

The Concept of Protection: A Dimensional Analysis and Critique of a Theory of Protection

Dimensional analysis clarifies the concept of protection, which has a commonly understood definition but is used inconsistently in research literature. Concepts such as protective factors and protective behaviors are often used interchangeably without adequately representing the phenomenon of protection itself. This article critiques a situation-specific theory of protection and presents dimensions of a model with an ecological view of protection. It uses dimensional analysis methods to derive the social construction of protection from its use in a broad range of literature; vigilant management and vigilant communication are salient dimensions of protection. The article compares conceptual literature with research literature to identify inconsistencies in use. Key words: *concept, dimensional analysis, protection, protective behaviors, protective factors, theory of protection*

Jennifer E. Shearer, RN, MSN
Doctoral Candidate
Medical University of South Carolina
Assistant Professor
Derry Patterson Wingo School of Nursing
Charleston Southern University
Charleston, South Carolina

PROTECTION IS a mature concept in nursing. Nightingale¹ referred to the concept, and it is included explicitly or implicitly in many of the nursing grand theories. Schuster et al² proposed a situation-specific theory of protection in a 1985 issue of *Advances in Nursing Science*. The theory was grounded in data of parents engaged in educating their children about sex. The researchers used a semi-structured interview instrument that questioned parents' understanding, methods, and expectations of sex education. Protection was the primary category that emerged, along with related categories of control, boundaries, knowledge, values, and mutuality.

The resulting theory of protection defined protection as the goal of sex education, the outcome of educational activities, and the ability to defend from injury. A state

The author thanks Marilyn G. King, DNSc, Carolyn H. Jenkins, DrPH, and Kathleen A. Simon, DNSc, for their review of a preliminary concept analysis of protection using dimensional analysis and for their encouragement to continue to build a theory of protection through a qualitative investigation.

of protection was attained through controlling personal boundaries. Knowledge, values, and mutuality were identified as variables modifying the quality of the protection provided. A process of identification and control of boundaries contributed to attaining this state of protection. Sex education was the process of protection, exhibited by the parents' actions. This presents some conceptual fuzziness because the concept is defined as a state (goal) and a process (sex education and the ability to defend self). Protection also is described from the perspective of the child and the parent. Semantic clarity of the concept, particularly differentiating between protective behaviors (educational activities), protective factors (modifying variables of knowledge, values, and mutuality), and the concept of protection (outcome or process), is needed.

Protection is inconsistently defined, and the relationships between and among component variables are not clearly stated in the theory of protection. Protection is both a component variable in the theoretical model as well as a concept representing the whole. In the model diagram, protection is equally influenced by all variables including control and boundaries, though they are not identified as moderating variables in the theory. Premises of the theory indicated that knowledge, values, and mutuality influenced protection, the state or goal. Control and boundaries influenced protection, the process of sex education. Logical adequacy of the theory cannot be determined because the concept is not consistently defined. A critique of the theory is presented as a springboard to a mid-level theory of protection. However, an analysis of this concept is needed first.

There are obviously many definitions of *protection* in the literature. Therefore, a concept analysis that seeks to define the essential meaning of the concept is not desired. Dimensional analysis³ is presented as a method of concept clarification using research texts as the unit of analysis. Dimensional analysis is based on symbolic interactionism inasmuch as the social object, protection, will be analyzed via a methodology that asks: "What is happening here?"³ Looking for the dimensions that make up the social use of the concept is a method of natural inquiry. It differs from grounded theory methods, however, in that the basic social process (the essence) is not sought but rather its relevant and salient dimensions. The steps of the process are questions that guide the search: What are the dimensions of protection and how are their properties related to each other? What is the perspective reflected in each study? What are the contextual elements contributing to the definition and use of protection? What are the assumptions the investigator integrated into each study? What are the implications of the construction and use of protection as a concept in nursing theory, research, and practice? This questioning strategy supports the purpose of the analysis method, to get at what is happening.³ This is the same query that symbolic interactionism makes for grounded theory methods. However, instead of looking for a basic social process, one examines the context in its complexity.⁴

Protection is given meaning by its context. As many aspects, components, characteristics, attributes, and descriptors (dimensions) of protection as possible are sought. Social meaning is constructed by disciplines that use the concept. The perspectives from various social constructions, their contexts,

and assumptions are explored for meaning and logic (relation to each other).

Multiple databases were searched with *protection* as the key word. More than 1,000 articles were found. A search for articles with the word *protection* in the title delivered 16. These were chosen along with others having related terms: protective factors, protective mechanisms, or protective behaviors. During the process of reading and identifying dimensions, theoretical sampling brought the total sample to 72. Dimensional analysis was applied to text data as a method of concept analysis to advance the conceptualization of protection. This article presents a critique of the theory of protection proposed by Schuster and others² and a broader concept analysis of protection using dimensional analysis methodology. It also proposes dimensional components to be included in the development of a midrange theory of protection and presents a model.

