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LEADERSHIP DEVELOPMENT OF REGISTERED DIETITIANS

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LEADERSHIP DEVELOPMENT OF REGISTERED DIETITIANS

by

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Leadership Development of Registered Dietitians

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This study investigated leadership development of Registered Dietitians in nationally elected or appointed leadership positions of the American Dietetic Association. An explanatory sequential mixed method design: participant selection model was used collecting qualitative data after a quantitative phase. Demographic data were collected via a mailed survey questionnaire followed by, with consent, a web based validated Sentence Completion Test International- Maturity Assessment Profile Research Version (2) (SCTi-MAP) to determine their stage of leadership development. Of the 97 participants, 86% (n=83) responded to the survey questionnaire with 92% (n=79) rating the importance of dietitians being leaders as very important; 100% (n=83) believed that leadership ability can be developed; 70% (n=66) did not think that learning about leadership through education and training was sufficient to help people transform into leaders; 78% (n=65) believed that leadership is related to seeing the world through new eyes; 99% (n=82) think that there are stages of developmental growth in leadership, and 96% (n=80) think that leadership maturity evolves over time. Forty-six of the original 97 subjects completed the SCTi-MAP with a response rate of 47%. Of the 46, 87% (n=40) were identified at the Conventional level with 26% (n=12) at the Expert Action Logic, Stage 3/4 and 61% (n=28) at the Achiever Action Logic, Stage 4, and 13% (n=6) were identified at the Post Conventional Individualist Action Logic, Stage 4/5 of development. Twenty-five participants who completed the SCTI-MAP agreed to participate in the

qualitative phase of the study to determine the process/model of leadership. The model was based on semi-structured, audio recorded, transcribed telephone interviews where participants described their experience of leadership. Transcripts were open coded for categories, sub-categories and dimensions. The six categories identified were: "getting hooked," born/made, mentoring, horizontal development, personal growth and "from fear to freedom." Categories were then collapsed into a taxonomy of leadership development in the axial coding paradigm which distinguished the central phenomenon as: mentoring as the segue to leadership. The model hypothesizes the sequential unfolding of the leadership development process, and positions it for validation and further study.

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INTRODUCTION

"When the day comes that your executive abilities equal your scientific knowledge, your profession (dietetics) will be secure. Until that day, you will be faced with a constant and unwelcome challenge (1)."

Scientific knowledge and technical competence are defining characteristics of practicing dietitians; however opportunities to develop executive abilities, especially leadership remain under utilized. The creation of the annual American Dietetic Association (ADA) Leadership Institute in 2003 represented an awareness of the need to invest in dietetic leaders (2). However, attendance at the Institute was initially by invitation only and after a person had been elected or appointed to a leadership role. In the 2004 Report on the ADA, ADA Foundation and Commission on Dietetic Registration, career and leadership skills development were identified as unmet needs by ADA member practitioners, nonmember practitioners and student members (3).

The study of leadership is as old as civilization itself. Some of the earliest written principles are seen in the 500 year old Egyptian hieroglyphics for leadership *(seshemet)*, leader *(seshemu)* and follower *(shemsu).* Almost 600 years ago, Confucius believed in the importance of modeling a moral example and rewarding what is right and punishing what is wrong. Heroes of the Greek *Illiad* displayed inspirational leadership and the need for law and order (4). Leadership authors and leadership theories have evolved over time from Lao Tzu in the 6th Century BC to the present.

The need for leadership is incessant. Leadership and leadership development have been identified as critical for success in the twenty first century, so much so that leadership has become a growth industry. Bennis posits that our quality of life, amidst the volatility, turbulence and ambiguity of our present day societal context, *depends* on the quality of our leaders (5). Yet actualization of quality leadership often remains

elusive, disappointing and unsatisfactory, suggesting that *something(s)* affects one's ability to lead.

Leadership research and theory have been defined based on objective measures such as: traits, attitudes and performance, intellect, personality, appearances, relationships, competencies, values and standards, and situations and service. However, another approach to leadership effectiveness is from a subjective developmental perspective.

Most cognitive growth in adults is horizontal – that is learning new skills, new methods, new facts, pursuing advanced degrees, whereas, subjective development is vertical which focuses on how people tend to reason and behave in response to their experience. Vertical development is transformational growth, that is growth manifested by changes in our *form* rather than *content* of understanding , and addresses questions such as: How do people interact? How does a person feel about things? How does a person think?

Developmental theory assumes that human beings actively make sense of experience; that we are meaning makers of our experience, creating maps of reality that change with development. This sequence of development is the same for all people. No stage of the sequence can be skipped. However, most human beings do not grow through the entire spiral, but rather settle in the stage that is most familiar or most supported by their environment (6).

Constructive developmental theorists posit that "persons move through qualitatively different ways of knowing who they are, how the world works, and how they know what they know (7)," and that "leaders as individuals develop over the life

course and do so in predictable ways (8)." Most developmental psychologists agree that what differentiates leaders is not so much their philosophy of leadership, their personality, or their style of management. Rather it's their internal "Action Logic"- how they interpret their surroundings and react when their power or safety is challenged (9)."

A person may grow horizontally, but their current action logic or stage of vertical development remains unchanged. However, by understanding one's own action logic, one can improve their ability to lead. But first, one must understand what kind of leader one already is (9).

Leadership training, education and development are not part of the core curriculum for practice of Registered Dietitians. This phenomenon is true in the majority of clinical health care professions where the curriculum necessarily focuses on the natural sciences and their application in their application in the clinical arena. Anecdotal observation suggests that movement to a leadership position is often based on superior skills in the area of dietetic practice believing that this exceptional clinical or systems competence translates into an effective leader. From a leadership perspective, oftentimes this positions one for frustration and confusion in unchartered situations and in decision making capacity.

Prior studies on dietetic leadership have been limited to descriptive surveys identifying leadership style and/or characteristics (10). Vertical developmental stages or action logics of dietetic leaders have not been investigated, nor have there been any qualitative studies that explored the process of leadership development of existing dietetic leaders.

Through exploration of existent individual dietetic leaders, we expand our knowledge of the process of how dietitians develop into leaders, and by examining the stages of their development, have a clearer understanding of how they are currently positioned to lead. This exploration may serve to identify a model and strategies for preparing dietitians to be effective leaders in the future, and to improve leadership capacity while functioning in leadership roles.

Purpose of the Study

This study investigated leadership development of Registered Dietitians in nationally elected or appointed leadership positions of the American Dietetic Association. An explanatory sequential mixed methods design: participant selection model was used, and it involved collecting qualitative data after a quantitative phase.

In the initial quantitative phase of the study, current dietetic leaders were surveyed to determine their overall interest in leadership development and their willingness to participate in a sentence completion profile. The Sentence Completion Test International – Maturity Assessment Profile (SCTi-MAP) (11) was utilized to measure stages/action logics of leadership development and professional maturity.

In the qualitative grounded theory phase, semi-structured telephone interviews were used to generate a model grounded in the data from individuals representing different stages of maturity and leadership development (from the SCTi-MAP results). The qualitative phase was used to probe deeper into aspects of leadership development that could not be answered by the quantitative phase.

Objectives of the Study

The study had four major objectives:

1. To determine the interest of ADA nationally elected or appointed Registered Dietitians in leadership development.

2. To determine demographic characteristics of existent ADA dietetic leaders.

3. To determine stages/action logics of leadership and maturity development of elected and appointed ADA leaders in dietetics.

4. To generate a theory/model of leadership development of Registered Dietitians.

Research Questions

Quantitative Research Question

1. What is the level of interest in leadership development among Registered Dietitians who are ADA members?

2. What are the demographic characteristics of dietitians in nationally elected and appointed leadership positions of the ADA?

3. What are the leadership and maturity stages/action logics of elected and appointed ADA dietitian leaders?

Qualitative Research Questions

Central Question

1. How do Registered Dietitians develop as leaders?

Sub Questions

1. What influenced or caused this phenomenon to occur?

2. What strategies were employed during the process?

3. What was central to the process?

4. What obstacles, if any, were present?

5. What consequences occurred?

6.   What is the theory or model that explains the process of leadership development?

Mixed Methods Question

What theory explains the process and stages of leadership development of existent

Registered Dietitian leaders who are ADA members?

REVIEW OF THE LITERATURE

This literature review will focus on three content areas: a brief discussion of traditional leadership theory, constructive developmental theory, and leadership studies in dietetics. The section on leadership theory will be a limited review with reference to specific leadership theories. Similarities of authentic leadership will be linked to constructive developmental theory.

Constructive developmental theory will examine ego development, the relationship with spiral dynamics and Action Logics, and the integration of developmental theory with leadership ability and effectiveness. Developmental theory will be symmetrized with leadership capacity and professional maturity of Registered Dietitians. Perspectives on leadership development and leadership needs of dietitians will be included in the discussion on leadership studies in dietetics.

Leadership Theory

This review will not be comprehensive in nature, but will feature some of the more prominent theories on leadership. The intent is only to highlight leadership evolution from a philosophical and scientific perspective, since the focus of this study is not on the traditional variables, but rather on how one makes sense of, or constructs meaning about, one's environment and experiences. Gregoire and Arendt's article *Leadership: Reflections over the Past 100 Years* provides an annotated review of traditional leadership theory (10).

From Machiavelli's *Prince* and Thomas Caryle's *The Hero as King* characteristics that attribute to leadership effectiveness have been documented (4). In 1943

Maslow proposed a theory of motivation where human needs are organized into a hierarchy of relative importance, and behavior is determined biologically, culturally and situationally by unsatisfied needs (12). An alternative to Maslow's theory was posited by Alderfer seeing human needs as a threefold conceptualization: existence, relatedness and growth (E.R.G.):   lower level satisfaction not being a pre-requisite for higher order needs (13).

The Theory Y leadership model charges leaders with the responsibility to create opportunities, release potential, remove obstacles, encourage growth, provide guidance, and make it possible for people to become their very best (14). McClelland introduced n Ach score – an individual's need for achievement – which motivates a person to always do better as opposed to an Aff – an individual's need to affiliate: those with a higher n Aff have a stronger need to be with someone than to excel at a task – the n Ach (15). Path Goal Theory identifies the major function of the leader to be enhancement of subordinate expectancies (e.g. higher pay, recognition, sense of accomplishment) through four leader behaviors : 1) supportive leadership : considering subordinates needs; 2) directive leadership: providing specific guidance with rules and procedures; 3) participative leadership: taking subordinate opinions and suggestions into consideration and 4) achievement-oriented leadership: setting challenging goals, emphasizing excellence (16).

