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Utilizing Community Based Participatory Research to Address Health Literacy Issues: An Example in Southeastern MN

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Utilizing Community Based Participatory Research to Address Health Literacy Issues: An
Example in Southeastern MN

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Submitted in partial fulfillment of the
Requirement for the degree of
Master of Arts in Nursing

AUSGBURG COLLEGE
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**Augsburg College
Department of Nursing
Master of Arts in Nursing Program
Thesis or Graduate Project Approval Form**

This is to certify that **Jennifer Weis** has successfully defended her Graduate Project entitled **“A Collaborative Model Utilizing CBPR to Address Health Literacy Issues: An Example in SE MN”** and fulfilled the requirements for the Master of Arts in Nursing degree.

Date of Oral defense **March 31, 2009.**

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Abstract

Utilizing Community Based Participatory Research to Address Health Literacy Issues

Jennifer A. Weis

Mar. 31, 2009

_____ Integrative Thesis

X Field Project

Low health literacy interferes with an individual's ability to reduce and treat preventable diseases. Given the spectrum of disease burden throughout the US, there are a number of important health topics deserving of our immediate attention in order to improve the public's health literacy. Overweight and obesity have surfaced as societal topics and any quest to improve health literacy must address these growing problems as they are likely to contribute to disease prevention and improved disease management.

Unfortunately, the growing problem of overweight and obesity is not restricted to adults. America's youth are also experiencing epidemic rates of overweight and obesity which are directly associated with chronic illnesses such as diabetes, hypertension and cardiac disease. Traditional methods of individualized care have not proven to be effective in addressing this health issue. The question remains as to whether a differing approach utilizing Community Based Participatory Research (CBPR) methods are more effective than the traditional medical model approach to addressing this growing health concern. This field project outlines the process of developing a CBPR project designed to maximize the efforts of health professionals, teachers, parents and students as collaborative partners in addressing childhood obesity.

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Chapter 1

Background of the Project

The National Institute of Health (NIH) defines health literacy as “the degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions” (Keppel, 2007, p. 1). Health literacy is vital to an individual's own health promotion, prevention and health maintenance. Given the level of importance that health literacy plays in our lives it is alarming that the overall level of health literacy in the United States is marginal at best. A recent report for the National Center for Education Statistics found that 36% of all US adults have only basic or below basic health literacy skills (Kutner, Greenberg, Jin & Paulson, 2006). These percentages are even more alarming when considered by race and ethnicity. Nearly 60 % of African American adults and over 65% of Hispanic adults fall into the lower two levels of health literacy (Kutner et al., 2006). To put this in perspective, depending on an individual's race and ethnicity, either one third or upwards of two thirds of US adults will struggle with health decisions for themselves, their children and their extended family. The above data highlights the importance of health literacy levels in relationship to making every day decisions that ultimately have an overall influence on an individual's health and well being.

The dismal state of adult health literacy is an important issue for health professionals to both consider and manage. Comprehensive assessments on health literacy have been limited to adult populations. One could speculate that if the health literacy of US adults is low, that the health literacy of children and adolescents would follow suit. Improving health literacy will require a comprehensive approach, but I

hypothesize that one proactive measure that if implemented will likely lead to higher rates of adult health literacy, is the provision of improved health education to US children. Given the broad list of health topics that fall under the umbrella of health literacy it is important to consider which specific topics should be prioritized before establishing programs targeting US youth. Preference should be given to topics that address the fastest growing health concerns for this targeted population and to those that are likely to yield the most added value.

Childhood and Adolescent Obesity

Leading pediatricians and epidemiologists attribute overweight and obesity with onset in childhood or adolescence as the main culprit in the development of preventable chronic diseases. “Overweight and obesity track from childhood into adulthood, and adolescent obesity has been linked to higher all-cause mortality in adulthood” (Lowry, Wechsler, Galuska, Fulton, & Kann, 2002, p. 413). Given this alarming trend it’s easy for health professionals to justify the prioritization of related health education topics as a reasonable starting point for ensuring that our youth become health literate on preventable disease at an early age in order that we diffuse this escalating problem. Dr. Richard Horton, physician and international medical researcher, recognizes obesity as a massive contributor to many preventable diseases and he calls for early intervention to change the course of this world wide epidemic (Horton, 2005). Horton goes on to acknowledge that

Chronic diseases represent a huge proportion of human illness. They include cardiovascular disease (30% of projected total worldwide deaths in 2005), cancer (13%), chronic respiratory diseases (7%), and diabetes (2%). Two risk factors

underlying these conditions are key to any population-wide strategy of control—tobacco use and obesity. (Horton, 2005, p. 1)

Horton cautions that the significant reduction of deaths we have seen world wide related to infectious disease will be quickly nullified by the growing deaths related to preventable illness if we do not act swiftly to change the current course (Horton, 2005). Horton's warnings, accompanied by pediatrician Dr. Michael Kohn's findings that acknowledge the growing epidemic of obesity affecting adolescents worldwide serves as sufficient evidence that one of the first health literacy topic addressed in children and adolescents should be that of nutrition and physical activity (Kohn & Booth, 2003, p. 38).