DIMENSIONS OF PROTECTION

The process of finding dimensions was iterative. A matrix of perspectives and con-

texts for protection was developed to better understand how the concept of protection was used in the literature and if meanings changed with context and perspective (see the box entitled "Dimensional Matrix of Protection"). The guiding question was: What is happening when protection occurs? Other questions were: How is the concept constructed? What are the relationships among the dimensions and subdimensions? What attributes are consistently used in the literature to define or qualify the concept? Are some dimensions more important than others? What are the empirical bases for including these dimensions? Perspective, context, and assumptions were identified as well as phrases that best represented the concept. The process involved expanding and combining phrases and words from all the studies until a pattern developed. Only dimensions that were salient and relevant in each perspective of the protection matrix were included in the final analysis. It was important to recognize personal assumptions that could influence this process because choosing phrases to be grouped was subjective.

Dimensional Matrix of Protection

Overarching Dimensions: Vigilant Management and Vigilant Communication

<i>Perspective</i>	<i>Context</i>	<i>Processes</i>	<i>Consequences</i>
<ul style="list-style-type: none"> • Protector • Protecting object/device • Protected person/group 	<ul style="list-style-type: none"> • Threat exposure • Timeliness • Strengths • Capabilities 	<ul style="list-style-type: none"> • Appraisal of threat • Regulation • Control • Guard against • Seek information • Persuade • Alter perception 	<ul style="list-style-type: none"> • Adaptation • Adjustment • Survival • Resilience • Prevention of undesirable health status • Standard or regulation

Vigilant management and vigilant communication were identified as overarching dimensions. They provided an explanation of protection that was consistent with the perspectives and contexts explored in the literature and supported by commonly held assumptions about protection. Common use of the word *protection* was related to covering or shielding and antibody protection at the cellular level. In economics, the concept related to bankruptcy protection, copy protection, liability protection, and protection agreement. Social work use related protection to child protection. Psychology use related protection to models of cognitive and environmental attributes and behaviors of at-risk populations. Other professional literature referred to employee protection. Literature from these disciplines was sampled to explore the dimensions of protection.

Vigilant management

Vigilant appeared early in the search and continued to show up, confirming it as a qualifier of both dimensions of protection: management and communication. Nightingale¹ first referred to management as petty management in households of the sick. Other references to management included risk management, lifestyle management, symptom management, and resource management. The idea of management implies a responsibility toward all parties as in the ethical protection of subjects and data protection. The phrase “organization and inte-

gration of cognitive plans” in Rogers’ protection motivation theory illustrated this idea of management as health protection.^{5(p101)} A buffering process that provided protection while living with a fatal illness involved a period of “engaging in the fight.”⁶ This depicts decisional and endurance components of vigilance. Vigilant management is broad enough to include many interventions that allow recognizing, appraising, and guarding against. The idea of vigilance removes management from the realm of the mundane to that of expecting a threat and being prepared. It implies specificity for protection in contrast to general management applicable to all health promotion.

Appraisal of threat is a subdimension of vigilant management. Threat is salient because protection is not relevant without perception of its need. Identification of the threat or risk is the target of protective behaviors. Protection is absent without the interaction of interventions with the risk. Protection modified response to the threat or risk.^{7,8} In the case of child protection, recognition of threat was essential to protection of the child.⁹ Lack of vigilance or accuracy in appraisal of threat was evident by repeated cases of injury after children were returned to their abusive parents. Identifying the threat and appraising its severity were initial steps in the interactive process^{6,10} that mediated or moderated the outcomes. Perception of threat is important in the health belief and health promotion models. Schuster and others’² theory of protection proposed that identifying boundaries was necessary to the process of protection through sex education. Inductive reasoning from this theory supports appraisal of threat as a dimension of meaning for protection.

Vigilant management and vigilant communication were identified as overarching dimensions.

Controlling, regulating, and guarding against are also subdimensions of vigilant management. Control was related to management in uncertain situations¹¹ and in caregiving.¹² Control was the outcome of the appraisal process and exhibited as internal locus of control.^{11–13} Schuster and others² proposed that control of personal boundary was the goal of sex education. This protection state was attained through assigning and controlling boundaries. Boundary is a relevant dimension to the state of protection but, as a process, protection is better represented by what a boundary does—control or regulate. Other literature contributed to the identification of these dimensions. Regulation implies monitoring efforts to attain standards, whether informal, internal, normative, or policy level. Provision of protection through regulation of growth and development of children,¹⁴ regulation of noise levels,¹⁵ or fall protection for roof workers¹⁶ represented protection strategies. Guarding against implied a threat to be reduced or eliminated by barriers and devices.¹⁷ Protection included both micro level guarding of the psyche¹³ and macro level guarding of the environmental balance.¹⁸

