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# Journey from Self-Efficacy to Empowerment

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**Abstract** - Vulnerable populations face barriers to care that affect health status. This paper provides a theoretical and empirical literature review of self-efficacy and its significance to nursing and the health care community. Theories that guide self-efficacy are briefly identified along with relevant propositions and relationships. Various studies are reviewed for theoretical basis, level of evidence measures, methods, findings and limitations. Implications for future studies and application to practice are evaluated and presented. Specific knowledge gaps are identified. Due to the lack of information on the relationship of self-efficacy and empowerment specific to vulnerable populations an avenue for future study is suggested.

**Keywords** - Self-Efficacy, Empowerment, Vulnerable Populations

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## 1. Introduction

Health disparities are defined by Healthy People 2020 as specific differences in health within the context of social, economic, and/or environmental disadvantage (US Department of Health and Human Services, 2010). Ethnic and racial identity, gender, physical and mental ability and place of residence all influence treatments and overall health (Chitty & Black, 2011). It is important to understand the changing face of the U. S. population in order to improve understanding of the perspective of health disparities in the United States. More than one million persons, approximately 33 percent of the U. S. population, distinguished themselves as an ethnic or racial minority in 2008. Groups of persons who have methodically faced larger obstacles to health care based on inclusion into certain 'at risk' populations previously identified are adversely affected by health disparities (U.S. Department of Health and Human Services, 2010).

The West Cecil Health Center (WCHC) began operating as a Federally Qualified Health Center in January 2008, in Conowingo, Maryland to address health disparities and serve local communities. The WCHC service area is located in a shortage area designated as a medically underserved area and a health profession shortage area within Cecil County. The majority of available health care providers within the service area do not accept new Medicaid patients, have a sliding fee scale, offer discounts, and care for obstetrics, gynecology, mental health or pediatric patients. Many residents travel 20 miles or more to the nearest hospital (Rajkowski, 2010).

The people of Conowingo meet the criteria for vulnerable populations, defined as a social ensemble with an increased risk or disposition to unfavorable health outcomes (Flaskerud & Winslow, 1998). The health disparity between residents of

Conowingo, MD and the general population in Maryland is demonstrated by the fact that there are 3,103 people for every one physician in the service area compared to the state-wide statistic of 382 persons for every one physician. There is a shortage of primary health care providers as well as a shortage of mental and dental health providers in the service area. There were 5,877 individuals living below 200% of poverty in 2000 (19.43% of total) and the obesity rate among adults in Cecil County is 30% compared to the Maryland rate of 26.3%. County Health Rankings place Cecil County 20th among 24 counties in Maryland for health behaviors comprised of adult smoking, adult obesity, excessive drinking, motor vehicle crash rate, sexually transmitted infections and teen birth rate. Cecil County ranked 23<sup>rd</sup> for clinical care which incorporates uninsured adults, number of primary care physicians, preventable hospital stays, diabetic screening and mammography screening (www.countyhealthrankings.org, 2011; Rajkowski, 2010).

Addressing health disparities from the perspective of those living within Conowingo is important and includes exploring beliefs regarding self and overall perception of well-being. According to Taber's Cyclopedic Medical Dictionary self-efficacy is "An aspect of self-perception... that pertains to one's belief in his or her ability to perform a task or behavior" (Venes, 2009, p2096). Alternatively stated, self-efficacy is the introspective conviction that one has the aptitude to take action to affect one's health. If persons believe they have the ability to effectively act to achieve desired outcomes, persons are more likely to engage in the behavior (Resnick, 2008).

A person's self-efficacy will in part establish which activities an individual will attempt and activities an individual will circumvent. Evaluation of self-efficacy can identify persons at risk for particular unhealthy behaviors and im-

proving self-efficacy can be useful in promoting and sustaining modifications (Polifroni & Welch, 1999). Self-efficacy is relevant to health disparities because when persons, including underserved populations, believe they can achieve success, they are more likely to attempt the behavior. The ultimate goal in health disparities is to reduce the gaps in care to sustain better overall health outcomes.

The Health Belief Model and the theory of self-efficacy aid in explaining the concept of self-efficacy. The health belief model focuses on the individual's perceptions and likelihood of taking action. Initially the Health Belief Model did not address self-efficacy but the concept was later added and defined as "confidence in one's ability to take action" (Rosenstock, Strecher, & Becker, 1988). Through the guidance of Bandura (1977), a social scientist, the theory of self-efficacy was born from social cognitive theory and conceptualizes the interface between person-behavior-environment.