Another leader on this topic is William H. Dietz, MD, PhD. He is both Pediatrician and Director of the Division of Nutrition, Physical Activity, and Obesity at the CDC. Dietz provides an astonishing summary of the magnitude of this problem stating, "The prevalence of overweight doubled among children 6 to 11 years of age and tripled among those 12 to 17 years of age between the first and second National Health and Nutrition Examination Survey" (Dietz, 2004, p. 1). These staggering numbers drive home the importance of addressing this issue with urgency in order to prevent the associated disease burden that often accompanies overweight and obesity.

Purpose of the Proposed Study

As a health professional, I'm acutely aware of the growing problem of overweight and obesity both nationally and internationally. However, it was not until I was approached by a local middle school health instructor for assistance in identifying interested health professionals to speak to this topic in her classroom that I stopped to consider the implications of this issue at a local level. I admired the teacher's

willingness to address this issue, but shared my concern with her that I was not confident that the plan would have any measureable impact. Of even greater concern was that the proposed approach was not likely to be sustainable as it relied on the good will of others and required minimal involvement from the participants' perspective. I felt personal investment and participation would be key elements of success. I reviewed what I considered to be a fatal flaw in her approach, which was that the plan placed both the school and the students in a passive role with respect to the solution. We had continued discussions over a period of time and given her ongoing interest in finding a better way to educate her students I agreed to work with her if she were willing to address this problem in a collaborative manner, utilizing the relationship based model of a Community Based Participatory Research (CBPR) approach.

Given the above, the purpose of this project is to describe the formation of a community based participatory partnership involving health professionals, educators, students and parents. The partnership's key objective will be to work together to identify effective ways to promote wellness and prevent overweight and obesity in middle school children.

Prior to formalizing our efforts the middle school educators approached the middle school principal for his support of the anticipated proposal. He not only voiced his recognition of the growing problem of overweight and obesity in children and adolescents, but also offered his full endorsement of the proposal. He offered praise and encouragement to the health educators and advised that the proposal seek further approval via the District School Board. We sought and received the School Board's approval for our anticipated activities in November of 2008. In seeking their approval we

explained that the beginning efforts of the partnership would involve discussions and planning on how to jointly address the following magnifiers of low health literacy as they relate to pre-teens and adolescents;

- Poor communication
- Stress, fear or discomfort with the topic
- Complex educational materials designed for adults or parent population
- Culturally incompetent communication
- Language barriers
- Income

Preliminary discussions amongst the health and academic partners have included that the objectives will be accomplished in part through health education and the promotion of conscious choices related to nutrition and physical activity. Identified action points for the partners include;

- Consideration of possible methods to improve nutritional health literacy in an at risk population.
- Consideration of the interest level of the student population to participate in the design/strategy.
- Consideration of the modification of existing tools at our disposal so they better suit the intended audience.
- Consideration of the benefits of our partnership and collaborative efforts.
- Identify the specific aims of our educational project intended to improve the health literacy of a specific population
- Identify anticipated clinical outcomes

To achieve these goals Social Cognitive Theory (SCT) (Bandura, 1986) which takes advantage of social learning and modeling will be utilized to positively influence the students choices related to nutritional and physical activity. Students will work to establish healthy lifestyle goals and to recognize the conscious choices that they alone are in charge of which are likely to contribute to their overall wellness (Cole, Waldrop, D'Auria, & Garner, 2006). We anticipate that these measures will be implemented within the existing partnering middle school's health program. The program is a comprehensive three year health program involving all 6th, 7th, and 8th grade students. It was initiated by the school district in the fall of 2008. Given the teachers concerns that the health program has thus far been unsuccessful in addressing overweight and obesity in the targeted population, we've agreed to jointly tackle this issue through a Community Based Participatory Research partnership. The schools existing infrastructure for health education along with their interest in jointly modifying the course with student and parent input are thought to be strengths that will lead to the ultimate success of this proposal.

Relevance of Roy's Nursing Theory to Health Literacy

Many nursing theories are applicable and important to consider while reflecting on ways to improve low health literacy in middle school students. Callista Roy's model seemed most fitting to the health class interventions. Roy's model comprises several key concepts including person (referring to the recipient of care), goal, health, environment, and nursing activities. The recipients of nursing care in Roy's model are adaptive beings. Adaptive is used to describe an individual's ability to adjust to changes occurring in the environment, which then influences the environment (Andrews & Roy, 1991). In this model, nurses have the opportunity to facilitate the targeted audience's adaptation in

order to promote overall health. This model fits nicely with the middle school proposal to improve health through improved health literacy, which is based on empowering pre-teen students to better understand or adapt to unfamiliar health practices. This improved understanding places students in a stronger position to understand and access available health services. This adaptation will allow them to make informed decisions when accepting or rejecting the services offered. Approaching medical decisions from an informed vantage point and participating in health decisions is known to improve overall health. This adaptation reinforces Roy's theory of a person as an adaptive system.

The nursing activities as defined by Roy (Andrews & Roy, 1991) include assessment of behavior, assessment of stimuli, nursing diagnosis, goal setting, intervention, and evaluation. These activities lend themselves to an initial assessment of the current behavior of middle school students in order that the contributing factors to overweight and obesity in this population are identified. This step will be followed by assessment of the involved stimuli and development of a nursing diagnosis to improve the student's nutritional health literacy. The next step will involve collaborative efforts between health professionals, educators, students and parents to develop measurable activities and goals that will improve nutritional health literacy. Implementation of the planned educational interventions will be carried out by the collaborative team and will be followed by an evaluation. The evaluative assessment will help to measure the success of the interventions, in addition to determining how best to alter future interventions.

