



Using Intelligence Theory to Teach Obesity Group

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Introduction

Every brain is different, so it is a challenge to use standardized methods to teach everyone a complex topic (obesity prevention) even though they share the same physical composition. The brain has multiple functions in processing information. In the medical field, a stroke patient may lose the ability to speak however, it does not necessarily impact the functions of hearing, listening, or communicating by writing. And while it would be enormously beneficial if obesity prevention could occur with a vaccination, this is not the case at all. The complexity of solving the current obesity crisis is difficult but not impossible to approach.

In general, the occipital lobe is the visual processing area, the temporal lobe is involved in hearing and listening, the frontal lobe deals with comprehensive work such as problem solving, behaviors, intelligence and body movement, and the parietal lobe interprets signals from the external environment. The left hemisphere controls speech, comprehension, arithmetic and writing, and the right hemisphere controls creativity, spatial ability, and artistic and musical skills. Some people are visual learners, some of them are audial learners, and others rely on reading or even writing. Some of these learning functions are shared, so it is hard to distinguish which teaching method is the best for a certain group of people. The complexity of our brain function may not always be properly defined by a single theory.

There is an ongoing debate among cognitive psychologists concerning the architecture of the human mind. According to the traditional empiricist philosophy, all knowledge comes from

experience. This philosophy originated per Okasha, from John Locke and David Hume who argued that at birth the human mind is a blank slate with nothing written on it. It is only through experience that a human comes to have concepts and knowledge. We will discuss this, the modularity of the mind hypothesis and how it can help in obesity prevention program. This is particularly important in the area of psychology and the debate between the mind as “general problem solver” or the mind containing specialized subsystems or modules.

Noam Chomsky is an American linguist, philosopher and a cognitive scientist who is sometimes called “the father of modern linguistics”. Chomsky is a special philosopher who changed the area of the linguistics by assuming language as a uniquely human biologically based cognitive capacity. Learning (cognitive development) is a complex process and is influenced by our experiences, by social interaction with adults and with the environment. Chomsky further explained in his theory that “language acquisition is a modular-capacity-such as the fact that even those with low ‘general intelligence’ can usually learn to speak perfectly well.” [1]. The cognitive system performs a limited, precisely circumscribed set of tasks. In the example of the Muller-Lyer Lines Illusion, we observe two parallel lines equal in length but looking unequal due to the opposing arrows at the end of each line. According to Fodor, knowing that the lines are equal but perceiving them as unequal means the person cannot prioritize or incorporate his knowledge with his perceptions to override the optical illusion. It explains the theory that visual perception is an informationally

encapsulated module stored in the mind [1]. People have the ability to integrate what they see and interpret this by their perceptions. In this situation, I support Chomsky and Fodor's theory, similar knowledge used in education for obesity prevention may not be perceived the same way by all learners, so we must accommodate different teaching styles for the learners to understand all the materials.

Similar idea from Fodor, In the "The Modularity of Mind: Fodor argued that mental modules have a few distinguishing features, of which three are important. The three features are [1]:

- The cognitive system is domain specific: in other words, limited to a specific task, such as language, facial recognition, empathy, music.
- Operation is mandatory: it does not choose whether to function. Music is heard as music, not just noise. Language is heard as words not just sounds. Known faces are recognized.
- Two examples are: (You can hear what is coming out of my mouth as words, and you can help but see me as a classmate.) Also have you ever been around a crowd of people talking in a coffee shop and you're standing to get your coffee drink, and even though you weren't trying to eavesdrop on the conversation you overheard it anyway even without concentration, especially if the people speaking your native language, you grew up around or perhaps eventually learned.
- Informationally encapsulated: This is best explained by the example of the Muller-Lyer Lines Illusion discussed above.

This explanation shows how Chomsky supports Fodor's hypotheses on the human mind. However, Fodor later believed that the mind is partly though not wholly modular; we solve some cognitive tasks using specialized modules, others using our general intelligence.

