteem. She also reported that higher coping scores were associated with lower weight and thereby higher self-esteem.

### *Role Function Mode*

Marklin (2015) used occupational status as a measure of the RAM role function mode. In this case study, Cathy resumed her job as a unit secretary after her bariatric surgery and continued in that job still, now 2 years later. Even modest weight loss is associated with improved functioning for someone who previously was morbidly obese. Even in the case of moderate weight regain, there are health and function improvements that may be sustained. In other studies using the RAM, improvement in function was associated with improved feeling of well-being (Akyril & Ergüney, 2013), improved social self-efficacy (Buckner et al., 2007), and feeling normal again (DeSanto-Madeya, 2006). Each of these is likely to be operative in the case of coping and adapting postbariatric surgery. In Marklin's (2015) study, higher coping and adaptation scores were associated with lower postbariatric surgery weight, which was associated with a higher chance of being employed. A related finding is that loss of the provider role for medical reasons is associated with poorer postretirement adaptation (Ordin et al., 2013).

### *Interdependence Mode*

The last of the four modes of the RAM to consider in the Cathy case study is the interdependence mode. Marklin (2015) used marital status as a measure of this in her study. In her literature review, she had included references that identified a significant divorce rate after bariatric surgery, but paradoxically it was also associated with improved sexual relations. Cathy's marriage and relationship with her daughter and coworkers were generally stable and not changed by her having bariatric surgery and some weight regain after 2 years. Anecdotally she was calmer and more subdued after coping and adapting to her new weight and postbariatric surgery body and eating habits. This could be seen as maturation or mild depression after surgery. Perhaps with the reality of postbariatric life, even with stable lower weight and improved medical health status, life struggles are relatively unchanged and need continued attention and work; bariatric surgery is not a magic bullet. People need ongoing family and social support to live with their new weight and health issues, as did the patients coping with and adapting to leg amputation in the study by Farsi and Azarmi (2016). As with the study of pregnant women, the underlying assumption with the interdependence mode is the need of the individual to maintain close relationships with others for affirmation, affection, development, and resources (Lee et al., 2011). In Marklin's (2015) study, higher coping and

adaptation scores were associated with lower weight after bariatric surgery, and weight loss did not have an impact on their family and other social ties.

### **Conclusion**

Marklin (2015) and other RAM-guided studies of groups of persons needing to cope and adapt to significant change showed that successful coping and adaptation lead to improvements in life. Weight loss can allow persons greater mobility and freedom, and it can be associated with economic advantages and other benefits. Coping and adaptation are usually associated with improved self-esteem and marriage stability. But not all persons who undergo bariatric surgery have sustained weight loss and these related benefits.

Strecher (2013) likes the frog and the boiling water metaphor to define the public health issue of obesity and related illness. The idea is that a frog put into boiling water will do everything it can to get out, but one put into cool water that is slowly heated until boiling will fall asleep and boil to death. While eating has habitual and addictive potential and is related to mood, obesity is for most people gradual in onset, whereas heroin addiction is much faster in its progression from occasional to desperate craving and life-threatening overdoses. Therefore, parents remain critical assets in the opioid use problem and more peripheral in the obesity case. In both cases, the RAM and CAP provide a useful framework to guide practice and research.

Assisting parents coping with the challenge of having an adult child with an opioid use disorder and depression will help them to adapt and heal and, hopefully, provide the scaffolding their child needs to overcome their addiction. The postbariatric surgery person has an altered physiology that requires considerable coping and adaptation to be a success, but the benefits for those who do that are significant. There remains considerable social stigma to both problems. Nurses and other health professionals, to best serve their patients and their families, need to rise above biases and offer unbiased positive regard to all of their patients. Nurses should try to provide the parents of persons with opioid use disorder and mental health issues and postbariatric surgery patients a holistic plan of care to promote and maintain health. The RAM assumptions and the four adaptive modes of the RAM provide a useful framework. The case studies in this paper provided identifiable behaviors that are associated with the four adaptive modes of the RAM. This case study paper and review helps demonstrate the utility and versatility of the RAM to address current health challenges. The RAM and CAP provide a solid conceptual foundation for nursing and advanced nursing practice.

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