Stodgill introduced the concept of Trait Theory which is based on personal characteristics (i.e. personality, self-confidence, emotional maturity, needs, values) and skills (technical, interpersonal and conceptual) which, while having the potential to increase the effectiveness of the leader, provide no guarantee, and that these personal

characteristics of the leader must bear some relevant relationship to the characteristics, activities and goals of the followers (17).

Models on decision making were developed by Vroom – A – autocratic, C- consultative and G – Group (18), as well as in the Single Loop and Double Loop theory by Argyris (19).

Linkages between the leader and followers are found in leadership approaches of the Vertical Dyad (20); charismatic leadership, first described by Weber, where the leader has a *duty* and must benefit the follower or the charismatic authority will disappear (21); Greenleaf identified servant leadership where service to others is the highest priority (22).

Transactional and transformational leadership, while maintaining distinctive characteristics – transactional not binding the leader and follower together in pursuit of a mutual higher purpose; and transformational where the leader and followers engage with each other and their purpose becomes fused – remain inseparable from followers needs and goals (23). In situational leadership the leader adapts leadership behaviors to features of the situation and the followers (24).

Gardner describes followership where followers are the pulse of a leader's success or failure (25); and full range leadership seen by Bass as a combination of transactional and transformational leadership – where transactional is for lower order exchanges and transformational is for higher order exchanges including the 4 "I's": idealized influence, inspirational motivation, intellectual stimulation and individualized consideration. Transformational leadership does not replace transactional leadership but augments it (26).

In 1998 Goleman applied the concept of emotional intelligence to leadership. He posited that the five concepts of emotional intelligence – self-awareness, self-regulation, motivation, empathy and social skill – were the sine qua non of leadership (27).

Collins described a 5 level hierarchy of leadership capabilities: Level 1: highly capable individual, Level 2: contributing team member, Level 3: competent manager, Level 4: effective leader, and Level 5: executive. The Level 5 leader does not need to progress through each level to reach Level 5, but does require the capabilities of all the lower levels as well as the Level 5 characteristics of personal humility and professional will (28).

Kuhnert and Lewis discussed antecedents of motivational states and personality differences that give rise to transactional and transformational leadership. They utilize constructive developmental theory which illustrates *how* humans understand and interpret their world which shapes their experiences and impacts the way they construct meaning during the course of their lives. Leaders in Stage 2 of development are defined by their agenda and lack the ability to reflect on their goals. Stage 3 leaders are able to override personal needs and coordinate their needs with others. Stage 4 leaders are transformational and able to operate from a personal value system that transcends their agenda and loyalties, and act according to values of integrity, self respect and equality (29).

Conger believes that "charismatic leaders are *meaning makers*. They pick and choose from the rough materials of reality to construct pictures of great possibilities. Their persuasion then is of the subtlest kind, for they interpret reality to offer us images of the future that are *irresistible (30*: italics in original)."

Creators of a new construct, authentic leadership, argue that existing frameworks are insufficient for developing future leaders (31–33). They define authentic leaders as "those who are deeply aware of how they think and behave and are perceived by others as being aware of their own and others' values/moral perspectives, knowledge and strengths; aware of the context in which they operate; and who are confident, hopeful, optimistic, resilient and of high moral character (32)."

Truly authentic leaders have also been described as knowing "the true north of their moral compass… and have to understand themselves and the passions that animate their life stories (34)." If 21st century leadership is being re-defined by the authentic construct where leaders *know* who they are, it would appear that there are implications of the integration of constructive developmental theory, of meaning making and story-telling, with developing future leaders.

Constructive Developmental Theory

This part of the review will examine and compare the constructive developmental frameworks of Piaget, Loveinger, Kegan, Beck and Cowan's Spiral Dynamics and Torbert and Cook-Greuter 's Action Logics. Constructive developmental theory has at its origins Jean Piaget's stage theory of cognitive development which centers on the process of how human beings "come to know," and the stages of mental growth we travel through acquiring this ability of "abstract symbolic reasoning (35)."

Piaget's work was by observation of children of increasing age, and how they responded and made sense of their experiences. He determined that as children grow in age, they learn to think more abstractly and that their reasoning changes in a predictable manner. He concluded that people "do not merely react to their environment, but that

they seek out experiences, actively experiment with them, and interpret them: that is, they construct their meaning….” He was also cognizant of the fundamental role of language in the construction of meaning and mastery of life (7).

In *The Origins of Intelligence in Children* he identified four increasingly complex and integrated stages of human development occurring in a linear hierarchical sequence (36). As described by Huitt and Hummel (35), these four stages of cognitive development included:

1. **Era I - Sensorimotor Stage** (Infancy, age 0-2). Intelligence is demonstrated through motor activity without the use of symbols. Knowledge of the world is based on physical interactions/experience with the development of object permanence (memory) at about 7 months of age. Some symbolic (language) abilities are developed at the end of this stage.

2. **Era II - Pre-Operational Stage** (Toddler and Early Childhood, age 2-5). Intelligence is demonstrated through the use of symbols, language use matures, memory and imagination are developed. Thinking is done in a non-logical, nonreversible manner. Egocentric thinking predominates.

3. **Era III - Concrete Operational Stage** (Elementary and Early Adolescence, age 6– 10). Intelligence is demonstrated through logical and systematic manipulation of symbols related to concrete objects. Operational thinking develops (mental actions that are reversible). Egocentric thought diminishes.

4. **Era IV -Formal Operational Stage** (Adolescence and Adulthood, age 11 to adulthood). Intelligence is demonstrated through the logical use of symbols related to abstract concepts. Early in this period there is a return to egocentric thought. Many people do not think formally during adulthood, and only 35% of high school graduates

in industrialized countries obtain formal operations.

Jane Loveinger designed the highly validated *Washington University Sentence Completion Test* as a psychometric tool measuring the stages of ego development (37, 38). Loveinger believed that ego development was a lifelong process, and, dependent upon language content and structure, verbal responses to the 36 sentence stems were predictive of one's meaning making capacity, concept of reality and developmental stage. She described a nine stage theory of ego development as follows (39):

- **Stage 1. Pre-social Symbiotic Stage.** Infancy stage focused on gratifying immediate needs.

- **Stage 2. Impulsive Stage**. Begins with toddlers but some adults may actually remain in this stage focused on bodily feelings, basic impulses and immediate needs. Dependent, demanding and egocentric. Thinking is simplistic and self centered.

- **Stage 3. Self Protective Stage.** Early and middle childhood, but, again, some adolescents and adults may remain at this stage. Tend to be exploitive, manipulative, externalizing blame, wary of what others want, fear of being caught.

- **Stage 4. Conformist Stage.** Can first emerge around five or six years of age, but is most common around middle or junior high school. Conform to external rules, shame and guilt for breaking rules. Strong sense of need to belong with emphasis on social acceptability and approval.

- **Stage 5. Conscientious – Conformist or Self Aware Stage.** Beginning of self evaluation and self criticism. Aware of self in relation to the group, as being

unique as well as uniqueness of others. Begin to question right and wrong, mortality, morality and their views as opposed to parental views.

- **Stage 6. Conscientious Stage.** Continue self reflection and critique. Further differentiation of feelings and appreciation of other's with empathy and concern in relationships. Behavior is guided by self –evaluating standards with evidence of guilt if these standards are violated.

- **Stage 7. Individualist Stage**. Develops a broader respect for the autonomy of self and others, but at the same time an awareness of conflicting feelings and wishes with unlikely resolution of these inner conflicts.

- **Stage 8. Autonomous Stage.** Relationships are appreciated for the uniqueness of the individual and as an interdependent system of mutual support. There is greater tolerance for ambiguity, and conflicts are easier to accept and to cope with. This stage cherishes one's own and others autonomy.

- **Stage 9. Integrated Stage.** Has a full and complete sense of identity. Not only tolerates but is able to reconcile many inner conflicts and accept those that are unsolvable or unattainable. Fewer than 1% of the population attains this stage of development.

The majority of adults in the United States are found in the Conformist, Self Aware and Conscientious Stages of Loevinger's stage model (40). Ego development theory also supports the sequential hierarchical integration of greater and greater complexity of cognitive, affective and behavioral contexts of being. Finally, as described by Cook-Greuter: "A higher stage does not merely contain a more complex matrix of the content

and structure of the prior stage, but *transforms [Emphasis mine]* the previous way of looking at reality and offers a broader or deeper, more integrated perspective (7)."

Robert Kegan in *The Evolving Self* describes a five stage model of orders of consciousness with four transitional stages between each major stage (41). His instrument, *The Subject/Object Interview* (42) identifies the primary stage as well as the transitional stage demonstrating the loss of influence of the old stage as the new stage gains influence (43). The terms *Subject* and *Object* are used in an evolutionary sense as a meaning constitutive activity where "subject – object relations emerge out of a lifelong process of development: a succession of qualitative differentiations of the self from the world (41)".   As described by Victor, "The holistic being (body, brain, mind, spirit, soul) is modeled as two interacting sub-system, called *Subject* (SELF) and *Object* (WORLD) (43)." Kegan's "world" is what the mind/brain constructs – not the physical world or universe as we commonly know it. A primary objective of the interview is to differentiate between one of four categorical perspectives: 1) what a person knows, and knows they know, 2) what a person knows, but doesn't know they know, 3) what a person doesn't know, but knows they don't know, and 4) what a person doesn't know, and doesn't know they don't know.