Self-efficacy theory provides a clear explanation of a person's belief of their capacity to arrange and carry-out a course of action. Central to the concept of self-efficacy is the assumption that individuals can have influence over their actions. An antecedent to self-efficacy is the chance for self-evaluation defined as the ability to measure individual results to particular evaluation criteria. The person uses their own capability and creates a self-efficacy projection (Resnick, 2008).

A thorough literature review is imperative to highlight previous findings that are pertinent to the study of self-efficacy and vulnerable populations. Evaluation of the concept of self-efficacy and existing theory-linked research provides a summary for theoretical foundations of specific aspects of health disparities. In further development of the concept of self-efficacy, theoretical literature review puts forward models that detail relationships among previously studied variables and commonly offer new variables and relationships to examine (Rodgers & Knafl, 2000). The purpose of this paper is to offer a review of theoretical and empirical literature relating to self-efficacy, highlight theories that clarify the concept of self-efficacy and to discuss and refine empowerment as a second concept that is a related consequence of self-efficacy.

Theoretical reviews help characterize and clarify self-efficacy. The existing self-efficacy literature encompasses a variety of disciplines and practice settings as self-efficacy can apply in realms beyond nursing and health related situations. The health belief model focuses on the individual's perceptions and likelihood of taking action. Initially the Health Belief Model did not address self-efficacy but the concept was later added and defined as "confidence in one's ability to take action" (University of Twente, 2010 p.2).

Buglar, White, & Robinson (2010) describe self-efficacy in the context of dental patients' brushing and flossing through the lens of the health belief model. The authors' description of self-efficacy is a person's ability to carry out an action. Oral self-care is a health behavior that can be predicted

by looking at self-efficacy. The authors postulate that by making information available regarding dental treatments and encouraging person-centered education self-efficacy can be augmented. Influences on self-efficacy include pre-existing values, beliefs, attitudes and culture.

## 2. Application of Health Belief Model and Self Efficacy Theory in Practice

There are practical recommendations for busy psychiatrist and other health care providers. Allowing well established theories to guide practice allows for better treatment adherence and better compliance in general. The HBM and Self-Efficacy Theory have been used as a guide to investigate deterrents of social support seeking among those with eating disorders. The rationale is that because persons with eating disorders have a high mortality rate among those with psychiatric disorders, knowing what barriers prevent people from seeking and/or accessing care may improve management and outcomes of the disease.

Akey, Rintamaki & Kane (2013) used qualitative methods to analyze interviews of 34 men and women with various, previously diagnosed eating disorders. The analysis was framed within the constructs of the HBM: perceived susceptibility to a health threat, perceived severity of the health threat, perceived benefit of health behaviors, perceived self-efficacy of protective behaviors and perceived barriers to performing protective behaviors. Themes that surfaced included avoidant strategies persons implemented to shield themselves from the reality of their illness, individuals not perceiving their disease grave enough to seek help and doubt about the quality and effectiveness of support from others. For a psychiatrist or other health care provider, this information can be used early in the relationship to guide the patient to appropriate resources or with office-specific self-reported screening tools designed to save time and improve patient outcomes.

In studying the effects of an osteoporosis educational intervention in Puerto Rican women, Vazquez, Tejada, Colin and Matos (2009) use the health belief model as a guide with a self-efficacy component. The authors define the concept of self-efficacy as the readiness to act to prevent disease. Having a basic understanding, in this case of osteoporosis, can assist in comprehending the benefits of taking action. In contrast, a solid understanding of self-efficacy can pinpoint behaviors that act as barriers to osteoporosis prevention because the person chooses not to engage in the preventative behavior. An antecedent to self-efficacy is the women recognizing the seriousness of a disease and identifying their susceptibility to getting the disease. Consequences of self-efficacy include a person taking action to ultimately prevent disease, termed empowerment in later articles.

In a sociology context, Dominguez & Arford (2010) present self-efficacy as the aptitude to set-goals and accomplish them. The authors offer interventions based on a litera-

ture review detailing successful programs that in part exemplify self-efficacy. Self-efficacy follows the recognition of skills and interventions needed to achieve success. The authors specify perceived self-efficacy as an individual's belief regarding their ability to influence their lives, including health status. An outcome of self-efficacy is empowering the individual as they perform a specific behavior such as quitting smoking or coping with depression.