Vigilant communication

Vigilant communication includes seeking information, persuading, and altering perceptions. Seeking information allowed some control over the amount, since too much was harmful rather than protective.¹⁹ Seeking information in order to alter perceptions was useful for decision making.²⁰ Knowledge was a variable that moderated the quality of protection according to Schuster and others.² They identified

knowledge as a variable, but protection was provided only when the parent as the source of knowledge had adequate and accurate information. Therefore, knowledge that altered perceptions about protection was possible through accurate and cautious giving and receiving information—vigilant communication. Consider client protection and confidentiality of information. Managing who knows what and how much they know are considered protection of privacy. Some type of information was generally needed for managing successfully in a situation of threat or risk.^{5,19–21} Persuasive communication is related to control with the potential for regulation and policy making. Persuasive power lends control to the idea of management.

Schuster and others² proposed values as a variable. Values provided the impetus for the personal boundary control that defined protection in their theory. Although it was relevant for sex education, it is not salient in other contexts of protection. Value judgments related to clean air or water regulations are not relevant once a protective policy is in place. Values may determine some tribal behaviors to protect against phases of the moon, but they are specific to cultural beliefs and not relevant in all cultures. Values are subsumed under the broader dimension of resources of strengths in this analysis of protection.

It is important to avoid including so many dimensions that the concept's meaning overlaps with related phenomena. Protection is often used in the context of a nurturing interpersonal relationship, and it is important to delineate the dimensions of protection from those dimensions belonging to the relationship. Presence and trust are protective in the context of a relation-

ship but not in the context of policy or regulatory protection. Presence of a watchful caregiver²² or presence of a protective skin barrier¹⁷ suggested that proximity was desirable for protection. However, the protection provided by a writ or policy is not dependent on its proximity. Likewise, monitoring without interventions falls short of protection. Monitoring was necessary but not sufficient for protection, as in child protection cases where nurses monitored but hesitated to report cases.⁹ Safety includes monitoring, but safety is an outcome that is not exclusive to protection. Whereas appraisal of threat is cogent, appraisal of resources is irrelevant because resources are appraised even in the absence of a threat or risk.

PERSPECTIVES OF PROTECTION

Schuster and others² addressed several perspectives of protection. The focus of protection shifted to the parent who changed the subject to protect self from an uncomfortable question about sex. Although the goal of sex education was protection, whose protection was dependent on the perspective. Analysis of the perspectives of protection asks the following questions: How do different perspectives change the nature of protection? How do the protector and the one protected define protection? Does the perspective alter the organization of dimensions of protection? How does the context contribute to the meaning of the concept? Perspectives of protection include protection of, protection from, and protection by. Protection is provided by nursing actions, and it is certainly within the domain of nursing. Grand theories of nursing implicitly or explicitly support this statement. Many nursing practice models could repre-

sent protection by substituting a construct for protection in place of the nursing intervention. Nurses apply protection to skin wounds, provide protective information, and protect by immunizing. However, the role of nurses in child protection provided a different perspective for protection.⁹ Families at risk for abuse and neglect of their children were difficult to identify because their vulnerability status was influenced by transient, complex, interacting factors. The protection offered by these nurses was not sufficient for protection of vulnerable children. Advocating for the child and providing family support had conflicting consequences. The perspective of who was protecting whom was very relevant to the consequences.

Protection from a threat was evident from the perspective of adults protecting themselves from disease through health behaviors,²³ having information about cancer,²¹ and having basic resources.²⁴ Self-protection involved shielding the inner self from uncertainty.^{13,25} Timeliness and threat exposure are dimensions in the context of self-protection. They were suggested as proximal rather than distal concerns, such as the immediate concern of preventing conception over prevention of contracting sexually transmitted disease,²⁶ or protecting self-identity over forming meaningful relationships.¹³ Sensitive stages and crises in families,²² critical points requiring child protection,⁹ a particular decibel level,¹⁵ and perception of threat to one's psyche^{24,25} illustrated the threat exposure. Salience of threat exposure was retained in the context of self-protection. Whether a threat is a known risk is irrelevant, only that the person perceives it so. Adolescents in foster care protected themselves from devaluation

and uncertainty by maintaining only shallow relationships.¹³ Proximal circumstances that threatened exposure of self had a greater influence on self-protective behaviors than any remote benefits from forming meaningful relationships. The benefit of the protection also was self-determined. Timeliness was related to critical points and proximal concerns. Protection was a response to the perceived need for protection (such as a health professional who does not share the same perception of the threat). Thus, protection through interpersonal relationships cannot be assumed without considering the context of timeliness and perception of threat.