Kegan's Orders of Consciousness range from Stage 0 to Stage 5 with the underlying structure of subject vs object - S vs O:

- **Stage O – Incorporative :** S - Reflexes (Sensing , Moving)

  O – None

- **Stage 1 – Impulsive :** S - Impulses, Perceptions

  O - Reflexes (Sensing, Moving)

- **Stage 2 – Imperial:** S - Needs, Interests, Wishes

  O - Impulses, Perceptions

- **Stage 3 – Interpersonal:** S - The interpersonal, Mutuality

  O - Needs, Interests, Wishes

- **Stage 4 – Institutional:** S – Authorship, Identity, Psychic Administration, Ideology

  O – The Interpersonal, Mutuality

- **Stage 5 –Interindividual:** S - Interindividuality, Interpenetrability of Self Systems

  O – Authorship, Identity, Psychic Administration, Ideology

As one evolves from one stage to another, what was subject then becomes object. In administering the Subject-Object Interview, the interviewer must be at a higher stage than the person being interviewed. The model does not allege that Stage 5 is the final stage, but rather that higher stages have yet to be recognized. Combining biologist Richard Dawkins concept of "Memes" and psychologist Clare Graves *Levels of Human Existence,* Beck and Cowan constructed their framework of Spiral Dynamics. The spiral imagery is reflective of the human spiral as it evolves from lower to higher levels of complexity. "Each upward turn of the spiral marks the awakening of a more elaborated version on top of what already exists. The human Spiral, then, consists of a coiled string of value systems, world views, and mindsets, each the product of its times and conditions (44)." "Memes" are considered the DNA counterpart of our psycho-social system; are central to our personality; impact entire civilizations, corporate cultures, belief systems, and decision making processes. There are eight principle memes attached to the Spiral that act at individual, organizational and societal levels. Memes are described in terms of colors in an ascending order as follows (44):

Description	Color	Basic Concerns
Holistic – Global	Turquoise	Life and Harmony
Integrative - Ecological	Yellow	Flexibility & Natural Flows
Sensitive – Humanistic	Green	Equality & Community
Strategic - Materialistic	Orange	Autonomy & Manipulation
Purposeful - Saintly	Blue	Meaning & Order
Powerful - Impulsive	Red	Dominance & Power
Magical – Mystical	Purple	Safety
Basic – Instinctive	Beige	Survival

There are two tiers to the Spiral. The first tier is composed of the beige, purple, red, blue, orange and green memes, and the second tier, the yellow and turquoise memes, is also inclusive of all the memes in tier one. Beck and Cowan state that in this increasingly complex geopolitical environment, new leadership from the yellow and turquoise memes will be needed to provide the insight essential for dealing with this complexity and forging new opportunities.

In defining human development, Cook-Greuter makes the distinction between horizontal and vertical growth. Horizontal or lateral growth occurs through traditional schooling, training, and life - long learning. Vertical growth, on the other hand, involves transformations of consciousness; seeing the world through new eyes; changing our

interpretations of experience and our views of reality (45). This distinction between
horizontal and vertical growth is paramount to understanding that studying and learning
about developmental theory are not enough to enable a person to transform. It is only
through association with others who are at later stages of development than us and
through "Action Inquiry" and self reflection that one is able to make this transition.
Action Inquiry is defined by Torbert as "a lifelong process of transformational learning…
a way of learning anew, in the vividness of each moment, how best to act now….. action
inquiry requires making ourselves, not just others, vulnerable to inquiry and to
transformation (46)." It is the integration of self exploration and action in every moment:
that is acting and reflecting *at the same time* (47, 48).

   Cook-Greuter offers the following tenets of constructive developmental theory:

1. Developmental theory describes the unfolding of human potential towards
    deeper understanding, wisdom and effectiveness in the world.

2. Growth occurs in a logical sequence of stages or expanding world views from
    birth to adulthood. This movement is illustrated as an ever widening spiral.

3. Worldviews evolve from simple to complex, static to dynamic, egocentric to
    socio-centric to world-centric.

4. Later stages are reached only by journeying through earlier stages. Once a stage
    has been traversed, it remains a part of the individual's perspective experience and
    knowledge, even when more complex later stages are adopted.

5. Each later stage in the sequence is more differentiated, integrated, flexible and
    capable of functioning in a rapidly changing and complex world.

6. People's stage of development influences what they notice or can become aware

of and therefore, what they can describe, articulate, influence and change.

7. As development unfolds, autonomy, freedom, tolerance for difference, ambiguity, flexibility, reflection and skill in interacting with the environment increase while defenses decrease.

8. A person who has reached a later stage can understand earlier world-views, but a person at an earlier stage cannot understand the later ones.

9. Development occurs through the interplay between person and environment. The depth, complexity and scope of what people notice can expand throughout life, but our knowledge and understanding is always partial and incomplete (45)."

Action Logics are those steps or stages of an individual's journey of mental growth in adulthood; or how one makes meaning of themselves and the world. A person's action logic is considered to be their center of gravity: that place where a person is most likely to reason and spontaneously respond or interpret their experiences. Adapting this existing theory, Torbert developed the Leadership Development Framework, and collaborated with Cook – Greuter to utilize her revision and expansion of Loveinger's Washington University Sentence Completion Test (WUSCT) to assess leadership capacity of professionals in organizations by identifying their Action Logics (45, 46). The Sentence Completion Test International (SCTi) was first referred to as the Leadership Development Profile (LDP), but with further revision is now known as the Maturity Assessment Profile (MAP) (11). The Action Logics' stages are graduated in an ascending order into three main tiers: Pre Conventional, Conventional, and Post Conventional. There actually is a fourth tier, the Transpersonal, but it is so rare that it will not be part of this discussion.

Since the SCTi-MAP is based on Cook-Greuter's modifications of Loevinger's WUSCT, the Action Logic stages closely correspond to Loevinger's developmental stages. There are three primary categories: Pre Conventional, Conventional and Post Conventional. Within these categories are eight Stages which are expressed in a graduated numerical scale from 2 to 5/6 as well as described in Action Logic nomenclature. The assigned Stage and Action Logic are interchangeable and illustrated as follows:

Category	*Stage*	*Action Logic*
Pre Conventional	Stage 2	Impulsive
	Stage 2/3	Opportunist
Conventional	Stage 3	Diplomat
	Stage 3 / 4	Expert
	Stage 4	Achiever
Post Conventional	Stage 4 / 5	Individualist
	Stage 5	Strategist
	Stage 5 / 6	Magician/Alchemist

Most people (75–80%) are identified within the Conventional tier at the Diplomat, Expert and Achiever levels, with only about 10–20% within the Post Conventional tier at the Individualist, Strategist and Magician/Alchemist Stages (45).

Descriptions of Action Logics/Stages are as follows:

- **Impulsive/ Stage 2:** beginning use of language, emerging ego, governed by use of impulses, cognitive simplicity; concerned with safety and gratification of basic needs. First person perspective. First stage measured by the SCTi-MAP.

- **Opportunist/ Stage 2/3**: Self protective stage. Life is a zero-sum game – " I win you lose" mentality. Manipulative, exploitive, controlling and self-serving. Little insight into themselves or others.

- **Diplomat/ Stage 3:** Early adolescent mind frame, after the age of 12. Self identity is defined by group relationships and "them" against "us". Judge people by the way they look. Dependent upon the group for identity, not yet a true sense of self apart from the group. Second person perspective.

- **Expert/ Stage 3/4:** After 12 years of age. Begin to reflect upon the self with some introspection and self comprehension. Want to be known for their differences rather than identifying solely with the group. See themselves as "knowing it all." May have compulsive or perfectionist tendencies. Identify and distinguish traits in themselves versus others. Third person perspective.

- **Achiever/ Stage 4:** Twelve years of age and older. Target stage of mental capacity in Western culture – rationally competent and independent. Interested in reasons, causes, goals, consequences and effective use of time. Able to comprehend their past and present feelings with an emphasis on the future. Support the scientific method of inquiry to discover truth. Formal operations and abstract rationality are predominant. Agree to differ with others, and can be part of many groups with differing philosophies. Expanded third person perspective.

- **Individualist/ Stage 4/5**: Focus is on the immediate present. See from a fourth person perspective. Depending upon the observer, objects may have different meanings at the same time. Try to make sense of themselves. Favor psychological approaches over merely logical ones. Don't need to analyze and know the

answers to everything. Distrust of the scientific outlook. Only the subjective can be trusted. Seek to respect and understand others perspectives rather than impose their own on others.

- **Strategist/ Stage 5:** Strong autonomous self through self determination and self actualization. Able to perceive systemic patterns, and can understand multiple interconnected systems of relationships and processes. Capable of integrating many disparate parts of themselves. Understand that meaning is an interpretation one brings to experience. Expanded fourth person perspective. Less cynical and distrusting than individualist. More tolerant and spontaneous than other stages. Each person is responsible for own self-fulfillment.

- **Magician/Alchemist / Stage 5/6:** Ego becomes transparent to itself. Self awareness deepens and reasoning becomes further differentiated with access to intuition, feelings, body states, dreams and transpersonal materials which become important for meaning making of experiences and life. Aware of the splits and paradoxes inherent in rational thought, and the limitations and gift of language. Fifth person perspective (49).

Using the SCTI-LDP instrument, a study of 4310 subjects in varying levels of management revealed 5% at the Opportunist stage; 12% at the Diplomat stage; 38% at the Expert stage; 30% at the Achiever stage; 10% at the Individualist stage; 4% at the Strategist stage and 1% at the Magician/Alchemist stage (7, 9). Fisher and Torbert further demonstrated that over a two- to four- year period, 22 of 24 subjects involved in a voluntary group led by a post conventional thinker, were able to transform from conventional to post conventional action logics (50). Torbert also identified similar

results using the LDP as compared to Kegan's Subject – Object Interview with 58% of subjects scoring at Expert Stage; 35 – 36% at the Achiever stage and 6–7 percent at later Action Logics (46). A comparison of these five perspectives on cognitive development is found in Table 1.

Leadership Studies Using Constructive Developmental Theory

As previously alluded to, constructive developmental theory may extend beyond the meaning making domains of physicality, emotions, and morality to encompass professional competence and performance. Both Kegan and Torbert and associates resolve that it is how professionals *think* not what they *know* that determines their ability to tolerate complexity and ambiguity and defines their professional competence, (51-53).

Organizational management and psychology experts suggest that mental models necessary for 21st century leadership will require higher order thinking of the Post Conventional Strategist and Alchemist meaning making capacity (54). Rooke and Torbert supported this belief by examining the ego development stage of CEOs and their senior advisors. They discovered that the CEOs who were identified at the late Strategist stage implemented 15 progressive organizational transformations and became industry leaders, whereas those CEOs at the pre-Strategist level did not progress developmentally and lost personnel, industry standing and money (55).

Kuhnert and Lewis utilized Kegan's *Subject/Object* developmental framework to illustrate the differences in transactional and transformational leadership. Whereas transactional leadership involves an exchange between leaders and followers, Kegan's Stage 2 and Stage 3 levels of development are indicative of this leadership architecture.

Transformational leadership is manifested by an uncompromising value system of justice and integrity of the leader which enables them to resolve conflict based on their internal standards. This is reflective of Kegan's Stage 4 Order of Consciousness. They propose intriguing questions that prompt the need for longitudinal studies of leaders across the life span to observe leader's behaviors, development and relation to followers (56).

In a later article, Kuhnert and Russell propose combining Kegan's *Subject* (the process by which people make sense of their experience), *Object* (content of the experience that can be integrated by the individual) constructive developmental process with biographical data (bio-data) as a strategy where the bio-data help assess the subject-object relations that influence leaders meaning making and behavior, and consequently aid in personnel selection for leadership positions (57).