Roy's adaptation model was originally developed in 1981 and focused on adaptation of individuals. In the late 1990's she expanded the model such that it could be

applied to groups as well as to individuals. The model was written with such visionary insight that it is still applicable today and able to provide the underlying infrastructure for modern day issues facing middle school students in the new millennium.

Assumptions

The following assumptions will provide direction to the research partnership in their quest to address overweight and obesity in children:

- 1) The creation of collaborative partnerships will be more effective in addressing overweight and obesity than have been the preceding individualized efforts.
- 2) The provision of improved nutritional health literacy for middle school children will reduce overweight and obesity in this targeted population.
- 3) Strategic interventions can indeed reverse the increase in overweight and obesity in the targeted population.
- 4) Interventional efforts incorporated into the existing health program for grades 6th, 7th and 8th, will in fact prevent overweight and obesity in many, while providing better tools for management to those who are already struggling with this health risk.

Summary

In summary, neither health professionals, academic institutions nor single family units have been successful in adequately addressing overweight and obesity in children. Therefore a differing approach, which fosters collaboration between health professionals, teachers, students and parents is worthy of consideration. The involvement of the targeted audience in the design and implementation of the efforts is also likely to strengthen the proposal and its intended outcome. Given the collaborative approach of

this proposal, it is likely to be more successful than the previous individualized efforts aimed at reducing overweight and obesity in children.

Chapter 2

Literature Review

Our future ability to successfully manage overweight and obesity in children and adolescents must include the wisdom and experiences from many different disciplines. The following overview of literature intentionally demonstrates a collection of references from a variety of disciplines including Nursing, Education, Behavioral Sciences and Medicine.

Roy Adaptation Model

Callista Roy's Adaptation Model of nursing recognizes people in terms of holistic adaptive systems. In the late 1990's Roy expanded this model through the application of the adaptive modes to groups; which allowed for the recognition of groups as adaptive systems (Roy, 2008). The plurality of Roy's model and its relevance to the adaptation of both individuals and groups is of particular significance to this proposal. The group adaptive modes include the physical mode, group identity mode, role functioning mode, and the interdependence mode. "The physical mode provides whatever is required for the group system to survive and to enable it to adapt to changes" (Roy, 2008, p. 411). Roy identifies strategic planning and resource management as one of the main key processes thorough which groups are able to adapt to change. Strategic planning will be a key concept within our partnership involving all members of our group, including the students. Involvement in the process of defining the strategy and direction of the proposal is likely to foster cohesiveness within group members. Including individuals in the development process is not only a feature of Roy's physical mode of relating people, but also a required element of Community Based Participatory Research. The establishment

of a collective game plan with defined action items, and timelines will help to build group unity through shared goals and objectives.

Group identity is the second mode of Roy's relating persons. It is defined as "the self image and shared responsibility of the group" (Roy, 2008, p. 432). The group's awareness of their shared identity is the basic foundation of this mode and if effective it results in the achievement of common goals (Roy, 2008). This is applicable to the proposed project given that we would like to establish shared goals for the students including healthy lifestyle choices such as wise nutritional choices and increased physical activity. Establishing a strong group identity within our partnership will theoretically improve our ability to achieve the common goals of our proposal.

The third mode of Roy's relating persons, role function mode, outlines the significance that individual roles hold, and how group members relate through their roles. This is pertinent in that "roles are considered the functioning units of society and each role exists in relation to another" (Roy, 2008, p. 457). Roles within groups can either be assumed or assigned and it will be important within our partnership to ensure that positions of power are assigned to students and parents and not just to educators and health partners. This will facilitate the groups expectation that the responsibility for the adaptations needed to accommodate healthy lifestyles is in keeping with their role within the group and within society. "It is through the roles occupied in the groups that the work of accomplishing the purposes of the group takes place" (Roy, 2008, p. 459). This is important in that those who are able to work towards group accomplishments are likely to be able to sustain and maintain those accomplishments as they move on to be members of other groups. This partnership has defined it's accomplishments as healthy decisions and

the implications of sustaining these accomplishments has far reaching health implications for members of the group.

The fourth mode relating persons is that of interdependence. This mode broadly applies to “groups relating to other groups” (Roy, 2008. p. 484). The potential role of the interdependence mode cannot be downplayed in the proposed pilot. The goal is to encourage relational interdependencies with human systems that promote healthy lifestyles such as health clubs, swim teams and healthy restaurants. In addition it could be anticipated that the targeted audience create new groups that reinforce the groups goals based on relational interdependencies. As an example a group of neighborhood kids may opt to walk to school together rather than ride the bus, or a group of parents may decide to have more fruits and vegetables available and opt to prepare less processed food. These hypothetical groups, if actually developed, would reinforce the goals of the partnering group while providing relational integrity to the primary group.