The perspective of external protection such as policy and regulations was suggested by phenomena of identifying the threat and controlling responses,²⁷ monitoring, assessing, and tracking.²⁸ Protection outside the individual domain such as that afforded by policy can reinforce micro level protection. If policies have limitations or restrictions to their enforcement, they may not provide protection.¹⁵ The perspective of the one being protected suggested phenomena of safety, control, and knowing. The protected took responsibility for their behavior,²⁹ experienced a feeling of safety,¹¹ and exhibited resources of social connection.^{30,31}

LOGIC OF PERSPECTIVES, CONTEXT, AND ASSUMPTIONS

Logic is determined by analyzing the consistency of the relationship among the perspectives, context, and underlying assumptions of the dimensions.³ Questions guiding this part of the analysis are: Is the definition of protection different for the perspective of the protected and the one or

thing protecting? Does the context of protection change the consequences of protection? Should the assumptions held about protection be accepted or challenged? Scientific inquiry demands bringing these assumptions about protection to our consciousness by systematically questioning protection in multiple contexts and from multiple perspectives and seeking relationships among its characteristics. Articles with protection in their titles were reviewed for consistency of relationships. Cultural studies provided support for the assumption that protective behaviors in a cultural context included health care and parental practices. Protection was provided at sensitive life stages in an African village³² and during crisis situations among Mexican-American families.²² The types of protection described were related to the parental role or tribal practices based on the assumption that culture influenced practice. Mexican Americans felt a strong sense of family that included presence, constancy, and respect for a child's needs, offering a balance between attachment and overindulgence.²² The idea of balance suggested there was a critical point at which the process became either protective or risky. The dimensions of protection in a cultural context are influenced by that culture's assumptions about member roles and functions. Timeliness is related as a subdimension in the context of protection.

In the context of ethnicity, the consequences of protection varied. Ethnic identity was protective to a point, but when threat of racism was perceived, the consequences of protection became survival. Mexican-American families directed survival efforts toward protection from an uncertain future.²² African-American mothers who perceived the threat of racism per-

ceived their protection was a state of survival.²⁴ Theoretical sampling of literature revealed other cultural contexts of protection. Parents who adopted children from another culture needed to intervene with resources at an earlier threshold than other families.³³ The salience of critical points and timeliness was evident in each context.

Attachment relationships were clearly important in some contexts.^{14,22,33,34} In cultural studies, dimensions of presence and balance in relationships have been identified as protective. However, presence and balance were more relevant to the relationship than to protection. A study from the social work literature revealed ethnic identity as a protective factor for success in school.^{35,36} Other protective variables, collective self-esteem and racial socialization, predicted positive academic outcomes. These factors were attributes of relationships and were difficult to distinguish from other contextual influences that provide protection. The dimensions of protection within a relationship were based on assumptions of cultural and societal meaning. Qualitative researchers provided rich description of protection embedded in relationships. Quantitative researchers presented measures of protection provided by family relationship as family hardiness³⁴ and family environment.^{19,33,35,36} These researchers assumed that protection was provided by family relationships rather than within those relationships.

Dimensions of protection were the same even with changing perspectives. The perspective of protection as a device or barrier and the contexts were represented by studies on hearing protection and wound care.^{15,17} Protection was defined as use of the device, or wound dressing. A critical

level for protection was identifying the threat as noise levels greater than 90 dB and identifying critical points for therapeutic interventions. Timeliness in this context also related to the influence of age and the number of years exposed to noise, as well as the length of time a wound had been present. Self-protection was motivated by risk perception and its proximity (timeliness). Devices and dressings, like interpersonal relationships, also must consider timeliness and threat exposure in order to provide protection.

CONCEPTUAL AND EMPIRICAL INCONSISTENCIES

Protection and protective factors were used interchangeably in the literature. Protective factors were the conditions that influenced and facilitated protection. Protective factors contributed to resilience by modifying the negative effects of stress.²⁹ Specific competencies such as cohesion, expressiveness, and competence essential to resilience³³ were considered protective factors. Family hardiness was a protective factor that decreased vulnerability^{33,36,37} and improved resistance to risk factors.³⁸ Protective factors included personal motivation and readiness for change^{27,29}; self-perception, family environment, social support, and coping strategies¹⁹; racial socialization and ethnic identity³⁰; family hardiness³⁴; cohesion and expressiveness³³; and economic and social resources.³⁹ Conceptually, protective factors are antecedent to protection, but in the literature they were often a surrogate term for protection.

In the situation in which a protective factor is necessary to protection as outcome, the logic of the interchanged mean-

ing is valid. However, if a protective factor is general and distal to the event, it may be insufficient to measure protection as the presence of the protective factor. For example, socioeconomic status was a context that served as a measure of risk or protection, but family process within the socioeconomic status was a greater influence on outcomes.⁴⁰ Positive coping processes in a family of low socioeconomic status resulted in very different outcomes from those of a family of similar socioeconomic status but poor coping processes. Family processes were more relevant to adaptation and therefore represented protection better than socioeconomic status. Protection was provided within the relationship rather than by it.