Through the guidance of Bandura (1977), a social scientist, the theory of self-efficacy was born from social cognitive theory and conceptualizes the interface between person-behavior-environment. The theory provides a clear explanation of self-efficacy as a person's belief of their capacity to arrange and carry-out a course of action. Vital to self-efficacy is the assumption that individuals can have influence over their actions. An antecedent to self-efficacy is the chance for self-evaluation defined as the ability to measure individual results to particular evaluation criteria. This comparison allows the person to ascertain their own capability and create a self-efficacy projection (Resnick, 2008). Self-efficacy was the foundational concept used to explore postnatal depression and other issues in first-time mothers. The theory of self-efficacy was applied to define parental self-efficacy as "the mother's beliefs about their ability to be successful in the parenting role (Leahy-Warren, McCarthy & Corcoran, 2011, p.389). A quantitative correlational design used a five-part questionnaire to collect data. Meaningful relationships were found among functional social support and postnatal depression; informal social support and postnatal depression and with maternal self-efficacy and informal support. The clinical value of this information for busy practices is to be aware of and acknowledge the importance of social support during primary care and specialty, such as psychiatric, visits. It is imperative that providers instruct their offices to initially assess social support with check-in paperwork so that providers can address patient concerns. Providers must find a way to connect their patients to culturally competent, effective social support if it is lacking. Tools to aid the provider and office staff include the Perceived Maternal Paternal Self-Efficacy Scale and the Edinburg Postnatal Depression Scale (Leahy-Warren et al, 2011).

### 3. Antecedents and Consequences

As discussed, the concept of self-efficacy links together specific antecedents and consequences in relationship to each other. Culture and attitude are encompassed by social experiences that precede self-efficacy. Confidence from previous experience fosters a feeling of self-efficacy and encourages one to try a new activity. Another way to think of these social experiences is that they are self-reflections on personal performances and may be linked to motivation.

Crucial sources that persons use to judge self-efficacy are mastery experiences/performance accomplishments, vicarious experiences/mastery modeling, pep talks/verbal persuasion and de-arousal/physiological response. Performance

accomplishment correlates to doing well at tasks. When performance accomplishment is high, self efficacy is high. Successes are cumulative and as the individual progresses, he is less discouraged by small setbacks. The net antecedent of self-efficacy is vicarious experience. The experience unfolds as individual watches others perform a task and perceive that they can be successful at the same task, thus increasing self-efficacy. This is more common if the person modeling the successful behavior has the same attributes as the observer (Zulkosky, 2009).

In reality, one can overestimate or underestimate the actual ability to accomplish a task. Encouragement through verbal persuasion can convince another person that they have the capability of being successful and can be termed 'pep talks'. This persuasion has an important effect in boosting self-efficacy because success is more dependent on the effort an individual puts into a task rather than inherent ability. The final antecedents are the physiological cues a person receives, such as apprehension and stress (Zulkosky, 2009). Individuals interpret these responses differently, resulting in varied outcomes. Ultimately, to achieve self-efficacy an individual can perform a previous task successfully, watch someone with whom they can identify doing a task successfully, receive uplifting feedback from an outside source about performing the task or interpret the body's response to determine if the individual will be successful. All or some of these factors are present before self-efficacy is achieved.

Attitudes about self-efficacy will impact the way individuals respond in thought and action. Predictable consequences follow self-efficacy and affect behavior, the effort put forth, thoughts and emotions. One consequence is the actual outcome (or behavior). There is a reciprocal relationship as one successfully performs the desired behavior, self-efficacy becomes stronger and the person judges themselves more likely to succeed in future tasks related to the behavior. The results are somewhat situation specific and can't be applied globally (Zulkosky, 2009;). For example because a person can remember and implement taking their diabetes medicine at the correct time to help minimize disease doesn't mean they will be successful at altering their diet to adhere to diabetic guidelines. This can be a limitation when looking at self-efficacy.