Health literacy

The literature supports addressing overweight and obesity through health education at an earlier age. Parker, Wolf and Kirsh found that a “a formative public health response should include seeking out new strategies for health systems to advance our public’s health literacy, while working with the educational system to better equip younger generations with the knowledge and skills necessary to navigate health care” (2008, p. 1). This was further emphasized in a recent study which reported evidence that at risk behaviors for overweight and obesity began at an early age with the highest rate of behavioral risks being present in high school years. Given their findings the authors promoted educational interventions at an early age to promote healthy lifestyle behaviors

and to reduce increasing risk behaviors for overweight and obesity (Driskell, Dymont, Mauriello, Castle & Sherman, 2008). Additional references focused on the need to ensure the ability of America's youth to access and identify valid health information online, opposed to invalid information (Brey, Clark & Wantz, 2007). This is particularly relevant given today's youth's access and proficiency in utilizing internet sources to acquire every day information.

This mode of information gathering is likely to be heavily utilized by the targeted population and therefore is relevant to this proposal. The literature also recognizes the importance of school health teacher's own level of health literacy as the counterpart to the student's level of health literacy. Proponents for positive change in existing school health programs are seeking "a new vision for preparing educators to work in the area of child, adolescent, and school health promotion" (Peterson, Cooper & Laird, 2001, p. 138). The literature encourages health instructors to include methods of teaching that rely more heavily on the demonstration and active use of health skills, with the presentation of health information at an earlier age so that it can be applied. This strategy is more likely to generate students who incorporate the learned skills and health behaviors into their own lives (Peterson et al., 2001).

Given these findings, collaborating partners will need to make every effort to design educational and physical activities that incorporate, and therefore reinforce, the desired behaviors they wish to promote. In addition, evaluative tools should be in place to measure the extent to which students understand the material and to what degree they apply this knowledge.

Overweight and Obesity in Children and Adolescents

The volume of literature detailing the national increases in childhood and adolescent obesity is alarming (Davis et al., 2007; Dietz, 2004; Flynn et al., 2005). Obesity is such a threat that if not reversed, experts speculate that US children may for the first time in our nations history have a shorter lifespan than that of their parents (Davis, Gance-Cleveland, Hassink, Johnson., Paradis & Resnicow, 2007). “Childhood obesity has more than doubled over the past 20 years, and it represents the most prevalent nutritional disease among youth in the United States” (Lowry, Wechsler, Galuska, Fulton & Kann, 2002, p. 1). Given this, the necessity for supporting America’s youth in making healthy decisions related to nutritional intake and physical activity has never been more evident. Many contributing factors for increasing overweight and obesity are cited in the literature including, unconscious and uninformed nutritional choices, poor eating habits, inadequate intake of fruits and vegetables, inadequate amounts of dairy products, high calorie snacks and decreased physical activity (Davis et al., 2007; Dietz, 2004; Flynn et al., 2005). If current trends in overweight and obesity are not reversed these conditions are predicted to lead to an unprecedented number of preventable chronic diseases (Kohn & Booth, 2003).

School Based Intervention Programs and Behavior Change

Previous school based intervention programs for overweight and obesity were analyzed with respect to the challenges the programs faced and the rates of success. The summary of this analysis identified 5 phases of effective school based intervention programs including; preparation, validation, decision making, translation followed by application and evaluation. It was noted that health educational intervention programs

designed for children have traditionally relied heavily on Social Cognitive Theory (SCT) in their methodology (Cole, Waldrop, D'Auria & Garner, 2006).

SCT is based on observational learning and modeling and highlights the importance of social and/or peer acceptability on human behavior (Bandura, 1986). The literature reviewed cited eight school-based childhood overweight intervention programs that relied heavily on the influencing power of the children's social setting to aid in the implementation of the identified interventions. "SCT emphasizes the critical importance of social contexts on the behavior of children", the authors later distinguished that "as values and standards of health change, the school is an ideal setting for promotion of new health behaviors (Cole et al., 2006, pp. 175-176). SCT is recognized repeatedly in the literature as an effective means to achieve modeling of desired behavior in children, demonstration and rehearsal of behaviors, incorporation of self-monitoring, self-reflection and self-evaluation (Cole et al.). The value of SCT in school-based childhood overweight interventional programs was further emphasized by Cole et al. (2006) stating:

Successful interventions for childhood overweight should consider the principles of SCT. Modeling is one of the primary techniques that should be encouraged when designing interventions for children in the school setting. Demonstration of and the opportunity to rehearse behaviors that improve overweight in children by teachers, peers, and students themselves should be highlighted. Self-monitoring is an SCT technique that incorporates self-reflection and self-evaluation of behaviors.

Additionally, the use of contracts with goals and rewards can regulate and reinforce newly minted behaviors and improve self-efficacy. Self-efficacy

or the belief in one's ability to achieve a goal or be successful is an important component of SCT and behavioral change. More importantly, the SCT stresses assessment of the cognitive skills of children and the need to provide children with the opportunity to rehearse, organize, and recall new behaviors. Many examples of ways to use SCT in designing interventions in school-based programs are provided and can be used by those specializing in the well-being of children to improve their future health. (p. 176)

It is clear that the literature supports the value of SCT in both the design and implementation of successful health interventions with children. Given its past success, the partners plan to incorporate SCT into the design and implementation phases of the proposed project.

Developmental Stage of the Targeted Audience

Understanding and considering the developmental stage of the targeted audience will be important to the overall success of this proposal. It will also play a role in the design of class room activities and planned curriculum. The literature clearly defines children between the ages of 11-14 as having several concrete developmental characteristics. Three of these characteristics seemed particularly pervasive and pertinent to consider in the design and implementation phase of the proposed project including body image, increasing independence from caregivers, and a tendency to focus on the here and now with little regard for the future (Mandleco, 2004).