People are sensitive to different stimulus based on their perceptions, culture, and experiences. Behavior and learning about food can be developed starting at a young age. What families serve their children comes from cultural norms, traditional culinary customs, and possibly religious connotations. Additionally, the environment, availability of food, family resources and the social context influences this as well as a family's beliefs, practices, desires, and identities. These elements create personalities that will make the decisions in the future as to what and when to eat, and when and where to exercise. A modular approach to these four questions may be at the heart of obesity prevention, but only a perceptive, culturally sensitive approach will help to understand learners' needs. Obesity is preventable, however due to the complexity of causes and differing cultural norms, healthcare providers need to ascertain the individual causes, if possible, of each person's obesity to develop a best approach prevention program.

Sociocultural interaction and parenting play necessary roles in cognitive and behaviors development. Since people use different ways in learning, the teaching methods need to fit everyone's needs to support a good success rate. According to the brain function,

Visual, Audio, Reading and Kinesthetic (VARK) is used to explore different learners' needs which is similar to Chomsky's theory in cognitive and social interaction. Each participant is in a different environment with different simulates. Using visual, audio, reading and kinesthetic based on learners' preferences or accessibility will be helpful.

Obese people need to understand the causes of the condition, the complications it may lead to, and prevention of it, so that a healthier lifestyle will follow. The proper teaching methods must be determined to enhance a good match to the willing participant. As nursing practice includes promoting good health, different kinds of learners will be matched to a variety of methods to ensure success. These materials should be easy to understand and practical, so learners, especially non-English speakers, will have no difficulty understanding them. Obesity education in America may have to be translated into different languages and should probably use local nurses who speak their native language to teach learners. Thus, learners will understand better instead of ignoring the message.

The content of obesity prevention program should include the most up to date delivery systems available across multiple platforms of technology. That includes video, literatures on calorie counting, healthy eating, internet exercise programs, telephone apps, and even using comic picture explanation to help learner retain the information. In the obesity prevention program, the "Supersize Me" video will be displayed to let learners understand how dangerous obesity can be to their health. This is simple and easy to understand, especially for young people who have not mastered cognitive development. The film will have subtitles for those who need a translation and inform through image stimulus of recognized trademarks (McDonalds symbol). The man in the Supersize me video is seen comparing the before and after changes to his body weight, measurements and internal bloodwork. This may inspire participants to question their own frequency of eating fast food.

While adjusting fast food habits, patients must also be educated about the place of vegetables, healthy proteins (fish and chicken), appropriate amounts of dairy (milk, yogurt) on the human body. Participants will relearn what to eat, how to eat and when to eat for the optimum portion control. Immersing the participants in their own food shopping and teaching label reading will guide them toward making healthier choices. This social interaction (Chomsky) will give learners a new opportunity to learn better with hand on skills and they can share with other people their experiences.

While this learning involves a variety of many methods, knowledge retention and encouraging good habits are both very important. Healthcare providers need to make sure the learners know what each bite of food does to the body, how to balance their consumption of proteins, carbohydrates, fats with appropriate amounts of exercise to avoid gaining additional weight. While limiting the consumption of fast food or junk food, learners must be encouraged to try different sources for breakfast, lunch, and dinner other than relying on these coast-to-coast establishments. This requires multiple brain's function. Firstly, you recognize the symbol

through visual stimulus, then connect to the brain where learners retain the information, and then learners apply the knowledge to avoid eating fast food. Advertising provides visual, audio simulation to people and making them want to eat fast food. Memorization, coding, and delivery were used in this case as Chomsky theory in social interaction and cognitive development. So, eliminating unnecessary stimulus is important. Learners have different opinions and view of healthy eating and lifestyle.

First of all, healthcare providers need to know what learners' definition of health is. Then start to do adjustment based on individual needs. Learners with different lifestyle could have difficult time to follow standardized protocols. Flexibility is necessary, multiple teaching time is in cooperative into learners' schedule. Therefore, learners will have opportunities to participate in the obesity prevention program. Hand on skill is important, habits can be developed through experiences as experience are good teacher and practice makes perfect. The view of social context is environment, according to Chomsky [2], "learning was through native speakers seen as an ideal speaker hearer, learner was chosen to denote someone in engaged in psycholinguistic process of internalizing a body of knowledge" (P 47). "Knowledge and its representation in mind were seen as a way of development of a communicative competence" (p.47). The environment plays a major component on cognitive and social development including behavior modification. Learners will adjust their needs and using their specific domain in learning. When healthcare providers interact with learners, for example, taking obese people to do food shopping, teaching them to read labels, finally preparing and cooking food, learners will start to develop the habits through these guided life experiences and to adjust their activity of daily living. Reinforcement will a necessary technique to remind learners to use correct methods, but the reading of labels is paramount to making good food choices.