Protection has been defined as a process in qualitative studies^{13,22,24,25,32} and in the theoretical literature of psychology.^{7,8} Protective factors also have been operationalized as mechanisms or processes^{19,41,42} that influence the state of protection. Rutter⁴³ described a continuum with vulnerability as the negative pole and protection as the positive pole. Protective and vulnerability factors interacted with a stressor to predict adjustment.⁷ Therefore it is logical that adjustment is the continuum of consequences that protection influences. Protection is conceptualized as the interaction with the threat within the source of vulnerability.

Protection and resilience also were interchanged in the psychological literature. Survival was a consequence of protection, but survival was not the same as resilience. Survival can occur long before resilience develops. Intuitively, the opposite of vulnerability is not protection, but invulnerability. However, invulnerability could be the consequence of no risk while protection

implies the interaction of a risk or threat of a risk. Safety can be a consequence of invulnerability as well as protection. If only the consequences rather than the mechanisms or processes are considered, then invulnerability and protection would be interchangeable. When protection is defined as a process, safety is not a surrogate term for protection.

Protective factors are not merely the opposite of risk factors.⁴² The context contributes to understanding whether a factor is protective or risky. It is the mechanism or process rather than the factor that determines its function. Family cohesion is protective for the family with school children, but it could serve as a risk factor for a family who controls a member too tightly rather than launching that member into society at the appropriate stage. Protective processes include reducing the impact of risk through an interaction or involvement with the riskiness itself.⁸ Therefore the mechanisms of risk and protection are different even if they are derived from the same source of vulnerability. The same behavior or trait could be considered a risk at one stage of life and a protective factor at another stage. For example, self-sufficient adults with shallow relationships were less likely to suffer emotionally in periods of extreme social stress.⁴³

Dynamic processes have the ability to interact with other processes. Protection is a dynamic, interactive process with effects that may be inconsistent over different levels of other influencing variables.³⁵ Differences in protective processes have been conceptualized as adjustment models that are additive or buffering.^{43,44} Additive models demonstrate main effects. Main effects mean that the effect of a predictor variable (protective factor) is consistent across lev-

els of the other influencing variable (risk factor). Buffering models (interacting) can have either moderating or mediating effects. Independent variables in mediating models are correlated while moderating variables generally do not share correlation with other independent variables.⁴³ Models provide a heuristic for understanding the relationship of the variables with their consequences. In the literature, additive models directly influenced consequences, such as the resiliency of low-birth-weight children living in poverty,¹⁴ health-related intentions,⁴⁵ and regular mammogram screening.⁴⁶ The theory of protection² proposed that knowledge, values, and mutuality were moderating variables. Other moderating factors providing protection in the literature included symptom regulation that predicted psychotic symptoms,¹⁰ communication with patients and teachers that predicted social bonding,³⁰ personal motivation that influenced stress and adaptive behavior,^{29,37} and ethnic identity that influenced resilience.³⁵ Mediating variables indirectly influence consequences. Intentions to adopt a recommended response were mediated by the belief in the efficacy of the coping response.⁷ Health status was mediated by relative risk,⁴⁷ avoidance of environmental tobacco smoke was mediated by related health-promoting behaviors,⁴⁸ and school competence was mediated by family environment.³³

Interaction models have methodological problems including inconsistent use of moderating and mediating terminology. Variables that mediate other variables share relationship; they are intercorrelated.⁴⁹ If mediating variables are entered into a regression model, the explained variance will be shared, making it harder to find significant interactions. Large sample sizes are needed to find extremes in the population in

order to show a difference in the effect of the predictor on low-risk and high-risk groups.⁴² Protection effects may be missed if sample size is not large enough to capture interactions. If interactions are found, main effects of risk and/or protective factors are equivocal,⁴⁹ though researchers sometimes continue to refer to main effects as significant. Moderating models have predictor variables that are not correlated with other independent variables.⁴³ Schuster and others² stated that knowledge, values, and mutuality were moderating variables though their model depicted correlations with other variables. Precision of terminology is important if the propositions are to be tested and the theory broadened in its application.

IMPLICATIONS FOR NURSING

Dimensional analysis has provided a method of constructing the meaning of protection by its use in texts and by clarifying assumptions. Salient dimensions from the perspectives of the protector and the protected within the context of mediating and moderating variables with consequences at various levels of adjustment have been identified in the literature. The nature and logic of protection have been analyzed for the purpose of contributing to development of a theory with an ecological view of protection. Such a view will alleviate some of the individual's blame for lack of health protection.