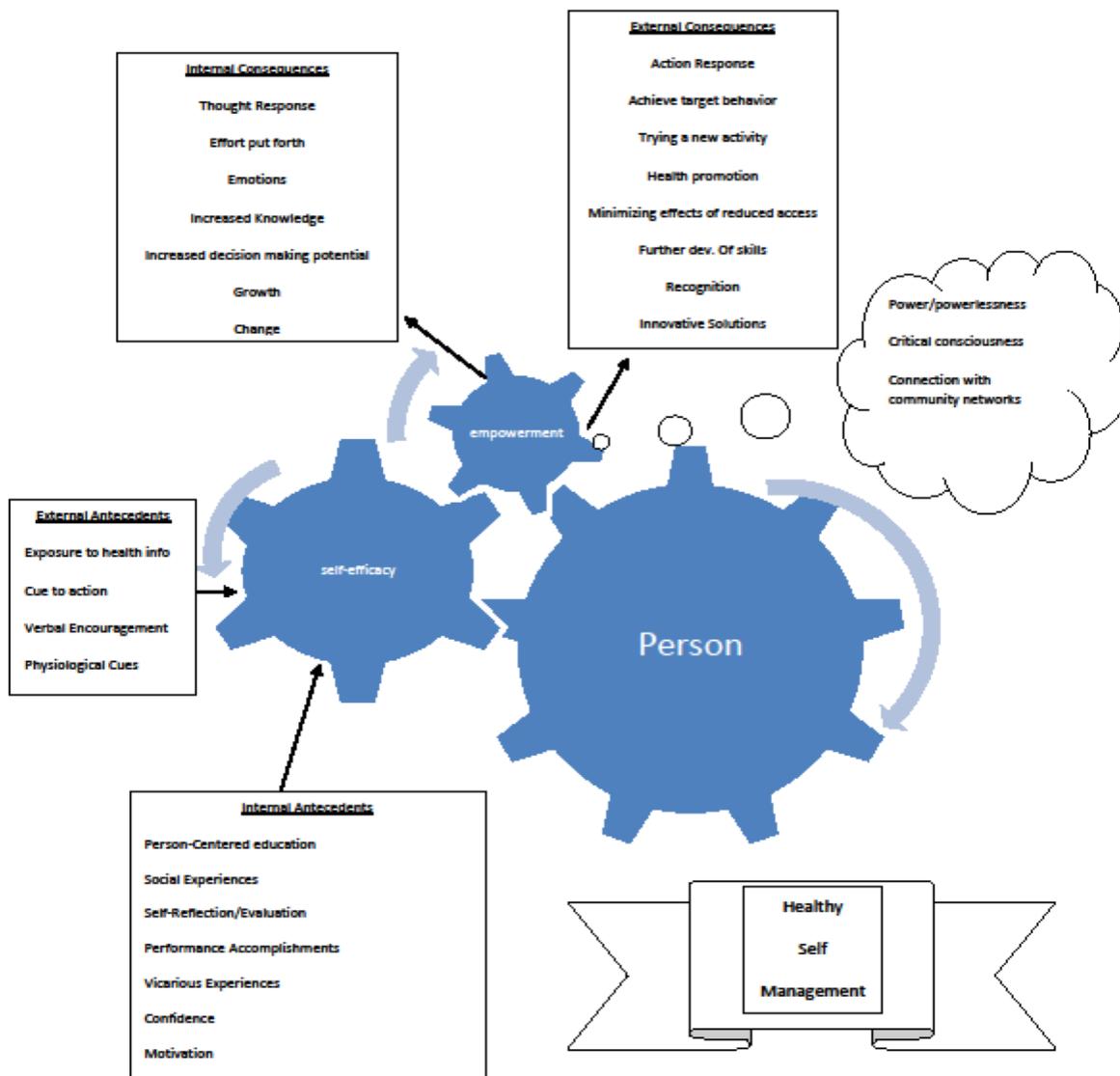
Empowerment is a consequence of achieving self-efficacy and of particular interest to persons working with vulnerable populations to reduce health disparities. Currently, there are multiple definitions of empowerment that are similar but not universal. There are two definitions in the latest edition of Taber's Cyclopedic Medical Dictionary: "Investing power in another person or group by sharing leadership roles, or helping others engage fully in a process. Participating actively and autonomously in policies or events that affect one's health or wellbeing" (Venes, 2009, p.756).

Empowerment can be an individual, community or organization with involvement to change social and political environments. Empowerment, like self-efficacy, crosses traditional boundaries contained among disciplines. In sociology

practice, the empowerment model has three elements. To achieve empowerment one must comprehend power and powerlessness, develop a critical consciousness and connect with community networks that foster positive growth. Empowerment follows self-efficacy and is focused on the recognition and further developments of skills that have been mastered at the individual and community level (Dominguez & Arford, 2010). More clearly stated, self-efficacy produces a higher probability of a specific behavior. Through continued development, refinement and actually doing the behavior, empowerment ensues.

Specific to diabetes education, empowerment is defined as aiding people to discover and use their own skill to regulate

their diabetes in a positive way. There is a common theme in the literature. Empowerment is not patient adherence or compliance but it is the individual acting toward a plan of healthy self-management. In a qualitative study examining cultural barriers to diabetes control structured interviews were used. Empowerment surfaced as a major theme as individuals overcome challenges both intrinsic and extrinsic to self. While participants expressed empowerment they conveyed an ongoing internal struggle to maintain what they had achieved and continue to progress (McCloskey & Flenniken, 2010). This study suggests that empowerment is not a onetime achievement but a lifelong process and cycle of continued learning and hopefully progression.