Given the literature, it is likely that all of the students, regardless of body size, will be concerned with their own changing body image. This is considered typical of this age group and goes hand in hand with the physical changes that accompany puberty (Mandleco, 2004). It will be important for the involved health professionals, faculty and parents to be aware that the majority of students in this age range will have varying degrees of concern with respect to their body image and feel varying levels of unease related to their changing appearance (Dixon & Stein, 2006). However, since the project will directly address the topic of overweight and obesity it will be important to speak to this issue with sensitivity so as not to interfere with the student's ability to openly discuss the topic. It will also be important to ensure that students are given the tools and information to distinguish and recognize the difference between normal body development and an unhealthy weight.

Through the facilitation of these discussion and activities, partners will help bring about positive adaptation at both the individual and group level. This intervention is just one example of how Callista Roy's adaptation model may be intertwined into the strategic plan for this project. Involved nursing partners will have many opportunities as the proposal develops to consider how other aspects of the adaptive model can be utilized in goal setting and evaluation phases of the project.

The second developmental characteristic to consider in the target population is that they are likely to demonstrate a growing interest in the thoughts and ideas of their peer group, while becoming more independent from their

parents (Mandleco, 2004). The proposed project will take advantage of the students increasing independence and sense of autonomy by pointing out their growing level of responsibility in their own care and the inclusion of their thoughts and ideas in the planned activities and curriculum. This model acknowledges the ideas of the student's while recognizing and fostering their abilities to partner with their adult advocates. This is consistent with Roy's (2008) adaptation model in that the student's roles and positions within the partnership will likely hold new expectations for many of them. This will require adaptation by the students and foster increasing maturity as they adjust to being equal partners with their teachers, parents.

The third developmental characteristic considered in this proposal is that the targeted audience is likely to demonstrate a high interest in present day activities, with restricted thoughts or concerns related to the future (Dixon & Stein, 2006). This will be an important developmental milestone for partners to have considered prior to detailing long term risks associated with overweight and obesity with the targeted population. Seeking input on how best to approach futuristic problems directly from student partners is likely to ensure a successful approach to this characteristic. This step will be crucial in order that long term risks associated with overweight and obesity are not lost on the audience.

Community Based Participatory Research

The literature provides multiple examples of the ever increasing use of community-based participatory research (CBPR) methodology in the conduct of research on issues of concern to the community. These research efforts typically pair the

community with academic centers and other community agencies who share their interest in public health (Shore, Wong, Seifer, Grignon & Gamble, 2008). CBPR methodology “represents a shift from regarding individual community members as research subjects to engaging community members and the organizations that represent them at research partners” (Shore et al., 2008, p. 1). The resulting partnerships represent a clear divergence from the traditional clinical research model in which equitable partnerships between the researcher and the subject did not exist.

A more complete definition of CBPR includes:

A collaborative, partnership approach to research that equitably involves, for example, community members, organizational representatives, and researchers in all aspects of the research process. Partners contribute their expertise and share responsibilities and ownership to increase understanding of a given phenomenon, and incorporate the knowledge gained with action to enhance the health and well-being of the community members. (Israel et al., 2005, p. 1463)

Israel et al. go on to further outline the following 9 overarching principles of CBPR;

1. Recognition of community as a unit of identity.
2. Builds on strengths and resources of the community.
3. Facilitative of a collaborative equitable partnership in all phases of research.
4. Involves power sharing process that attends to social inequalities.
5. Fosters co-learning and capacity building among partners.
6. Achieves balance between knowledge acquisition and intervention for the mutual benefit of all partners.
7. Focuses on local relevance of public health problems

8. Disseminates results first to partners involving partners in the dissemination process.
9. Involves a long term process and commitment to sustainability. (p. 1465)

The proposed pilot project will utilize the CBPR principles outlined in the literature as the guiding principles for this and future projects. CBPR partnerships collectively bring in the perspectives and skills of the involved partners and by employing these principles in the proposed project, effective interactions between health professionals, educators, students and parents will help to define, plan, and implement interventions responsive to the nutritional health literacy of the students. Principles from Roy's adaptation model will also influence the partnership as the partners establish a group identity, defined roles and shared goals (2008). These will be important milestones that will ultimately contribute to the success of this project.

In summary, collaborating partners will be poised to develop a multifaceted approach having given consideration to the literature from the preceding multi-disciplinary authors.

Chapter 3

Proposal Development

Poor dietary patterns and physical inactivity are listed among the most serious health problems faced by today's youth (Marx, Hudson, Deal, Pateman & Middleton 2007). In an attempt to address this mounting problem a proposed pilot study partnering health professionals, middle school faculty, students and parents as a unified team addressing childhood obesity. Input from students and parents will be attained through focus groups conducted by a trained focus group moderator. These activities are slated to occur in April of 2009 and the information acquired during these sessions will help to shape the future direction of the project. Although anticipated next steps will be jointly determined by the partners, it is realistic to speculate that many of the following steps are likely to be proposed and supported by the partners;

- Meet with key faculty members.
- Meet with key student body member.
- Identify funding for planned activities.
- Develop educational methods and educational materials.
- Administer a pre-test to assess baseline knowledge of educational content.
- Implement educational activities.
- Administer a post-test to assess baseline knowledge of educational content.
- Analyze results and evaluate process with involved stakeholders.
- Disseminate overall results to student body.
- Jointly pursue possible avenues for publication.