Lichtenstein, Smith and Torbert explore the concept of increasing ethical behavior at later stages of development. They demonstrate that each developmental stage has both positive (light) and negative (shadow) aspects to it, and accordingly caution that later stages may have profound negative ethical components (58).

Eigel and Kuhnert studied 21 top executives using Kegan's *Subject/Object* Interview identifying an adult developmental progression from Leadership Development Levels (LDL) 2 through 5. They found that LDL 4 leaders were positioned to lead others effectively, and looked for outside input to refine themselves. However, based on responses in the interviews, LDL 5 leaders were unequivocally positioned the best to lead effectively in an increasingly complex and dynamic environment, and most closely linked to Avolio's description of authentic leadership (8, 31).

A 2006 review article, T*he use of Constructive Developmental Theory to Advance the Understanding of Leadership* challenged the leadership research community to design studies demonstrating how "constructive developmental theory adds to the understanding of other leadership phenomena in which the leader's or followers' meaning making structure is hypothesized to play an important role…, and for more research on developmental movement (59)." It also mentions pursuing Wilber's four quadrant Integral Theory where development is understood from the interconnection of all quadrants: the internal self, the external self, the internal collective and the external collective to *research the development of social systems* (not just individuals) *that produce leadership* (59, 60).

A 2008 study by Harris and Kuhnert examined LDL levels using the Subject/Object interview and 360 degree feedback scores of 74 executives participating in an executive leadership developmental program. Findings demonstrated that leader effectiveness is better predicted by superiors and peers than by subordinates or oneself, and that leaders at higher LDLs are also more effective in leadership competencies such as leading change, managing performance, creating a compelling vision and catalyzing teams (61).

Strang and Kuhnert responded to the call for using constructive developmental theory to further leadership study by again investigating the framework as a predictor of 360 degree leader performance with the addition of personality which has made prior contributions to leadership study. Results demonstrated that the developmental model captures an aspect of leader performance rated by peers and subordinates distinct from the account of personality (62).

Leadership Studies in Dietetics

Leadership studies in dietetics have been very limited, and have primarily utilized various survey instruments to identify leadership characteristics and style. Schiller, Foltz and Campbell utilized The Life Styles Inventory with 893 dietitians attending a leadership seminar which demonstrated two dominant leadership styles: dependent style (insecure, indecisive, meekness, acquiescent); and self-actualized style (optimistic, confident, energetic, spontaneous) (63). The Visionary Leader Behavior Questionnaire identified self-perceived transformational leadership traits among clinical nutrition managers with lower scores from subordinates (64).

Mislevy, Schiller, Wolf and Finn used The Conditions for Work Effectiveness Questionnaire with clinical nutrition managers and found that dietitians with higher degrees of education, post baccalaureate, had greater access to opportunity and had higher empowerment scores (65). Ninety-one dietetic interns completed The Multifactor Leadership Questionnaire demonstrating self perceptions of transformational leadership (66). The Student Leadership Practices Inventory was administered to 238 undergraduate dietetic students and demonstrated a greater prevalence of leadership behaviors in students who were older and had previous leadership coursework and experience (67).

All of these studies suggest that strategies need to be designed to prepare dietitians for leadership positions (10). No prior research has discussed the process of leadership development using qualitative methods, nor investigated the stages of leadership from a constructive developmental perspective. Therefore we conducted this study in an attempt to uncover the process of leadership development of Registered Dietitians and to identify the levels of leadership maturity of existent dietetic leaders.

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Table 1. Comparison of Five Perspectives on the Spectrum of Cognitive Development

Piaget	Loveinger	Kegan	Spiral Dynamics	Torbert/Cook-Greuter
Sensorimotor Age 0 - 2 Motor activity/physical experience	**Pre Social/Symbiotic** Infancy Stage Gratifying immediate needs	**Stage 0 – Incorporative** S- Reflexes (sensing,moving) O - None	**Beige** Basic Instinctive Survival	
Pre-Operational Age 2 - 5 Egocentric thinking	**Impulsive** Begins with toddlers Self centered thinking Basic impulses, focused on bodily feelings	**Stage 1 – Impulsive** S – Impulses, perceptions O - Reflexes (sensing, moving)	**Purple** Magical-Mystical Safety	**Impulsive** Emerging Ego Use of impulses Safety & gratification 1st person perspective
Concrete Operational Age 6 - 10 Operational thinking develops	**Self Protective** Early and middle childhood Exploitive, manipulative	**Stage 2 – Imperial** S – Needs, interests, wishes O – Impulses, perceptions	**Red** Powerful –Impulsive Dominance and Power	**Opportunist** Self protective, self serving Manipulative, exploitive Controlling

	Conformist / Conscientious / Autonomous	Kegan Stage	Spiral Dynamics	Ego Development
	Conformist — Middle to Junior High School; Need for social acceptance & approval	**Stage 3 - Interpersonal** — S – The Interpersonal Mutuality; O – Needs, wishes, interests	**Blue** — Purposeful – Saintly Meaning and Order	**Diplomat** — Self identity defined by group relationships; 2nd person perspective
	Transition	*Transition*	**Orange**	**Expert** — After age 12; Begin to reflect on self with some introspection & self comprehension; 3rd person perspective
Formal Operational — Age 11 – Adulthood; Logical use of symbols related to abstract concepts	**Conscientious** — Beginning of self evaluation and self criticism; Empathy and concern In relationships	**Stage 4 - Institutional** — S – Authorship, psychic administration, identity, ideology; O – The Interpersonal Mutuality	Strategic – Materialistic Autonomy - Manipulative	**Achiever** — Rationally competent and independent; Formal operations & abstract rationality; Expanded 3rd person perspective
	Transition			
	Autonomous — Cherishes one's own and others identity; Greater tolerance for ambiguity	*Transition*	**Green** — Sensitive – Humanistic Equality and Community	**Individualist** — Try to make sense of self; Seek to respect & understand others' perspective; 4th person perspective

	Transition	*Transition*	
Strategist	Integrative-Ecological Flexibility and Natural Flows (**Yellow**)		**Integrated** — Full and complete sense of identity. Able to reconcile many inner conflicts and accept those that are unsolvable or unattainable
Strong autonomous self through self actualization. Expanded 4th person perspective			
Magician/Alchemist	Holistic – Global Life and Harmony (**Turquoise**)	**Stage 5-Interindividual** — S -Interindividuality, interpenetrability of self systems. O – Authorship, psychic administration, identity, ideology	
Ego becomes transparent to itself. Aware of splits and paradoxes in rational thought. 5th person perspective			

MANUSCRIPT I:

A Description of American Dietetic Association Leaders

A Description of American Dietetic Association Leaders

Abstract

Background: The 2004 Report on the American Dietetic Association (ADA), ADA Foundation, and Commission on Dietetic Registration identified career and leadership skill development as unmet needs of ADA member practitioners, nonmember practitioners and student members. Examining the demographics and stages of leadership development of existent dietetic leaders will provide insight into how dietitians develop as leaders, as well as how they are currently positioned to lead.

Objectives: To identify demographic characteristics and stages of leadership development of existent leaders in the American Dietetic Association.

Design: Phase one of an Explanatory Sequential Mixed Methods Design: Participant Selection Model.

Methods: Demographic data were collected via a mailed survey questionnaire. Participants who indicated on the returned survey willingness to continue to participate in the study were e-mailed a validated Sentence Completion Test International –Maturity Assessment Profile Research Version (2) (SCTi-MAP) to determine their stage of leadership development.

Subjects: Purposeful sample of Registered Dietitians who held a nationally elected or appointed leadership position in the American Dietetic Association in the fall of 2006 (n= 97).

Results: Eighty-six percent (n=83) responded to the survey questionnaire with 92% (n=79) rating the importance of dietitians being leaders as very important; 100% (n=83) believed that leadership ability can be developed; 79% (n=66) did not think that learning

about leadership through education and training was sufficient to help people transform into leaders; 78% (n=65) believed that leadership development is related to seeing the world through new eyes; 99% (n=82) think that there are stages of developmental growth in leadership, and 96% (n=80) think that leadership maturity evolves over time. Forty-six of the original 97 subjects completed the SCTi-MAP with a response rate of 47%. Of the 46, 87% (n=40) were identified at the Conventional level with 26% (n=12) at the Expert, Action Logic, Stage 3/4 and 61% (n=28) at the Achiever Action Logic Stage 4, and 13% (n=6) were identified at the Post Conventional Individualist Action Logic, Stage 4/5 of development.

Conclusions: All of the participants identified leadership development as a significant need for Registered Dietitians. The majority of the dietitians holding leadership roles were identified at the later stages of the Conventional level of development i.e. Expert and Achiever, with a minority crossing over into the Post Conventional level at the Individualist stage.

Introduction

Scientific knowledge and technical competence are defining characteristics of practicing dietitians; however opportunities to develop executive abilities, especially leadership, remain. The creation of the annual American Dietetic Association (ADA) Leadership Institute in 2003 represented an awareness of the need to invest in dietetic leaders (1). However, attendance at the Institute initially was by invitation only, as well as after the fact, when someone had been elected or appointed to a leadership role.

Actualization of quality leadership often remains elusive, disappointing and unsatisfactory suggesting that *something(s)* affects one's ability to lead (2). Leadership

research and theory have been defined based on objective measures such as traits, attitudes and performance, intellect, personality, appearances, relationships, competencies, values and standards, and situations and service. An alternative approach to understanding leadership growth and effectiveness is from a subjective developmental perspective.

Most growth in adults is horizontal – that is learning new skills, new methods, new facts, pursuing advanced degrees, whereas, subjective development is vertical which focuses on how people tend to reason and behave in response to their experience. Vertical development addresses questions such as: How do people interact? How does a person feel about things? How does a person think?

Developmental theory assumes that human beings actively make sense of experience; that we are meaning makers of our experience, creating maps of reality that change with development. This sequence of development is the same for all persons. No stage of the sequence can be skipped. However, most human beings do not grow through the entire spiral, but rather settle in the stage that is most familiar or most supported by the environment (3).

Constructive developmental theorists posit that "persons move through qualitatively different ways of knowing who they are, how the world works and how they know what they know (3)", and that "leaders as individuals develop over the life course and do so in predictable ways (4)." Most developmental psychologists agree that what differentiates leaders is not so much their philosophy of leadership, their personality or their style of management. Rather it is their internal "Action Logic" or how they interpret their surroundings and react when their power or safety is challenged (5)." A

person may grow horizontally, but their current Action Logic remains the same. Understanding one's own Action Logic or stage of vertical development can improve ability to lead. But first, one must understand what kind of leader one already is (5).