**Figure 1.** Journey through Self-Efficacy to Empowerment and Healthy Self Management

To clarify the concept, the nurse cannot empower the individual or community. The nurse acts as a facilitator providing information and education to individuals and communities. Empowerment comes as the information is processed and adopted for use by the individual or in the form

of lay workers that arise from within the community to positively affect health status of the defined population. An outcome of successful empowerment at the community level is minimizing the effect of reduced access and health resources specific to vulnerable populations. Often, from the commu-

nity, innovative solutions to promote health care arise that may not have been formulated by an outsider who is not immersed in the lived experience of the community.

Ultimately empowerment is a progression individuals navigate to gain mastery over their own care and lives. The goal of empowerment is persons taking proactive actions to positively influence their lives. Empowerment can be evident at the community or individual level. The result can be personal and community transformation.

In conclusion, there is no one model that encompasses the described relationship between self-efficacy and empowerment. Figure 1. depicts the visual relationships between concepts and warrants further study. Self efficacy is influenced by intrinsic and extrinsic antecedents. Internal antecedents include person-centered education, social experiences, self-reflection/evaluation, performance accomplishments, vicarious experiences, confidence and motivation. External antecedents include exposure to health info, cues to action, verbal encouragement and physiological cues. A strong self-efficacy likely results in empowerment which in return continues to strengthen self-efficacy for current and future events.

Additional antecedents of empowerment are power or powerlessness, critical conclusions and connection with community networks. The results of empowerment can be classified as internal and external as well. Internal consequences include thought response, effort put forth, emotions, increased knowledge, increased decision making potential, growth and change. External consequences on empowerment include action response, achieving a target behavior, trying a new activity, health promotion, minimizing effects of reduced access, further development of skills, recognition and innovative solutions.

Self-efficacy has been addressed in current empirical health literature. (Table1.) Further investigation is needed because few studies connect self-efficacy and empowerment from the individual’s point-of view. For example, in one article, the description of empowerment from the individuals’ perspective is described but the term empowerment is never used. Even fewer articles address self-efficacy in health disparities and vulnerable populations.

Table 1

Reference	Level of Evidence	Measures	Methods	Findings	Limitations	Conclusions
Buglar, White & Robinson (2009)	Descriptive	Likert Scale Questionnaire	Convenience sample n=92 (41 male, 51 female) Average=41.2 yrs From a public dental hosp & private dental clinic. English speaking was required. Participation rate from the eligible=46.8%. Hierarchical multiple regression analysis.	59.6% participants brushed BID 16% flossed QD	77 participants were from an Emergency dental setting, this decreased generalizability. HBM <sup>1</sup> scale with low reliability. Used self-reported vs obj clinical findings.	Limited support for HBM. Threat perception not predictive. In planning interventions, focus on abilities and limiting barriers vs risks to health.
Kasicki (2011)	Case-Study/ Descriptive	CSES <sup>2</sup> Structured education program	N=1 (pilot study)5 specific inclusion criteria. Selected after MD review of medical records. Content analysis of qual data. Repeated measures approach for quant data.	CSES scores sustained increases in the total CSES and each of the 5 subscales and pt expressed SE @ 12 months.	Only 1 participant=can't generalize to all COPD. Also, filled out same questionnaire 6 times	Further studies with different populations are more participants are needed
McCloskey & Fleniken (2010)	Descriptive Study	Structured Interviews	Purposeful sample identified by promotores, n=50 (37 w/ DM, 1 Gest DM, 2 w/ pre-DM, 2 @ risk DM & 8 provided support for family with DM. All "Hispanic" 13=males, 37=female	Themes: cultural barriers, diet, social support, denial, legacy of DM, absence of fatalism, empowerment, self-efficacy	Limited generalizability; study was funded to find successful strategies to overcoming barriers but that may also introduce bias	One of few articles to link SE & Empowerment. Instead of 'adherence', future programs should focus on navigating cultural barriers.
Nayak et al (2010)	Cross-Sectional / Descriptive	44-item survey (w/ RSD <sup>3</sup> )	Mailed survey to 1830 participants age 60+ listed in a registry for studies on mobility & balance. 69.3% Response rate	Prior screening, self-rated health status, sex, hx osteo. Fall within last 5 yrs & smoking status were significantly associated w/ health belief status.	Possible response bias (30% no respond). Volunteers were mostly white, healthy, highly educated & heard of & tested for osteoporosis. ?generalizability. limitations of using surveys,	Previous screening & exposure to osteo education will improve outcomes for future interventions. Need to do further studies with lower socio-economic, less educated populations.