Protection has both micro and macro contextual dimensions, and processes other than individual cognitions and behaviors are involved. The assumptions of this tentative theory are derived from the metaparadigm concept of person as individual, family, community, and society, and the natural world as the target for protection. An eco-

logical view of protection identifies such objects as air and water in the environmental metaparadigm as targets of concern. Environment is the context that contributes to the vulnerability of person. It includes the risk as it interacts with person variables. Health is presented as the consequences of protection defined as adjustment, and nursing provides the instrument for protection. Nursing intervention models readily present nursing as protection. The construct of context includes timeliness as a dimension to illustrate protection as a dynamic interaction. Time is important in ecological theories to demonstrate change. Threat of exposure is essential to the concept of protection because otherwise it would represent safety, a different concept. Resources of strengths and capabilities include protective and risk factors. Risk factors are included here because they are interchangeable with protec-

tive factors, depending on the context. They mediate outcomes along the vulnerability-adjustment continuum and correlate with other factors that are in the context. Vigilant management and vigilant communication moderate the state of protection and can be distinguished from protective factors in the context. Protection as a process is represented by the interaction of vigilant management and vigilant communication with a risk in the context of threat exposure, strengths, capabilities, and timeliness along a continuum of vulnerability. The entire picture of this interactive process represents protection (Fig 1).

The challenge of developing a mid-range theory lies in conceptualizing protection as both process and outcome without diluting its capacity for discrete measurement. Just as nurses provide care by caring, nurses provide protection by protecting. Measure-

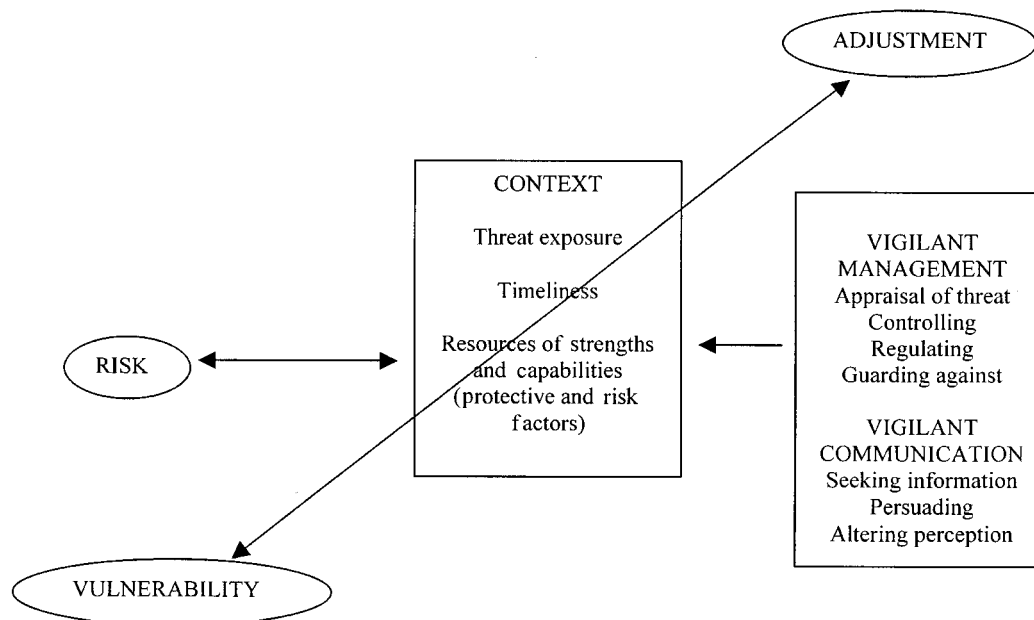


Fig 1. Model of protection.

ment of the variable is weak because process influences outcome. Schuster and others² developed a situation-specific theory of protection related to parents as sex educators. They stated that knowledge, values, and mutuality moderated the quality of protection. Technically these variables were within the context of the situation and thus acted as mediators. Sex education, the process of identifying and controlling boundaries, moderated the goal—personal boundary control. Sex education was the process of protection, and personal boundary control was the state of protection. These distinctions were not clear in the model diagram. The variables are relevant to the situation, but values may not be relevant in all perspectives and should be excluded as a construct in a mid-level theory. For example, water quality standards protect whether or not there is value or even awareness of them. Communication rather than knowledge would better represent the interactive process. Mutuality underscores the symbolic interaction of protection as an “interchange between and among protectors and those to be protected,” but is redundant in an interactive model.^{2(p76)}