Therefore we conducted a study to 1) determine the demographic characteristics of existent dietetic leaders, and 2) to determine stages of leadership development of elected or appointed leaders in dietetics.

Methods

This investigation was the first phase of a mixed methods research study. Mixed methods studies incorporate quantitative and qualitative data collection procedures and analyses techniques in a single study in either parallel or sequential phases, and emphasize either a qualitative or quantitative aspect (6). The central premise for all mixed methods research is that the combination of quantitative and qualitative data provides a much richer and deeper understanding of the research problem than either method alone (7). The Explanatory Sequential Mixed Methods Design: Participant Selection Model was the mixed methods design of this study. The design was two-phased where the phases were conducted in sequence. Phase one data collection, which is quantitative, was collected first and analyzed, and then followed by phase two data collection, which is qualitative and connects to the results of the quantitative phase. The participant selection model utilizes the results of the quantitative data to purposefully select the participants for the in depth, follow up qualitative study (7). The qualitative phase of the study, to be reported independently, utilized grounded theory and consisted of semi structured telephone interviews with 25 leaders used to construct a leadership development model. The schema for both phases of the study is found in Figure 1. The study protocol was

approved by the Institutional Review Board of the sponsoring institution. Informed

consent was obtained by returning the survey, and a positive response to participate in the

sentence completion profile established consent for that part of the study.

Quantitative Data Collection and Analysis

Demographic Survey

The demographic characteristics of existent dietetic leaders were determined

using a survey of a purposeful sample of 97 Registered Dietitians who held a nationally

elected or appointed leadership position in the American Dietetic Association in the fall

of 2006. A twenty nine item researcher designed questionnaire was mailed to ADA

leaders including members of the Board of Directors, the House of Delegates

Professional Issues Team, the Chairs and Chair-Elects of the 29 Practice Groups and

appointed Chairs of eight national ADA committees. The questionnaire had been pre-

tested for face and content validity by a sample of eight Registered Dietitians, three

currently holding leadership positions in the American Dietetic Association. Minor

changes were suggested and incorporated in the final survey.

The four contact method of Dillman was used for the survey which was

conducted between October 20 and November 21, 2006 (8). Based on Dillman's formula

for determining sample size with a 3% sampling error; a 50/50 answer variation and a 95

% confidence interval, the sample size needed for precision was 86 (8). Due to the small

discrepancy between this number and the sample frame, all of the 97 persons were

surveyed with a simultaneous reduction in coverage and sampling error as well.

The survey solicited information about the importance of dietitians being leaders,

how leaders develop, leadership maturity over time, stages of developmental growth,

number and type of leadership positions held, years of experience in dietetic practice,

primary areas of dietetic practice, prior attendance at the ADA Leadership Institute, and

educational background. It also asked for their participation in completing a sentence

completion profile to identify their individual leadership development stage.

Sentence Completion Test International-Maturity Assessment Profile Research

Version (2) (SCTi-MAP)

To determine the leadership development stage of each respondent, an internet

based instrument, the Sentence Completion Test International-Maturity Assessment

Profile (SCTi-MAP) was used. This is Cook-Greuter's revision and expansion of

Loevinger's validated Washington University Sentence Completion Test (WUSCT)

which was originally designed to measure ego development (9-11). The foundation of the

SCTi-MAP is constructive developmental theory, which is based on an evolutionary

spiral of lived human experience and how one makes sense of those experiences (12, 13).

The spiral illustrates vertical human development. As development spirals upward

our interpretations of experience change and our views of reality and awareness are

transformed. There is a logical sequence of growth through the developmental stages,

and one lives through the earliest stages before progressing to later stages. Once one has

journeyed through an earlier stage, it becomes a part of that person. Vertical

development moves from simple to complex with a demonstrated increase in autonomy,

flexibility, tolerance for differences and ambiguity, and a simultaneous decrease in

defenses (13). A visual model of this spiral of human development is found in Figure 2.

There are three primary categories of vertical development: Pre Conventional,

Conventional and Post Conventional (3, 5, 12). Within these categories are eight Stages

which are expressed in a graduated numerical scale from 2 to 5/6 as well as described in

Action Logic nomenclature. The assigned Stage and Action Logic are interchangeable

and illustrated as follows:

Category	*Stage*	*Action Logic*
Pre Conventional	Stage 2	Impulsive
	Stage 2/3	Opportunist
Conventional	Stage 3	Diplomat
	Stage 3/4	Expert
	Stage 4	Achiever
Post Conventional	Stage 4/5	Individualist
	Stage 5	Strategist
	Stage 5/6	Magician/Alchemist

These stages are identified as moving from early to later (*not* lower to higher)

stages of development where the pre-conventional are seen as the earliest tier of

development and the post conventional as the later stages of development. These stages

reflect a sequence of how mental models evolve over time. Each new level contains the

previous ones as subsets, and persons must move through the sequence in order without

skipping any level.

The SCTi-MAP shifts from viewing people mostly as different types (i.e. Meyers

Briggs) to also considering differences in the level of their meaning making capacity. It

focuses on how professionals tend to reason and behave in response to their experience,

and measures cognitive, affective and behavioral aspects of being (13).

The profile consists of thirty six sentence stems such as: Raising a family…, A

good boss…, If I had more money…, etc. Both content (meaning) and sentence structure

are significant. Participants are requested to complete the 36 sentence stems in any way

they wish. There are no right or wrong answers. Completion of the form takes about 30 to 45 minutes (9).

The SCTi-MAP was sent on a rolling basis via the Internet from November 2006 through January 2007 to the 63 (65%) of the 97 participants who indicated on their return survey that they were willing to complete it. Four reminder notices were sent, and 46 (73%) of the 63 participants completed the profile.

Scoring of the profile is a three-step process. Initially each sentence is scored individually with responses compared to a manual of standard responses for each developmental stage or Action Logic. A frequency distribution of item ratings is created and analyzed with the determination of a preliminary score, followed by the calculation of the total weighted score (TWS). Finally, the total protocol rating (TPR), which includes the quality of the responses and the reading of the whole protocol, assigns the developmental stage demonstrated by the subject (10, 12, 14).

Profiles were individually scored by two trained experts. Inter-rater reliability was enhanced by a review of the two scores by the originator of the SCTI-MAP leading to the final TPR score. Participants were notified by standard mail with an interpretation of their score and stage of development as illustrated in Figure 3.

Results and Discussion

Eighty- three responses (86%) to the demographic survey were received. ADA leaders were predominantly female with three male respondents. All respondents stated that leadership was either important or very important for dietitians. Fifty-eight respondents (70%) assumed their first leadership roles before they reached thirty years of age but four (5%) assumed their first leadership role after the age of 41 and another four

(5%) after age 46. Respondents held variable numbers of professional leadership

positions with nine (11%) holding one to three, 20 (25%) holding four to seven, 14 (18%)

holding eight to ten, ten (13%) holding 11 to 15, and 28 (34%) holding 16 or more

professional leadership roles.

Sixty-seven respondents (82%) had a Master's degree and 17 (21%) held a PhD

degree, while 33 (41%) were certified in specialty practice. Half of the ADA leaders had

20 – 30 years of work experience in dietetics. Sixty-four (77%) had attended the ADA

Leadership Institute. Thirty one percent (n=27) practiced in clinical nutrition, while 12%

(n=10) practiced in food systems management. Six percent (n=9) practiced in public

health, 9% (n=8) in business, while 42% (n=36) practiced in other areas including

education, research and corporate wellness. Sixty-eight (82%) had held manager, director

or department chair positions, and 66 (81%) had held other leadership positions. Table 1

illustrates characteristics of the respondents.

Responses to questions on leadership development that related to constructive

developmental theory (Table 2) demonstrated that ADA leaders predominately agreed

that the concepts of self awareness, transformation of consciousness, evolution of

leadership over time, and stages of leadership development are essential components to

the process of leadership development.

Sixty-three respondents to the survey agreed to complete the leadership

development profile and 73 % (n=46) did so. Table 3 shows the stages of the 46 leaders.

Table 4 provides examples of scored responses by stage. Leadership development profile

results were available from 47 % of the original sample of ADA leaders. Eighty seven

percent (n =40) were rated at the Conventional level with 26 % (n=12) at the Expert stage

and 61 % (n=28) at the Achiever stage. Thirteen percent (n=6) scored at the Post

Conventional level with all six identified at the Individualist stage. Total weighted scores

ranged from 205–271 with a mean score of 214($\pm$ SD) $\pm$ 6.20 at the Expert stage, 235 $\pm$

6.27 at the Achiever stage, and 262 $\pm$ 9.50 at the Individualist stage. Age ranges were

36–65 years with a mean age of 52.3 $\pm$ 6.73 at the Expert level; 38–61 years of age and a

mean of 50 $\pm$ 5.62 at the Achiever stage; and 41–63 at the Individualist stage with a mean

age of 53 $\pm$ 8.39. For the entire group, the total weighted scores ranged from 205 – 271

with a mean of 232.73 $\pm$ 15.92, and an age range of 36–65 with a mean age of 52.23 $\pm$

6.20. None of the ADA leaders scored at the Pre-Conventional Opportunist Stage or at

the Conventional Diplomat Stage. No one scored at the Post Conventional levels of

Strategist or Alchemist/Magician.

By comparison, a sample of 4310 subjects consisting of a wide array of

professions and levels including MBA students, nurses, first level supervisors,

entrepreneurs, consultants, and middle and senior managers from profit, not-for-profit

and government organizations from the United States and the United Kingdom identified

5% at the Opportunist Stage; 12% at the Diplomat stage; 38% at the Expert stage; 30% at

the Achiever stage; 10% at the Individualist stage; 4% at the Strategist level and 1% at

the Alchemist/Magician level (3, 5).

The present study demonstrated more than twice the percentage at the Achiever

stage and none at the Diplomat stage at the Conventional level, and 3% more at the

Individualist stage at the Post Conventional level than the former study.

Authentic leaders are defined by Avolio, Luthans and Walumbwa as "those who

are deeply aware of how they think and behave and are perceived by others as being

aware of their own and others' values/morals, perspectives, knowledge and strengths; aware of the context in which they operate; and who are confident, hopeful, optimistic, resilient and of high moral character (15)." This self awareness of authentic leaders is an emerging process consistent with constructive developmental theory" moving through different ways of knowing" and developing over the life course", and correlates with the post conventional Action Logics of the Strategist, Stage 5 and the Alchemist, Stage 5/6.