The research design and evaluation will adhere to CBPR methodology by involving project partners in all phases of the research process, including data collection, analysis, and interpretation. This approach will allow partners the ability to benefit from each others strengths while working in unison to advance the overall health of their community. The overall health goals of this proposal fall under two broad categories:

- a) Development of a modified, 6th grade level academic curriculum that promotes nutritional health literacy and physical activity.
- b) Establishment of daily activities that allow the targeted population repeated practice in conscious decisions that promote overall wellness.

The partners hypothesize that the targeted population will be positioned to implement a change in behavior if a foundation that clearly outlines the key contributors to childhood overweight and obesity is first provided through appropriate educational materials. In doing so, students will have access to the information and tools needed to incorporate changes for improved health into the framework of their everyday lives (Bandura, 1986). Additionally, principles of Social Cognitive Theory including observational learning and modeling will be utilized as these strategies have been shown to positively influence children's behavior through the child's social context (Cole, Waldrop, D'Auria & Garner, 2006). Once this foundational base has been established, the partners hypothesize that skill based activities woven into the daily school routine will serve to reinforce the importance of informed, healthy and conscious decisions related to nutritional choices and physical activity choices. This design empowers the targeted population to responsibly manage aspects of their overall health and is likely to lead to positive life long habits. Collectively we predict that the steps outlined in this

proposal will serve as an effective collaborative educational model that both prevents and helps to reverse childhood overweight and obesity.

Partners were further convinced that the proposed inclusive method of education will result in positive outcomes following a recent community event arranged by the partnering middle school health teachers and health professionals. We jointly staffed a nutrition booth with 5 separate nutritional stations. The information was intended to be attention grabbing and to provide quick insight into unhealthy nutritional choices that are made daily by many. At one station, students and parents were asked to measure out how many teaspoons of sugar they thought were in a 20 oz. bottle of pop. Most measured between 5-10 teaspoons as their guess and were surprised to find that the answer was 17 teaspoons of sugar. This presented an opportunity to discuss reducing soda intake and the consideration of bottled water or smaller soda portions.

Another station required that students and parents guess the amount of saturated fat in a typical fast food meal. Grams of fat were represented by tubes of fat. The audience was repeatedly surprised to find that the meal contained 82 grams of fat, with 37 grams of saturated fats. This station facilitated discussions on healthy alternate nutritional selections when eating out and the reservation of fast food meals to an occasional event rather than a dietary mainstay.

Overview of the Study setting and Partnering Middle School

The partnering middle school staff consists of licensed teachers, a variety of educational assistants, support staff and parent volunteers. The Health Education program at the partnering middle school is in its first year of a newly designed three year health program to span over the students 6th, 7th and 8th grade years. This program

currently balances both classroom theory based content along with physical educational activities on alternating days. This pilot study will focus on students in the 6th, 7th and 8th grade classes. All parents and middle school students will be given the opportunity to participate in the project along with the involved teachers and clinicians. No person will be excluded because of race, ethnicity or gender. The following demographic data outlined as follows in table 1, was provided by the partnering middle school.

Table 1: Partnering Middle-School Demographics (provided by partnering school)

Partnering Middle School Demographics	Grade 6	Grade 7	Grade 8	Total MS Pop	Total % MS Pop	% Grade 6	% Grade 7	% Grade 8
Number of Students	150	138	151	439		100%	100%	100%
Gender								
Males	66	74	66	206	47%	44%	54%	44%
Females	84	64	85	233	53%	56%	46%	56%
Language								
English	150	135	151	436	99%	100%	98%	100%
Spanish		2		2	0%		1%	
Cambodian/Khmer		1		1	0%		1%	
Ethnic Background								
White	141	126	145	412	94%	94%	91%	96%
Hispanic	4	2	1	7	2%	3%	1%	1%
Asian/Pacific Islander	1	3	0	4	1%	1%	2%	0%
Black	4	4	3	11	3%	3%	3%	2%
American Indian	0	3	2	5	1%	0%	2%	1%
Special Education								
Yes	14	11	9	34	8%	9%	8%	6%
No	136	127	142	405	92%	91%	92%	94%
Free and Reduced								
Yes	31	31	27	89	20%	21%	22%	18%
No	119	107	124	350	80%	79%	78%	82%

Abbreviation Codes:

MS = Middle School

Pop = Population

Proposed activities

Middle school learners are likely to benefit from improved health education promotional materials and improved health literacy. The partnering school resides in Olmstead County. The involved counties healthcare community places a heavy emphasis's on health education and promotion and the majority of the middle school students are likely to receive care from institutions which already have well-built educational services in place. Although this infrastructure is in place, it is likely that the available materials are unsuitable for use within the targeted audience. A recent study designed to test the readability of pediatric patient educational materials demonstrated that upwards of 92% of the patient educational materials reviewed were written above the recommended sixth-grade reading level (Amini, Casamassimo, Lin & Hayes, 2007). This was not an isolated finding. Another recent study, which analyzed online pediatric patient education materials, found only 2% of the online articles reviewed were within the recommended sixth grade or lower readability level (Sudarudeen & Sabharwal, 2008). The remaining 98 % of pediatric patient education materials reviewed on line were written at an average readability level between 8th and 9th grade levels (Sudarudeen & Sabharwal, 2008). Even more troubling was that the readability level of pediatric patient educational materials online had actually increased rather than decreased between 2001 and 2008. These study findings clearly demonstrate that the CBPR partners will need to remain committed to ensuring that all educational materials considered or developed for use in this proposed study have been written at the recommended 6th grade reading level.