<sup>1</sup> Health Belief Model

<sup>2</sup> COPD Self-Efficacy Scale

<sup>3</sup> Risk Behavior Diagnosis Scale

Nieto-Vazquez et al (2009)	Descriptive study	Pre-test/Post-Test	Convenience (randomized) sample, college age women 51 experimental, 54 control subjects. Dependent variables= OK <sup>4</sup> , OHB <sup>5</sup> , OSE <sup>6</sup> . Translated into Spanish 88% RR	H1 Women who attend osteo ed have higher levels of knowledge than no osteo ed participants, Not Supported: higher self-efficacy with ed intervention	Limited generalizability, Puerto Rican (not Hispanic), ages 18-25. Only 4 wks b/t pre-test 7 post-test All college students, highly educated. . Limited data with use of questionnaires	Should repeat study for longer duration with a wider variety of subjects. Develop & analyze programs aimed at young women to prevent osteo
Wells & Anderson (2011)	Descriptive Study	GSES <sup>7</sup> , PRQ <sup>8</sup> Demographic questionnaire	Non-probability conv. Sample 85 AA ages 20-86, 40 males, 45 females. Dx ESRD & hemodialysis. \$10.00 gift card at completion of study. SPSS for data analysis	50% annual HH income < \$10, 400. Sample mean for GSES= 30.39 (25 midpoint for scale)p=.0001	Small sample size, ? representative of population. ?respondent bias to please researcher	Increased self-efficacy & social support may help participants better cope with their illness. Also, frequent contact with HCP & AA culture known for strong social networks
Wijer et al (2010)	Descriptive pilot study	Pre-test/post-test, Cancer Behavior Inventory. Stanford Self-efficacy scale.	N=40 recruited from Breast CA Survivorship Program. Convenience sampling. Eligible if dx breast CA, outpt @ Princess Margaret Hosp, iterate in English, over 18 yrs-old. Pre-questionnaires, 1 hr reflective interview	75% b/t 41-60 yrs, 45% college ed, 64% Annual HH income > \$60,000/yr. Majority of participants rated SC <sup>9</sup> ifo as 'very useful'. No consensus on best time to provide info. Non-significant increase in SSES	Small pilot study, only intervention was SC, short time frame pre-post tests. 3 different HCP administered SC	Additional research needed to evaluate model and collaboration with other interventions. Include more participants & other cancer dx to increase generalizability

<sup>4</sup> Osteoporosis Knowledge

<sup>5</sup> Osteoporosis Health Beliefs

<sup>6</sup> Osteoporosis Self-Efficacy

<sup>7</sup> General Self-Efficacy Scale

<sup>8</sup> Personal Resource Questionnaire

<sup>9</sup> Survivorship Consult

Search strategies were diverse and all-encompassing. Key words in library database searches include self-efficacy and Health Belief Model, Theory of Self-Efficacy, health self-efficacy, self-efficacy and vulnerable populations, self-efficacy and health disparities and empowerment. All databases were accessed through The University of Maryland library and consist of CINAHL, Medline, SocIndex with Full Text and Psych & Behavior Science database. Reference lists of pertinent articles were scanned for appropriate studies. Only empirical articles written after 2005 and in English were considered. Initially, 224 possible articles were located. From the initial articles, 127 were removed. Of the remaining 97, 32 were not from the individual's point of view, 1 was a concept analysis, 3 were discussion papers and 49 weren't applicable. Of the remaining 12 articles, 2 were repetitive, 2 were literature reviews, and 1 had no empirical identifiers. Of the remaining 7 articles only 3 addressed empowerment as a consequence of self-efficacy. All 3 of the final articles were selected for review even though one article doesn't specifically name empowerment as a term but the definition and idea are contained in the paper.

McCloskey & Flenniken (2010) describe cultural barriers to effective diabetes management. The focus population is Southwestern New Mexico Hispanics. The article provides descriptive research and explores the roles of self-efficacy and

empowerment in diabetes management and education in a minority population. The authors identify social cognitive theory/theory of self-efficacy as the study guide. Self-efficacy and empowerment are both presented as antecedents to effective diabetes intervention programs.

The study tape recorded and transcribed focused interviews of participants. The interviews were coded and analyzed for overarching themes, configurations and tendencies. The sample consisted of 50 Hispanic participants involved in La Vida (Lifestyle and Values Impact Diabetes Awareness program) that had diabetes or were directly or indirectly affected by diabetes. Men comprised 13 of respondents and there were 37 female respondents. Findings indicated a strong relationship between traditional Hispanic culture and behaviors and attitudes toward diabetes. For example, a traditional Hispanic diet, social support and denial about having diabetes are rooted in Hispanic culture. Family history of diabetes and its effects were thought to increase knowledge and awareness of diabetes. Specific to empowerment one woman stated, "So far as my outlook with diabetes, I feel that I'm the only one that can manage it to the best, and if I do, I can lead even a healthier life than people who aren't diabetic" (McCloskey & Flenniken, 2010, p. 113).