On the other hand, since brain has multiple functions, it can be difficult to tell which one is dominate at certain time and situation. As there are no single causes of obesity, people eat food for many different reasons: hunger, emotional needs, stress, the sight of someone eating, a newspaper ad, passing a restaurant, a traumatic experience. Suddenly, they want to eat. So, who or what module tells the person what to eat? Here we need to teach mindfulness, the pause that makes the participant self-question "why am I eating this?" Each food object contributes to either a proscribed total of caloric intake or is simply added to the food diary and becomes part of the patient profile. However, each participant approaches this, the food object must be viewed as the potential toward, or prevention of, obesity.

Similarly, the approach to exercise must begin with the reason for doing it. "Why am I doing this?" is the motivation to actively participate in exercise. Eating the healthiest food in the world will still lead to obesity if the caloric intake exceeds the caloric output. Additionally, people can participate in the most vigorous exercises, but may still remain obese due to their food choices. Intelligence does not always motivate behavior or perception, but strength of will and determination can lead one to change one's

behavior. The modular cognitive processes are not susceptible to top-down influence by the prepositional of knowledge. The argument for modularity is that specialized cognitive devices avoid the frame problem and its consequences for real world learning [3]. The operation module cannot be affected by central, domain and general process, so modularity of mind cannot explain all the possible reasons why participants make poor food choices. There is no true or false for the correct answer.

When developing an obesity prevention program, healthcare providers should begin with a seriously inquisitive profile of the participant, including current lifestyle, socioeconomic background, spiritual influences, physical condition, psychological and emotional stability, education level, exercise habits, family and cultural background is necessary to produce well-structured obesity prevention program for this individual. Motivation is a very important component in making self-changes; changing requires emotional, physical and psychological preparation. An overview about the rise of obesity, the dangers and comorbidities of it, and the appropriateness of the present intervention will do no good unless the participant is ready and willing to make the changes. This can indicate what the success rate could be. If the participant is not ready to make changes, then the intervention will be a wasted experience. Therefore, modularity of mind is right in one side however, this theory neglects to integrate all the information into consideration. Participants exposed to different environments and social interactions can have very different levels of understanding and interpretation, as well as successfully preventing obesity.

According to Orciari [4], the fast-food industry spends \$4.6 billion annually to advertise mostly unhealthy products to children and teens, its target audience. Food advertising and marketing has contributed to Americans eating high-calorie foods with little or no nutrition [5]. Food advertising has a strong effect on an individual's food choices and eating behaviors. Advertising is everywhere on internet websites, newspapers and magazines, and on billboards and in the subways. This is the enemy of obesity prevention programs. Theory and practical models do not always work together because of swift changes experienced by successive generations of people and the inability of nurses to adapt to such fast changing global events.

Since there are many influences from the external environment and the lifestyle dictators of fashion, food and entertainment, teaching methods need to be updated, not just based on brain function. Collaboration with legislators, community leaders, and healthcare providers need to implement the proper plan of care when battling the corporate world of advertising. A recent phenomenon has been the incredible rise and addiction of vaping through mass media and targeted advertising of a harmful product.

Nurses can go to community, assessing community needs, collaboration with other healthcare providers and evaluation the outcome. The course materials need to be reviewed before deliver to the participants to fit individual needs. Interview with participants to gather the information then follow with regular intervention to make adjustment on the care based on living conditions and

dietary factors. Follow up is necessary to understand participants condition and changes. Participants can use phone call, e-mail, text message to contact healthcare providers when they have questions. Therefore, social interaction and using different part of brain function need to coordinate together to provide quality of care in learning and teaching obesity prevention.

In conclusion, culture, technology, advertising, and changing lifestyles all impact on the obesity rate. Obesity prevention program must focus on participants' learning skills and adaptive lifestyle to help them to lose weight. Chomsky and Fodor's theory is applied in educating learners' learning style and in addition to use social interaction into their lifestyle by using holistic care approach to prevent obesity and help them to lose weight.

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Conflict of Interest

No conflict of Interest.

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