To facilitate the development of effective health intervention strategies for middle school learners, strong partnership will need to be established between health care practitioners, partnering faculty, parents and students (Israel et al., 2005). Relationships take time to build and time to maintain. The literature advises newly formed partnerships to rely upon trust that is already present (Seifer, 2007). In light of this, it's anticipated that this project will benefit from the previously developed trust of the existing parent/teacher and parent/child relationships. In order to establish the broader collaborative relationships, health professionals, students, parents and teachers will meet regularly at a mutually agreed time and location to make certain that the time to maintain trusting working relationships is built-in to the study timeline. The partners will work together to develop and edit educational content that is illustrative of healthy lifestyles and choices and the drafting and editing process will provide many opportunities for the team to respectfully work through differing opinions, as well as time to adjust to varying styles of communication. Final approval of the content will require approval and sign off from all partners involved in the development. Students and parents ideas and opinions will be equal to that of the health professionals and teachers. Giving consideration to Roy's (2008) role function mode of relating persons, discussion and encouragement will likely be needed in the early stages of meetings to ensure that students and parents are comfortable giving feedback. They will have typically related to health professionals and teachers in subordinate or advisory capacities and the new status of "partner" will require that students and teachers adapt to their new roles. The partnership will also require that health professionals and teachers relinquish their previous positions of

authority and ensure that they are inclusive, rather than prescriptive, in both their behavior and in their communication.

It will be vital that the health care community have an understanding of the middle school students and middle school educational methods in order to effectively aid in engaging the students in health education or research activities.

In addition to engaging the middle school students in the education process and building on learners' strengths, we will also teach overarching health promotion concepts and enhance students' skills by providing both content-based and skill-based instruction. Analysis of past school based intervention programs for childhood and adolescent obesity show that prevention should target both physical activity and nutritional literacy (Sharma, 2006). Since middle school teachers are adept at working with their students to solve problems and to enhance a variety of basic skills, by partnering together we will employ these proven teaching methods to implement curriculum that is appropriate for our targeted audience.

This proposed pilot couples education related to healthy eating habits and physical activity, with actual implementation and use of conscious decision making skills while capitalizing on the unique strengths of each of the affiliated partners. The partners are charged with creating a curriculum that reduces barriers to nutritional health literacy and the benefits of exercise and healthy choices. In order to accomplish this goal it will be important for all partners to understand of strengths and limitations that each partner brings. The team must constantly be considering opportunities for collaboration while avoiding the establishment of unrealistic expectations if the assigned roles are outside the expertise of the involved team members (Israel, Schulz, Parker & Becker, 2001). Roy's

Adaptation Model (2008) would argue that members may be able to adapt and develop new skills in order to fulfill the expectations of the assigned role. This may be the case in many situations, however some activities within the proposed project may be restricted to licensure or degree and in these instances the partners will need to establish role clarity in order to clarify the expectations.

The collaboration will be based on a Community-Based Participatory Research (CBPR) model which will allow the four groups to come together as equal partners. The overall objective of this proposal is to improve nutritional health literacy with the end result of increasing middle school student confidence in the participation in every day decisions related to nutritional and physical activity choices. The proposal is designed to achieve these aims by conducting educational activities during school, and by having them critique and consider the decisions they have control of that influence their short term and long term health. In addition, students will be encouraged to consider decisions they make while not in school and to assess the impact that their decisions have on their state of wellness.

Proposed Methodology

Both quantitative and qualitative data will be used to assess the progress towards the project goals. Data collection methods are likely to include pre-tests, surveys, focus groups post-tests, school lunch food diaries, and physical activity diaries. These tools will be developed in a collaborative fashion with input from all partners. It is also likely that the collaborative partners will opt to conduct focus groups with trained moderators to obtain detailed information about factors that influence the students' decisions regarding dietary choices and physical activity choices both pre and post educational

interventions. All students enrolled in the 6th, 7th and 8th grade partnering middle school will be participants. This includes 150 6th graders of which 84 are female and 66 are male; 138 7th graders of which 64 are female and 74 are male; and 151 8th graders of which 85 are female and 66 are male. This is a convenience sample inclusive of the entire middle school student body. All study activities will be intertwined with the theory portion of the health class and/or the activities associated with the physical education portion of the class.

The overall goal is to test whether a differing approach in the provision of information and action points that influence overweight and obesity are more effective in reducing these health risks than the existing curriculum. As partners, the students can opt to be active in the design and implementation of the new curriculum and associated activities, however completion of the coursework is not optional, but rather an academic requirement at each grade level.

Proposal Timeline

It is projected that that proposed study will be completed over a six months period. Difficulties completing the study in a timely fashion are not anticipated given the pre-existing relationships between the partnering clinical investigator and middle school faculty and administration.