For self-efficacy, subjects were asked three questions in accordance with behavioral change theory. In asked about

confidence to accomplish goals related to diabetes care, 79% (34 of 43) were positive they could reach their goals. The participants were asked in relation to diabetes control if specific goals had been identified. Ninety-one percent (41 of 45) answered positively that goals had been set. Participants were asked to predict their health outcome. Positive expectations regarding health were expressed by 86% (38 of 44) of subjects. Findings appear to support self-efficacy and empowerment as antecedents to effective diabetes intervention programs.

There are limitations in McCloskey and Flenniken's (2010) study. Using only Hispanic participants in a well-defined geographic area (New Mexico, USA) limits the generalizability of the findings to other populations. The term Hispanic does not have a standard definition. The authors only focused on diabetes which prevents the reader from assuming information applies to other health promotion activities or disease conditions. A bias may exist for participants to want to please health care provider interviewers by giving the positive answers to structured interview questions. The study was funded to find successful strategies to overcoming barriers which may further influence participants to give the answers they think the interviewer is expecting or wants to hear. Future research should avoid advocating compliance and focus on navigating cultural barriers.

Nieto-Vazquez et al (2009) describe self-efficacy in the context of the health belief model and Purnell Model. The authors used a sample of Puerto-Rican women to implement a randomized trial of an educational intervention for osteoporosis. The study presents three hypotheses. The first hypothesis is that females who are present at a program regarding osteoporosis education will have greater knowledge according to the Osteoporosis Knowledge Test compared with women who don't attend the intervention. The second hypothesis is that women attending the educational program will score more positive health beliefs on the total score of the Osteoporosis Health Belief Scale than their counterparts not attending the intervention. The third hypothesis is that attendees to the osteoporosis educational intervention will have greater self-efficacy as evaluated by the Osteoporosis Self-Efficacy Scale than women who are absent from the intervention.

The research design for the inquiry is a randomized control-group with a pretest-posttest format. Participants are a convenience sample of 105 (51 experimental group, 54 control group) women attending an Eastern Caribbean public university. The treatment and control groups were formed using a random number list. Four weeks after the education intervention, both groups were re-evaluated. Women were given a one week timeframe for each the pretest and the post-test which were self-administered questionnaires (Nieto-Vazquez et al, 2009).

Multiple measures were used in the study. A demographic questionnaire, revised by a doctorally educated nurse to establish validity, is used to collect info regarding physical characteristics and risk factors. The Osteoporosis Knowledge Test contains 24 items and is divided into two subscales.

Score totals range from 0 to 24, higher levels of knowledge are indicated by higher scores. The Osteoporosis Health Belief Scale (OHBS) is a 42-item scale sectioned into 7 subscales with 6 questions in each subscale. Responses are scored from 1 (Strongly Disagree) to 5 (Strongly Agree). Higher OHBS reflect more positive levels of health beliefs regarding osteoporosis. Self-efficacy is measured by the Osteoporosis Self-Efficacy Scale (OSES). The OSES is comprised of 12 questions that gauge self-efficacy linked to osteoporosis prevention or confidence in carrying-out behaviors related to osteoporosis. The concept of empowerment is implied but not directly stated. Measures were translated into Spanish and checked for quality of answer to prevent bias (Nieto-Vazquez et al, 2009).

In reporting the findings nine questionnaires were discarded due to missing data. The number of participants in the final sample was 105. The completion rate was 89%. Most participants (71/105) reported to family history of osteoporosis. Eighty-seven percent (91/105) stated they did not take calcium supplements and 50% (53/105) reported their health status as good. The first and second hypotheses were supported using RMANOVA, this means that females who participate in an osteoporosis educational activity had higher levels of knowledge and more positive health beliefs regarding osteoporosis than women excluded from the sessions. Hypothesis 3 was not supported, meaning women attending the educational intervention do not report higher levels of self-efficacy than women not at the session.

Limitations are addressed in the Nieto-Vazquez et al (2009) study. The convenience sample technique restricts generalizability. Testing should include other populations of different cultures, ethnicities and age groups. Limited data is gleaned from use of questionnaires and all participants were well-educated. The 4 week interval between pretest and post-test needs to be lengthened to validate true learning and test participants decades later to see if they develop clinical osteoporosis. Future studies should develop and analyze programs targeting young women to prevent osteoporosis.