The assumption that protective models are interactive provides the basis for proposing this theoretical framework and building on Schuster and others’² theory of protection. Their theory proposed family or parental responsibility for sex education. They recognized the confines of their theory and suggested enlarging the theory to include all human protective phenomena. A theory that guides nursing practice in providing protection needs to include the meta-paradigm concept of nursing with a view beyond even human protective phenomena. An ecological view recognizes that human

protective phenomena can be enhanced by protection at a community, social, and governmental level. Protection at a macro level would have nursing presence advocating for a policy or making the public aware of it through vigilant communication. Protection at a micro level is illustrated as nursing’s vigilant management of the situation. This perspective provides a basis for modeling protection as a process of interaction with the risk. The antecedent of protection is risk or threat of exposure in the context. Without an intervention, risk can lead to consequences of maladjustment. The interaction of a risk trajectory and mediating (protective factors) and moderating variables (vigilant management and vigilant communication) results in a changed trajectory called protection. The context variables are inter-related: threat exposure, timeliness, and resources of strengths and capabilities. Protective factors are derived from these attributes. Moderating variables influencing the trajectory ideally do not share a relation with other predictors, but they influence consequences by their interaction with the risk trajectory. Because protective and risk factors do share variability, it is theorized that moderating variables are not the same as protective factors. This allows for extrinsic and macro-level influences such as nursing interventions or policy-level changes.

This article has explored the concept of protection as used in the scientific literature and examined its use in a situation-specific nursing theory. A tentative framework was proposed for guiding nursing practice with an ecological perspective. Dimensional analysis methods using natural inquiry of primary data are needed to further develop these relationships and move toward building a midrange grounded theory of protection.

REFERENCES

1. Nightingale F. *Notes on Nursing*. London, England: Harrison & Sons; 1924.
2. Schuster EA, Kruger S, Hebenstreit J. A theory of protection: parents as sex educators. *Adv Nurs Sci*. 1985; 4:70–77.
3. Caron CD, Bowers BJ. Methods and application of dimensional analysis: a contribution to concept and knowledge development in nursing. In: Rodgers BL, Knafl KA, eds. *Concept Development in Nursing: Foundations, Techniques, and Applications*. Philadelphia: W.B. Saunders; 2000.
4. Kools S, McCarthy M, Durham R, Robrecht L. Dimensional analysis: broadening the conception of grounded theory. *Qual Health Res*. 1996;6(3):312–330.
5. Rogers RW. A protection motivation theory of fear appeals and attitude change. *J Psychol*. 1975;91:93–114.
6. Wilson S, Morse JM. Living with a wife undergoing chemotherapy. *Image J Nurs Sch*. 1991;23(2):78–84.
7. Luthur S. Vulnerability and resilience: a study of high-risk adolescents. *Child Dev*. 1991;62:600–616.
8. Rutter M. Psychosocial resilience and protective mechanisms. *Am J Orthopsychiatry*. 1987;57(3):316–331.
9. Hanafin S. Deconstructing the role of the public health nurse in child protection. *J Adv Nurs*. 1998;28(1):178–184.
10. O'Connor FW. A vulnerability stress framework for evaluating clinical interventions in schizophrenia. *Image J Nurs Sch*. 1994;26(3):231–237.
11. Hupcey JE. Feeling safe: the psychosocial needs of ICU patients. *Image J Nurs Sch*. 2000;32(4):361–367.
12. Szabo V, Strang VR. Experiencing control in caregiving. *Image J Nurs Sch*. 1999;31(1):71–75.
13. Kools S. Self-protection in adolescents in foster care. *J Child Adolesc Psychiatr Nurs*. 1999;12(4):139–152.
14. Bradley RH, Whiteside L, Mundfrom DJ, Casey PH, Kelleher KJ, Pope SK. Early indications of resilience and their relation to experiences in the home environment of low birthweight, premature children living in poverty. *Child Dev*. 1994;65:346–360.
15. Ewigman BG, Kivlahan CH, Hosokawa MC, Horman D. Efficacy of an intervention to promote use of hearing protection devices by firefighters. *Public Health Rep*. 1990;105(1):53–62.
16. Johnson HM, Singh A, Young R. Fall protection analysis for workers on residential roofs. *J Construction Eng Manage*. 1998;124(5):418–429.
17. Read S. Treatment of a heel blister caused by pressure and friction. *Br J Nurs*. 2001;10(1):10–19.
18. Mjelde-Mossey L, Mor Barak ME. The conceptual and empirical link between health behaviors, self-reported health, and the use of home health care in later life. *Home Health Care Serv Q*. 1998;17(3):71–89.
19. Hockenberry-Eaton M, Kemp V, Dilorio C. Cancer stressors and protective factors: predictors of stress experienced during treatment for childhood cancer. *Res Nurs Health*. 1994;17(5):351–361.
20. Cobb B. Communication types and sexual protective practices of college women. *Public Health Nurs*. 1997; 14(5):293–301.
21. Buchanan P, Sachs M. Breastfeeding and breast cancer: research review. *RCM Midwives J*. 1998;1:306–309.
22. Rehm RS. Parental encouragement, protection, and advocacy for Mexican-American children with chronic conditions. *J Pediatr Nurs*. 2000;15(2):89–98.
23. Krick JP, Sobal J. Relationships between health protective behaviors. *J Community Health*. 1990;15(1):19–33.
24. Banks-Wallace J, Parks L. “So that our souls don’t get damaged”: the impact of racism on maternal thinking and practice related to the protection of daughters. *Issues Ment Health Nurs*. 2001;22(1):77–98.
25. Cotte-Arsenault D, Marshall R. “One foot in—one foot out”: weathering the storm of pregnancy after perinatal loss. *Res Nurs Health*. 2000;23(6):473–485.
26. Poppen PJ, Reisen C. A woman’s use of dual methods of sexual self-protection. *Womens Health*. 1999; 30(2):53–66.
27. Chin DA, Chittaluru VK. Risk management in wellhead protection. *J Water Resources Plann Manage*. 1994; 120(3):294–316.
28. Costello RG, Emery RJ. A program for reducing institutional risk when releasing hazardous assets. *J Environ Health*. 1996;59(2):12–16.
29. Lindenberg C, Solorzano R, Krantz M, Galvis C, Baroni G, Strickland O. Risk and resilience: building protective factors. *MCN Am J Matern Child Nurs*. 1998;23(2):99–104.
30. Fitzpatrick KM. Fighting among America’s youth: a risk and protective factors approach. *J Health Soc Behav*. 1997;38:131–148.
31. Pollard JA, Hawkins JD, Arthur MW. Risk and protection: are both necessary to understand diverse behavioral outcomes in adolescence? *Soc Work Res*. 1999;23(3): 145–158.
32. Juntunen A, Nikkonen M, Janhonen S. Utilizing the concept of protection in health maintenance among the Bena in Tanzania. *J Transcult Nurs*. 2000;11(3):174–181.
33. McGuinness T, McGuinness J, Dyer J. Risk and protective factors in children adopted from the former Soviet Union. *J Pediatr Health Care*. 2000;14(3):109–116.
34. Donnelly E. Parents of children with asthma: an examination of family hardiness, family stressors, and family functioning. *J Pediatr Nurs*. 1994;9(6):398–408.
35. Miller DB, MacIntosh R. Promoting resilience in urban African-American adolescents: racial socialization and