Published research on leadership in dietetics is very limited, and primarily addresses leadership style using a variety of survey instruments. Schiller, Foltz, and Campbell utilized The Life Styles Inventory with 893 dietitians attending a leadership seminar. Results demonstrated two dominant leadership styles: dependent style (insecure, indecisive, meek, acquiescent), and self-actualized style (optimistic, confident, energetic, spontaneous) (16). Transformational leadership traits were self-perceived by clinical nutrition managers with the Visionary Leader Behavior Questionnaire. However, their subordinates' scores were lower for these managers (17). Mislevy, Schiller, Wolf and Finn used The Conditions for Work Effectiveness Questionnaire with clinical nutrition managers and found that dietitians with higher degrees of education, post baccalaureate, had greater access to opportunity and had higher empowerment scores (18). In a study by Burzminski, 91 dietetic interns completed the Multifactor Leadership Questionnaire demonstrating self perceptions of transformational leadership (19). The Student Leadership Practices Inventory was administered to 238 undergraduate dietetic students and demonstrated greater prevalence of leadership behaviors in students who were older and had previous leadership coursework and experience (20). Gregoire and Arendt summarized these and all other dietetic leadership studies to date in a 2005 review

article, and suggested that more information is needed about how dietitians develop as leaders (21).

The strong presence of Stage 4/Achiever among ADA leaders is consistent with a profession that is scientifically based. Stage 4 is the latest stage in conventional adult development before moving to the post conventional arena. It is rational and deliberate – goal and outcome focused. It relies on an objective scientific approach to the world where cause and effect are honored. It is synonymous with Piaget's Era IV stage of physical-cognitive development from age 11 to adult (22).

Meaning making capacity is not necessarily age related as realized in the SCTi-MAPs of the three youngest respondents. One scored as a 3 / 4/Expert, one as a 4/Achiever, and one as a 4/5/Individualist. However, the one who scored as a 4/5 had her first leadership experience under the age of 25 and had held 8 – 10 leadership positions, and the other two between the ages of 26 – 30 years holding 4 – 7 leadership roles.

Conclusion

ADA leaders agreed that leadership development is a need of Registered Dietitians. The participants began to accept leadership positions at various stages of their professional careers, with over half holding from eight to sixteen or more professional leadership roles. The majority of participants had an advanced degree, and had attended ADA's Leadership Institute.

The occurrence of the majority of ADA leaders at Stage 4 supports the concept of comfort in the environment and embedded culture of the dietetics profession. Stage

identification is a structural, cultural way of being. The emergence of Stage 4/5 post -

conventional thinkers challenges the status quo to new and/or different ways of being and

 seeing the world.

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Figure 1: VISUAL DIAGRAM

EXPLANATORY SEQUENTIAL DESIGN: PARTICIPANT SELECTION MODEL

Phase One

Phase Two

Quan Data Collection

Procedures:
- Demographic Survey n = 97 October-through November 2006
- Sentence Completion Test-Maturity Assessment Profile (SCTi-MAP) n = 46 November 2006 through January 2007

Products:
- Numerical item scores
- Leadership development scores

Quan Data Analysis

Procedures:
- Survey validity
- SCTi=MAP Inter-rater reliability
- October 2006 – July 2007

Products:
- Descriptive statistics
- Leadership development stages

Quan Results

Procedures:
- Categorize results of SCTi-MAP from early to later stages of development

Products:
- n = 46
- Stage 3/4 – n = 12
- Stage 4 – n = 28
- Stage 4/5 – n = 6

Qual Participant Selection

Procedures:
- Select participants based on SCTi-MAP results and agreement to be interviewed.

Products:
- n = 25
- Stage 3/4 – n = 7
- Stage 4 – n = 14
- Stage 4/5 – n = 4

Qual Data Collection

Procedures:
- One-on-one semi-structured telephone interviews August through November 2007

Products:
- transcripts

Qual Data Analysis

Procedures:
- Grounded Theory
  o Open Coding
  o Axial Coding
  o Thematic Development

Products:
- Description of themes properties & sub-categories
- Axial Coding Paradigm
  - Central phenomenon
  - Causal conditions
  - Context
  - Strategies
  - Intervening conditions
  - Consequences

Qual Results

Procedures:
- Selective Coding

Products:
- Theory generation of process of leadership development of RDs

Using Grounded Theory model to explain Quan results

Procedures:
- Relates stages of leadership development with categories identified in the Qual phase.

Products:
- Discussion of findings

Figure 2.Spiral of Human Development in the Leadership Development

      Framework .

POSTCONVENTIONAL	5/6 MAG
STRA 5	4/5 IND
CONVENTIONAL	
ACH 4	3/4 EXP
PRECONVENTIONAL	DIP 3
	2/3 OPP
IMP 2	
Birth	
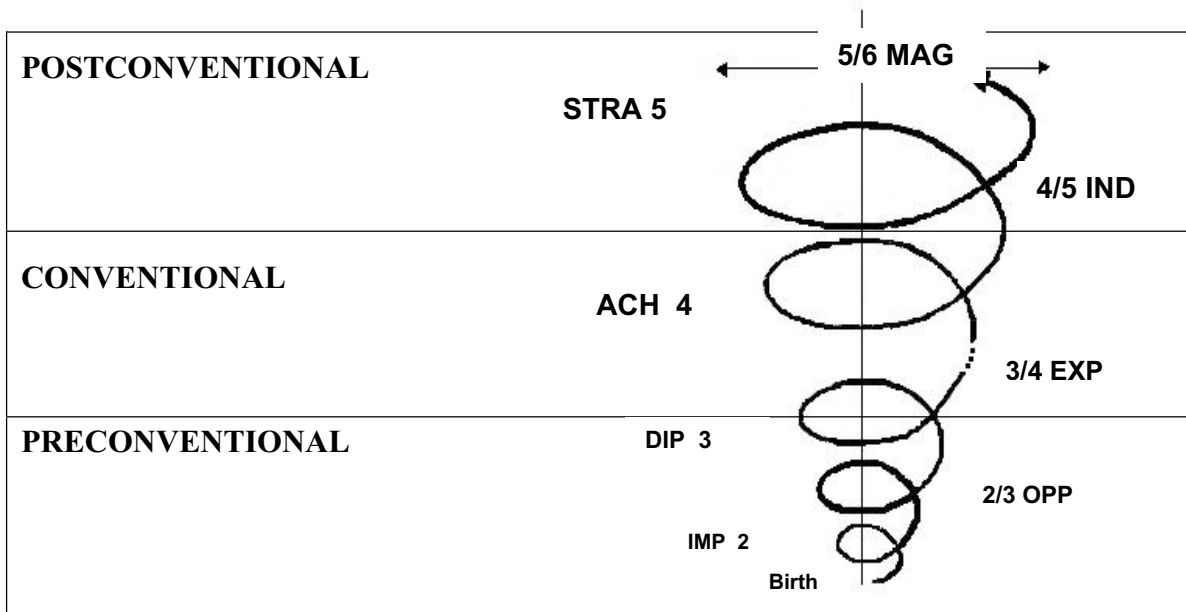
Adaptation with permission: Cook-Greuter S. Making the case for a developmental perspective. Industrial and Commercial Training. October 2004:278.Bradford, UK; Emerald Group Publishing.

Figure 3: Description of Action Logic and Characteristics

<table>
<tr><td></td><td><i>Total Protocol Rating</i></td><td><i>Action Logic/Stage</i></td><td><i>Characteristics</i></td></tr>
<tr><td>Pre Conventional</td><td>2/3</td><td>Opportunist</td><td>Manipulative; focused on self; external blame; "I win, you lose mentality"; see feedback as an attack; fragile self control; hostile humor; sees punishment as "an eye for an eye"</td></tr>
<tr><td rowspan="3">Conventional</td><td>3</td><td>Diplomat</td><td>Avoids overt conflict; wants to be a member of the group; seeks approval; conforms to social and group norms and standards; righteousness is prevalent; no self-reflection or recognition of own shortcomings; feedback heard as personal disapproval.</td></tr>
<tr><td>3/4</td><td>Expert</td><td>Rules by logic and expertise; strong belief systems; usually cognitively grasps one or more disciplines; perfectionism; serial problem solving; can get stuck in detail; difficulty prioritizing competing demands; sees feedback as criticism.</td></tr>
<tr><td>4</td><td>Achiever</td><td>Results and goal oriented; future oriented; seeks consensus; self as agent; initiator; may be unorthodox; self critical; mutuality and equality in relationships; begins to see complexity; accepts behavioral criticism.</td></tr>
<tr><td rowspan="3">Post Conventional</td><td>4/5</td><td>Individualist</td><td>Increased comprehension of complexity; turns inward sees self in relationship; able to adjust behavior to context; systematic problem solving; can create decision paralysis; begin to seek out and value feedback.</td></tr>
<tr><td>5</td><td>Strategist</td><td>Creates personal and organizational transformations; recognizes complexity and interrelationships; problem finding not just problem solving; aware of paradox and contradiction in system and self; non-hostile humor; deep appreciation of others; seeks feedback as vital for growth.</td></tr>
<tr><td>5/6</td><td>Alchemist/Magician</td><td>Generates social transformations; highly aware of complexity of meaning making, dynamic processes; reframe meaning of situations; seeks spiritual and personal transformations; works with chaos and order; interplay of awareness, thought, action; aware of continuous self re-definition.</td></tr>
</table>

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Table 1. Characteristics of Respondents

Sex (n = 83)	N	%
Female	80	96.0
Male	3	4.0
Master's Degree (n = 82)		
Yes	67	82.0
No	15	18.0
PhD Degree (n = 80)		
Yes	17	21.0
No	63	79.0
Specialty Certification (n = 82)		
Yes	34	41.0
No	48	59.0
Primary Area of Practice (n = 86)		
Clinical Nutrition	27	31.0
Food Systems Management	10	12.0
Public Health	5	6.0
Business	8	9.0
Food Science	0	0.0
Other	36	42.0
Age of First Professional Leadership Position (n = 82)		
Under 25	20	24.0
26 – 30	38	46.0
31 – 35	8	10.0
36 – 40	8	10.0
41 – 45	4	5.0
46 and over	4	5.0
Number of Professional Leadership Positions Held (n = 80)		
1 – 3	9	11.0
4 – 7	20	25.0
8 – 10	14	18.0
11 – 15	10	13.0
16 or greater	27	34.0
Held Paid Management Leadership Positions (n = 83)		
Yes	68	82.0
No	15	18.0
Held Other Leadership Positions (n = 81)		
Yes	66	81.0
No	15	19.0
Attended ADA Leadership Institute (n = 83)		
Yes	64	77.0
No	19	23.0