Chapter 4

Evaluation

Ongoing Evaluation of CBPR Process

Active and ongoing evaluation of the CBPR process will occur during all phases of the proposal. Ongoing assessments of the actual CBPR process will be discussed at monthly partnership meetings to ensure compliance with CBPR principles. Partners will be encouraged to address conflict respectfully and members will be asked at each meeting to raise objections if they feel decisions are not being reached by consensus. Ongoing partnership assessment will be openly discussed and reviewed as a routine agenda item at regularly scheduled meetings. Evaluation of target population engagement in the study activities and participation in the skill based practice activities will be assessed on a routine basis.

Upon completion of the study, the partners will jointly assess the extent to which this project effectively achieved sustainable change in the targeted population. For example – change in decision making and personal knowledge or skills gained.

Implications for advanced nursing practice

Addressing health literacy issues through CBPR methodology is likely to lead to improved health for large subsets of the population. The utilization of CBPR in conjunction with Callista Roy's Adaptation Model is likely to be an effective strategy in bringing about change in groups that have shared goals and a collective will to mutually change the overall health of the targeted population. As the benefits of this combined methodology become more recognized, and as our community partnerships grow in number, it is likely that Medical institutions in Olmstead County will experience an

increasing need to educate and train additional advanced practiced nurses in the principles of CBPR. This collaborative approach to research is also noted in the literature as an effective means through which communities and their academic partners can address health inequities and eliminate health disparities (Israel et al., 2005).

Chapter 5

Discussion and Reflections

Proposal Challenges and Limitations

While obesity is on one extreme end of the nutritional spectrum, anorexia nervosa is on the extreme opposite end. “Anorexia nervosa is a behavioral disorder characterized by ego-syntonic self-starvation, denial of illness and ambivalence towards treatment.” (Guarda, 2008, p. 113). The normal angst that accompanies pubescent body changes in some cases can become distorted and may ultimately contribute to eating disorders in the involved population (Dixon & Stein, 2006). Although the larger percent of eating disorders are diagnosed in girls, a growing numbers of males are being diagnosed with this problem as well (Dixon & Stein, 2006). Eating disorders are considered psychological illnesses with physical symptoms that are a direct result of limited food intake, self induced vomiting, or excessive laxative use (Mandleco, 2004). Given this, anorexia will be considered and discussed within the context of wellness; but it should be clear that this program is not designed to manage the symptoms of this serious medical condition. It is likely that the partners will choose to approach Anorexia in the same capacity that diabetes and hypertension will be addressed within this proposal.

Another anticipated challenge for this proposal will be maintaining student and parent involvement throughout the project. Participation in this project will not impose any additional burden than that of the regular health class commitment; however it should be noted that the students will have other coursework and social activities that compete for their time and attention. Parents are likely to have many competing commitments

and with respect to this we will intentionally be conscious not to overburden them with responsibility.

An additional limitation recognized in the literature is that CBPR in its purest form includes all partners in all phases of the research process; however in practice this seldom occurs (Seifer & Sgambelluri, 2008). In this proposal, it is likely that students and parents may demonstrate a higher level of interest and participation in the development and implementation phases of the proposal, and may have less interest and participation in the data analysis and evaluation phase. If this does indeed play out it will be acceptable so long as all members voluntarily opt not to participate in certain phases and so long as other partners do not feel as if they are bearing an unfair burden of work in the more tedious phases of the proposal. We will manage this potential limitation by jointly making decisions on involvement in the various phases of the proposal through open and honest communication. Regularly scheduled meetings for all members will allow for ongoing communication and each meeting will have a designated agenda item reserved to address any developing apprehensions, tensions or concerns.

Lastly, a limitation to CBPR projects is that they can be hard to defend or justify to colleagues accustomed to traditional research methodology. This can complicate both the peer review process and can also negatively influence the funding and approval process if reviewers are unfamiliar with the methodology. Traditional peer reviewers are often critical of the slow progress or lack of a “concrete” plan for their consideration. Consequently, it is important to emphasize to those not familiar with the process that unlike traditional research, the design, implementation, analysis and publication of the study results is a cooperative process among equal partners.

With this specific proposal addressing childhood and adolescent overweight and obesity, it has been difficult to describe the final study design and activities with any degree of accuracy. Through speculation, the involved health and educational partners have developed a high level view of the proposal that will be shared as incoming student and parent partners come on board, but they may reject parts of the overall design. The proposal will continue to change to incorporate the collective suggestions and ideas of the larger group. Newcomers to this type of research should be advised if a CBPR proposal does not evolve with the addition of new partners then the process has failed and is really just traditional research under the guise of CBPR. Partners need to remain committed to the guiding principles of CBPR or they risk losing the trust and respect of their community partners and community members.

Final Reflections

In summary, one common theme that runs throughout this proposal is the need for strong collaborative partnerships that capitalize on the strengths of health care professionals, teachers, parents and students as we jointly address a health concern that faces our youth. Through these partnerships, I truly believe, we will begin to improve the overall wellness of the targeted student population and reduce overweight and obesity through improved nutritional literacy and with the implementation of healthier choices. Understanding and maximizing the strengths of health professionals, middle school faculty, students and their parents will be a key preliminary step in addressing this epidemic.

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