Wiljer et al (2010) use a pilot study to test the role of clinician-led reflective dialogue on increasing self-efficacy in survivors of breast cancer. One-on-one interviews were used as an intervention; evaluation was performed via pretest/post-test design. Self-determination theory guided the study as motivation is vital for a person to actively participate in their own care. A convenience sampling of 40 participants were recruited from the Breast Cancer Survivorship Program. Eligibility included having breast cancer, receiving outpatient treatments at Princess Margaret Hospital, started initial therapy for breast cancer, fluency in English and over 18-years-old. The purpose of the study is to evaluate Survivorship Consult (SC) impact on self-efficacy and the likelihood of behavioral change. This change is indicative of empowerment although the concept is not directly stated.

Outcome measures were assessed with two validated questionnaires called the Stanford Self-Efficacy Scale (SSES) and the Cancer Behavior Inventory (CBI). The SSES is a

six-item validated scale. The CBI is a 14 question tool that looks at self-efficacy specific to the initial phase of cancer therapy. Both scales provided quantitative measurements for self-efficacy (Wiljer, 2010).

Participants were obtained through convenience sampling and completed a set of pre-questionnaires to obtain baseline self-efficacy levels. Subjects underwent a SC guided by a template interview. Directly after the SC a set of post-questionnaires was administered to determine the effect of the SC on self-efficacy and to appraise the substance of the SC. The pilot study recruited 40 female breast cancer survivors over the course of 7 months (Wiljer, 2010).

There were a variety of important findings in the Wiljer et al (2010) study. Seventy-five percent of subjects were 41-60 years-old and 75% had finished college. A majority of women (64%) who reported income had a household income greater than \$60,000 per year. The SC was rated overall very useful by most participants and rated very likely that the women would search for additional information regarding their cancer diagnosis and treatment. There wasn't agreement as to the best timing to provide the SC 14/40 participants felt the SC should be provided with onset of breast cancer, 12/40 felt the SC should be during treatment and 8/40 thought the SC should be 6 months after treatment. The Stanford self-efficacy scale did not show a significant increase from pre-test to post-test. There was a significant increase in CBI median scores.

There are implications and discussion for future use of Survivor Consult as a method to improve the experiences of breast cancer survivors. By tailoring the SC to the person's encounter with cancer optimal follow-up can be provided. The study highlights the supposition that shared goal-setting and treatment planning is an effective means to bring out a desire to take on self management practices. Further studies are needed to clarify why SSES scores were not significantly improved. Perhaps because the subjects were well-educated and affluent they already had high self-efficacy at the beginning of the study. The greatest possibility for improvement in self-efficacy is in populations with a low education level, low socio-economic status and other social risk factors.

There are limitations in the Wiljer et al (2010) study. The study was a small pilot study with only 40 participants and there was no control group. All subjects were breast cancer survivors and the results can't be generalized to all cancers, other chronic disease or men. Although they followed the same outline for the SC, three different providers administered the SC. The variation may affect reliability or introduce a bias into the study.

The empirical literature review highlights associations involving self-efficacy and allows for identification of knowledge gaps. Self-efficacy and empowerment were confirmed as separate concepts that are both antecedents to effective diabetes intervention. Educational intervention is highlighted as an antecedent to self-efficacy and increased self-efficacy is followed by increased empowerment when empowerment is defined carrying out behaviors. The empir-

ical review did not support Survivorship Consult as an antecedent to self-efficacy but it did support empowerment as a consequence of self-efficacy.

There is a paucity of literature investigating the empirical connections between self-efficacy and empowerment from the individual's perspective. Only one article in multiple databases from a variety of disciplines focused on self-efficacy from the person's perspective with empowerment as a consequence. The concept definition was mentioned in the article but wasn't termed empowerment. More studies need to include subjects from vulnerable populations as they are poised to benefit the most from increased self-efficacy and empowerment. Future research is needed to look directly at empowerment as a consequence of self-efficacy across disciplines.

In conclusion, the effects of health care disparities are evident across populations and communities. As the populace of the US continues to diversify it is important to identify groups of persons who have methodically faced larger obstacles to health based on inclusion into certain 'at risk' categories. Self-efficacy is an important concept in health disparities because successful change is more likely when persons believe they can succeed. The ultimate goal in health disparities research is to reduce the gaps in care to sustain better overall health outcomes. The best place to start is from the individual's perspective, boosting self-efficacy resulting in empowerment of the individual and the community. Ultimately, health care providers can use theory to guide a more efficient, effective clinical practice.

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