Table 2. ADA leaders' response to the need for leadership development

Question	Number of responses	Yes		No		Don't Know	
		n	%	N	%	n	%
Do you think that leadership ability can be developed?	83	83	100	0	-	0	-
Do you think that dietitians can develop leadership ability?	83	83	100	0	-	0	-
Do you think that how leaders develop is important?	83	66	80	4	5	13	16
Do you think that learning about leadership through education and training is sufficient to help people to transform into leaders?	81	12	15	64	79	5	6
Do you think that leadership development is related to transformation of consciousness (i.e. seeing the world through new eyes)?	82	64	78	6	7	12	15
Do you think that there are stages of developmental growth in leadership?	82	81	99	0	0	1	1
Do you think that leadership maturity evolves over time?	82	79	96	1	1	2	2
Do you believe that a person's self awareness and awareness of others has an impact on the way that they lead?	82	82	100	0	-	0	-
Do you think that knowing the way one interprets events, and how this interpretation influences the way one will act in a given situation would be helpful in developing one's leadership style?	82	70	85	1	1	11	13
Do you think that some dietitians demonstrate more leadership maturity than others?	82	80	98	0	0	2	2

Table 3. Action Logics/Stages of the 46 ADA Leaders

Dimension	Category							
	Conventional				Post Conventional			
Action Logic/Stage	3/4 Expert		4 Achiever		4/5 Individualist		5 Strategist	
	N	%	n	%	n	%	n	%
Total Weight Score	12	26	28	61	6	13		
Total Protocol Rating	12	26	28	61	5	11	1	2
Final Total Protocol Rating	12	24	28	61	6	13	0	-

Table 4. Examples of Scored Incomplete Sentence Responses by Stage from SCTi-MAP

Incomplete Sentence	Response	Stage
I am….	I am healthy.	3
	I am a hard worker.	3 / 4
	I am very adaptable having an affinity for knowledge and new surroundings.	4
	I am challenged by my recent promotion at work, delighted that my sons are healthy and successful and that I am married to a man whom I love and respect; thrilled to have weathered personal and professional change within the last year, and committed to personal growth and achievement in the next one.	4 / 5
A good boss ….	A good boss gets me the resources I need.	3 / 4
	A good boss encourages creativity and professional involvement.	4
	A good boss mentors, listens, provides prompt feedback, and usually stays out of the way.	4 / 5
	A good boss recognizes that people are THE essential part of results. A good boss pays attention to the person as well as the task and inspires and motivates – not command and control. A good boss leaves her/his personal issues and needs at home. A good boss is a rare and wonderful thing.	5

MANUSCRIPT II:

Mentoring as the Segue to Leadership

Mentoring as the Segue to Leadership

Abstract

This is phase two of a mixed methods study on leadership development of Registered Dietitians. This phase of the study utilized the qualitative methodology of grounded theory to determine the process/model to leadership of 25 nationally elected or appointed ADA leaders from across the United States. The model was based on semi-structured telephone interviews where participants described their experience of leadership. The interviews were audio recorded and transcribed verbatim. Transcripts were open coded for categories, sub-categories and dimensions. The six categories identified were: "getting hooked", born/made, mentoring, horizontal development, personal growth and "from fear to freedom." Categories were then collapsed into taxonomy of leadership development in the axial coding paradigm which distinguished the central phenomenon as: mentoring as the segue to leadership. The model hypothesizes the sequential unfolding of the leadership development process, and positions it for validation and further study.

Introduction

Leadership training, education and development are not a part of the core curriculum for practice of Registered Dietitians. This is true for the majority of clinical health care professions where the curriculum necessarily focuses on the translation of natural sciences into application in clinical practice. Anecdotal evidentiary observation suggests that movement to a leadership role is often based on superior skills in the present area of dietetic practice believing that exceptional clinical or systems competence translates into an effective leader. From a leadership perspective, oftentimes this

positions one for frustration and confusion in unchartered situations and decision - making capacity.

The American Dietetic Association defines leadership as "the ability to inspire and guide others toward building and achieving a shared vision. Association leaders shall model the way with a mindset for transformation, innovation, invention, adaptability, empowerment and risk-taking. This leadership mindset will enable the Association and its members to embark on a path toward a successful future (1)." While this is an exemplary description of desirable characteristics of leaders, it does not identify how dietitians journey to arrive at this leadership mindset.

A 2004 review article by Gregorie and Arendt summarized previous studies on dietetic leadership, and identified the limitations of these research projects suggesting that strategies need to be created to prepare dietitians for leadership positions (2). This study was designed to generate a model that explores the process of leadership development grounded on the descriptions and experiences of existent nationally elected or appointed Registered Dietitians in leadership positions in the American Dietetic Association. This will provide a better understanding of how dietitians develop as leaders, as well as identify strategies to improve leadership ability and prepare them to be effective leaders in the future.

Methods

Qualitative Methodology

The qualitative method of grounded theory was used to explore the process of leadership development. The intent of grounded theory, using the approach of Strauss and Corbin, is to generate or discover a general explanation of a process. This theory

development is "grounded" in data shaped by the views of the participants who have

lived experiences of the process (3, 4).

Sampling

Purposeful sampling (4) originated in phase one of the study targeting selected

participants for the qualitative exploration. Those Registered Dietitians who (a) held a

nationally elected or appointed position in the American Dietetic Association, (b) had

returned a demographic questionnaire, (c) completed the Sentence Completion Test

International – Maturity Assessment Profile Research Version (2) (SCTi-MAP) and (d)

had signed an informed consent to be interviewed and audio-taped were identified for this

phase of the study.

After the SCTi-MAP was scored, participants were contacted by standard mail

with an interpretation of their score and stage of development. At the same time they

were asked to participate in the interview phase of the study with an explanation of the

interview process, and a request for a signed consent form to be interviewed and audio

taped.

Interviews

Data collection consisted of semi-structured interviews by telephone.

Participants were contacted by e-mail to schedule an interview time and to obtain a phone

number where they could be contacted. Interviews were conducted from August 2007

through November 2007.

Participants were aware, by consent, that their interviews were being audio taped

and transcribed, and that they were eligible to receive a copy of the transcript if they

wished. Interview questions were open ended and addressed the following: initial and

early interest and involvement in leadership roles, persons who influenced or encouraged

them to be in leadership positions, the impact on personal growth as well as positive and

negative changes, consequences of being a leader, persona while in a leadership position,

what helped them the most to develop as a leader, advice to someone who aspires to

leadership in nutrition and dietetics, and – in their own words – how they would define

leadership.

Interviews were transcribed verbatim by a medical transcriptionist who had

signed a confidentiality agreement. Transcripts were checked for accuracy by listening to

the audio tape and comparing it with the transcribed text.

Data Analysis

Data analysis followed the systematic design of Strauss and Corbin, which utilizes

three coding methods in a constant comparative approach to the data (3). Research

strategies included (a) a general review of the interviews; (b) open coding by reducing the

transcribed data into categories including *in vivo* categories, sub-categories and

dimensions; (c) development of an axial coding paradigm to integrate structure to process

with identification of the central phenomenon, and presentation of the data by text and a

visual model; (d) and selective coding to integrate and refine the categories into theory

based on the story that connected the categories. Creswell's concept - The Data Analysis

Spiral – was instrumental in the analytic process (3, 4).

Atlas.ti software (Version 5.2, 1993 – 2007, atlas.ti scientific software

development,gmbh, Berlin, Germany) was used to organize and code the interview

transcripts. Findings were validated using member checking for the categories and the

axial coding paradigm (5). Triangulation – a systematic process of sorting through the

data, identifying common themes and eliminating areas that overlap – was also used for validation purposes (6). The project was approved by the Institutional Review Board of the sponsoring institution.

Findings

Twenty five RDs agreed to participate in the qualitative phase of the study. Interviews lasted from 20 to 60 minutes and resulted in a 374 page transcript. One interviewee was male and 24 were female. Of the twenty five, 19 held a Master's degree, 5 held a PhD degree and 15 held a specialty certification. Areas of practice included 10 in clinical nutrition, 4 in long term care, 5 in food systems management, 2 in business, 1 in clinical research, 1 in K-12 school district and 1 as a dietetic educator of practitioners . The age range was 38 – 65 years with a mean of 53.6 ($\pm$ SD) 6.77. Years in practice ranged from 15 – 40 with a mean of 28.1 ± 7.46, and total weighted scores on the SCTi-MAP ranged from 205 – 271 with a mean of 234.6 ± 17.32.

The distribution of the SCTi -MAP results was similar for the 25 RDs who were interviewed with 32% (n=8) at the Expert Stage, 52% (n=13) at the Achiever Stage and 16% (n = 4) at the Individualist Stage when compared with the total group of 46 RDs with 28% (n=13) at the Expert Stage, 59% (n=27) at the Achiever Stage, and 13% (n= 6) at the Individualist Stage. Other characteristics grouped by Stage scored results including age, years in practice, total weighted scores on the SCTi-MAP, age of first leadership position and number of leadership positions held are found in Tables 1 and 2.

Open Coding

Six major categories emerged from the data including: "Getting Hooked,"

Born/Made, Mentoring, Horizontal Development, Personal Growth, and "Fear to

Freedom." Two of these themes were "*in vivo*" categories, i.e. words of the respondents

themselves (3): "Getting Hooked" and "Fear to Freedom." Categories were further

qualified by identifying sub categories and associated dimensions. Figure 1 illustrates the

results of open coding for leadership development. "*Getting Hooked.*"

Entrance into leadership positions was often manifested by a desire to be

involved. It was also sometimes voluntary, accidental or reported as "being drafted".

Passion, as well as, a desire to move the organization and profession forward were

motivators for some of those interviewed. Elements of Servant Leadership (7) –service,

stewardship, contributing, giving back and a sense of duty – also played a role in seeking

leadership responsibilities. Participants wanting to make a difference; seeking an

intellectual challenge, and being at the level of decision making, described as "a spoken

voice," identified these needs as influencing them to move into leadership venues.

 Being an advocate was described by one RD:

    It's important to me to be a leader. I want to be able to

    shape where the future of dietetics is going.

Having a cause or area of interest that was being discussed, reviewed or initiated was also

addressed by interviewees. According to one RD:

I got drafted into various roles. Typically it was something I wanted

to accomplish. I found I do best in leadership roles if I'm working

on something that is of interest or value to me…Something that got

me hooked.

Born/Made

There is often a debate whether leadership ability is innate or natural – something

one is born with or that it can be made or nurtured in a person (8). The RDS interviewed

reflected both positions. One responded:

Leadership is something that comes really naturally to me …

Whereas another felt the opposite more accurately described her experience. Leadership

was not natural to her, even painful at times, but achievable through mentoring.