- identity as protective factors. *Soc Work Res.* 1999; 23(3):159-168.
36. Jackson Y, Frick PJ. Negative life events and the adjustment of school-age children: testing protective models. *J Clin Child Psychol.* 1998;27(4):370-380.
37. Dyer JG, McGuinness TM. Resilience: analysis of the concept. *Arch Psychiatr Nurs.* 1996;10(5):276-282.
38. Coie JD, Watt NF, West SG, et al. The science of prevention: a conceptual framework and some directions for a national research program. *Am Psychol.* 1993;48(10):1013-1022.
39. Bassuk EL, Buckner JC, Weinreb LF, et al. Homelessness in female-headed families: childhood and adult risk and protective factors. *Am J Public Health.* 1997;7(2): 241-248.
40. Barnard CP. Resiliency: a shift in our perception? *Am J Fam Ther.* 1994;22(2):135-144.
41. Calvert WJ. Protective factors within the family, and their role in fostering resiliency in African-American adolescents. *J Cult Diversity.* 1997;4(4):110-117.
42. Fraser MW, Richman JM, Galinsky MJ. Risk, protection, and resilience: toward a conceptual framework for social work practice. *Soc Work Res.* 1999;23(3):131-143.
43. Rutter M. Statistical and personal interactions: facets and perspectives. In: Magnusson D, Allen VL, eds. *Human Development: An Interactional Perspective.* New York: Academic Press; 1983:295-319.
44. Garmezy N. Search for protective factors. In: Stevenson JE, ed. *Recent Research in Developmental Psychopathology. Journal of Child Psychology and Psychiatry Book Supplement No. 4.* Oxford: Pergamon Press; 1985.
45. Baumann LJ, Keller ML. Response to threat information. *Image J Nurs Sch.* 1991;23(1):13-18.
46. Meischke H, Andersen R, Bowen D, Kuniyuki A, Urban N. A health priorities model: application to mammography screening. *Health Educ Behav.* 1998; 25(3):383-395.
47. Flaskerud JH, Winslow BJ. Conceptualizing vulnerable populations: health-related research. *Nurs Res.* 1998; 47(2):69-78.
48. Martinelli AM. Testing a model of avoiding environmental tobacco smoke in young adults. *Image J Nurs Sch.* 1999;31(3):237-242.
49. Cronbach LJ. Emerging views on methodology. In: Wachs TD, Plomin R, eds. *Conceptualization and Measurement of Organism-Environment Interaction.* Washington, DC: American Psychological Association; 1994.