I worked with mentors to get an idea of how different leaders led, and

what I was getting more and more convinced of was that to some people

it was more natural, and that for other people, perhaps probably myself

included, it's not. And it's painful sometimes.

Birth order was identified as playing a role in leadership capacity as expressed by one

interviewee :

…. I'm the second child, the first daughter, and my family is birth order to

a "T"…. I came to realize that, yes indeed, I am a leader and I actually do it

pretty well.

One saw herself as "an idea person" and that a leader not only has good ideas, but is able

to implement them. Entrepreneurship, autonomy and" being secure in who she

is " were also attributes associated with the born/made theme.

Mentoring

All participants recognized that encouragement, nurturing and being supported were essential factors in their leadership development. Guidance by role models provided challenge and direction, and inspired them to strive for and choose excellence as their standard. Positive feedback reinforced their experiences and enabled them to set a course and become more strategic in their thinking and approach to leadership roles. Overall, the artistry of mentoring was consistently identified as the most important and effective factor in their development as a leader.

Of equal importance was the acknowledgement that leadership is a skill that is not acquired in a traditional classroom or seminar environment. It is possible to obtain theoretical knowledge of leadership in these situations, but leadership skill development requires ongoing interaction over time.

It is well stated by one RD:

That first challenge of leadership, I was just working blind until one

person came and helped me. She was my mentor. We don't learn

leadership skills and how to get there from a book.

Horizontal Development

Horizontal growth is achieved through education, taking classes, pursuing advanced degrees, and by exposure to new methods and skills. Nineteen of the 26 interviewees had attended the ADA Leadership Institute and found it to be inspirational in their pursuit of leadership development.

One identified herself as "a compulsive learner" being an avid reader and reviewing the business literature. Some were drawn to management training and skill

building to gain experience and build their career. They found benefit in learning the "tools of the trade" such as developing meeting agendas and budgets.

Graduate education was also seen as a means to a specific end as expressed by one participant:

> You need to be strategic about identifying things and then trying to figure out how to make it happen. Those concepts that I never really thought about before, and now I want to think about them. I feel sometimes I don't have the skills so I think of an MBA just to get more strategic about things.

Personal Growth

In their process of leadership development, all of the participants expressed their emerging personal growth. Their involvement in professional leadership roles contributed significantly to that maturation. Building relationships and networking provided a sense of community and afforded the opportunity to meet and work with "phenomenal high functioning people." Their increased self awareness was instrumental in "integration of self", and led to empowerment in their personal as well as professional lives.

Networking opportunities were also seen as " a great way to build a career". Just working in a job was not sufficient enough to provide fulfillment as demonstrated by this participant's words:

> I would never be satisfied just working. I need professional involvement. The job itself is not going to get me up to the highest level of Maslow's hierarchy.

Running for office provided its own challenges, but also represented persistence in securing personal and professional growth.

I volunteered for several years and got nothing. No call, no letters
no anything. And finally, while I was doing my thing at work, someone
gave me the opportunity to be involved in some small project. Then,
before I knew it, I was asked to do other things.

Other aspects of personal growth included "being very cognizant of my responsibility", and feeling a greater sense of responsibility to make sure that whatever I say is accurate."

Another participant noticed that
I am more strategic. I remember, I suddenly realized that the buck
stopped here. One of the biggest things that I felt is that you need
to be strategic about identifying things and then trying to figure out
how to make them happen within the constraints of the organizational
structure. And oh, OK so I have to have a solution….

An additional aspect of personal growth included increased self confidence and self esteem.

Definitely a confidence builder… You take on projects and tasks and
are successful leading people, then you are rewarded with the success
of the program. It just gives you more confidence. It makes you feel
better about yourself.

Fear to Freedom

Insecurity, naivete', and emotional and professional immaturity were at the forefront of initial leadership experiences for some participants. Fear of failure and a lack of experience were expressed:

Lots of times you have to make a decision, and then you have to

re-evaluate it and revamp it. I think that the fear of failure was

there. There was just a lot of insecurity related to lack of experience.

It was a mixed bag of feelings because, even though it was frightening, it was also sensed as freeing and exposed the distinction between a career and a job.

My first leadership experience was scary, but it was also liberating!

I cannot even imagine what my career – actually I wouldn't have a

career if I wasn't doing my volunteer and leadership activities.

I would just have a job.

Participants stated that leadership opportunities had enhanced their career path, provided a sense of accomplishment and fulfillment, and had helped to shape their "world view." Leadership roles had opened the door for recognition for expertise in the profession. "It feels good to have recognition when someone says to me "I've read some of your stuff," stated one RD.

The personal impact of being in a leadership role was best expressed by the comments of this participant:

Being a leader totally changed my personality. I mean, you can't know

how I've grown from being the shy, quiet, reserved person that I was..

literally invisible, to being the person who has worked really hard! I

am passionate about the dietetics profession!

Being visionary was also seen as being very important " in getting the people you lead to feel that vision." There was also satisfaction in being a leader to make one "more enthusiastic about your profession. You stay more on the cutting edge professionally and personally. It's just more satisfying."

Axial Coding

Categories, sub-categories and dimensions identified in open coding were evaluated, collapsed, and positioned into a paradigmatic taxonomy of leadership development referred to as the axial coding paradigm. In axial coding the Central Phenomenon is identified and illustrates the relationship of all other categories to it. (3) Figure 2 presents the model of the paradigm and identifies "Mentoring as the Segue to Leadership" as the overarching theme.

Mentoring as defined by the New Oxford American Dictionary is "to advise or train (someone esp. a younger colleague (9)," and is literally reflective of the responses expressed by the RDs as being crucial to their development as leaders. Regardless of how, or why, they began their leadership roles – volunteering, being drafted, or giving back and contributing to the profession – or in what context – voluntary organizations or places of employment - having a mentor to tutor and coach them was at the core of their success. "What helped me the most to develop as a leader were mentors…"; "I have a mentor …"; "Get a mentor. Get lots of mentors…." are verbatim responses that identify mentoring as the exigent factor in their leadership development.

Mentoring provided guidance, direction and the ability to role model and assisted them in determining their own leadership style. The encouragement and support of the

mentor(s) instilled confidence and inspired the RD to develop along the leadership continuum.

Mentoring provided the segue – defined as "to move without interruption or an uninterrupted transition "(9) and inspiration to gain experience, build a career, and acquire additional education and training. This led to personal as well as professional growth, as well as building relationships and a sense of community through networking. Outcomes of these strategies included a more integrated self and a sense of empowerment. RDs acknowledged that leadership roles provided career enhancement as stated by one RD "I would never be satisfied just working; I need professional involvement." Another said "I do think that if I was not in leadership roles in dietetics, I don't see myself still practicing in dietetics." Being in leadership roles also enhanced their ability to be more visionary and to form their world view.

Discussion

The intent of this study was to determine the process of leadership development of Registered Dietitians. It answers the question: How do Registered Dietitians develop as leaders? The overarching theme "mentoring as the segue to leadership" illuminates how existing dietetic leaders were able to transition from "fear to freedom" into leaders in the dietetics profession. Mentoring was central to this process.

Interestingly, based on the Action Logic Stages of the RDs, there wasn't one stage that identified mentoring as being the key more than another. However, constructive developmental theory posits that through mentoring and coaching by someone at a later stage in the developmental spiral than ourselves, one can move to a later stage of vertical

development (9). Consequently, a person who has more opportunity with leadership mentoring has a more favorable chance of developing to later levels of leadership.

RDs discussed that leadership is not something that one learns from a book or in a traditional educational environment, but rather is a process over time again mimicking the constructive developmental position that leadership develops over the life course in predictable ways (10). The participants' Action Logics were identified at the Expert, Achiever and Individualist Stages. Rooke and Torbert characterize these stages as follows: the Expert rules by logic and expertise; the Achiever is results, goal and future oriented; and the Individualist interweaves competing personal and company Action Logics with an increased comprehension of complexity (11). In their studies of managers and professionals, Achievers were more effective than Experts in implementing organizational strategies, and Individualists demonstrated a consistent capacity to innovate and successfully transform their organizations (11).

By becoming involved in the profession, participants were able to network and build lifelong relationships with other leaders. These relationships were seen as being fundamental to their continued development, and irreplaceable essential components to the sense of community and sharing they afforded.

The main obstacle expressed by participants was "time"; "not having enough time", and multi-tasking to accomplish all they needed to accomplish at home, at their place of employment, as well as their professional leadership responsibilities. However, when asked if they would do it again, the unanimous response was "yes".

Whether leaders are made or born remains debatable. Many leaders have learned leadership rather than inherited it, and those who deem to understand their own Action Logic can improve their ability to lead.

Implications

Results of the study indicate that dietitians who show interest or promise for leadership roles should have a mentor identified early in their career to guide and encourage them to choose leadership opportunities. Strategies should be developed for inspiring passion for the profession as this passion is a driver toward leadership. There should be a defined focus on professional development that includes leadership skill development to benefit dietitians, not only as they practice in their profession, but also as they venture into leadership roles outside of the scope of dietetics.

Limitations

Time and distance constraints limited the interviews to the telephone. This eliminated the opportunity to observe non-verbal expressions and behavior which can provide a richer in depth assessment of each participant. Observations of the participants actively engaged in their leadership roles would have also provided added information to support the interview content, as well as substantive context for the study.

Recommendations

This study indicates that Registered Dietitians through mentoring, nurturing and role modeling were able to assume leadership positions and to see themselves as change masters and making a difference for the profession. They enjoyed personal as well as professional growth through networking and building lifelong relationships.

Based on these findings, it is suggested that recruitment of prospective leaders should begin and be encouraged from the beginning of a person's academic program in dietetics. It should be emphasized that becoming a dietitian affords entrance into a professional career that, through active involvement, can have an impact on their future professional and personal growth.

The American Dietetic Association might consider the development of a formal leadership mentoring program for prospective leaders in the profession as an extension of the Leadership Institute. As reported by Ruvolo, Petersen and LeBoeuf leadership development requires more than a training workshop. For any significant benefit or growth to be realized, leadership development and mentoring should be embedded in the organizational culture, and be over a period of time, with multiple experiences, reflection and feedback (12). Some basic leadership tasks and tools as well as worldviews can be shared with emerging leaders. Observing current leaders in their leadership roles is also an essential component of leadership development. This also affords a "hands on" opportunity for role modeling, and identifying one's leadership style and preference. Ideally, leadership development should be accessible in the field.

Prospective and existent leaders might pursue the SCTi-MAP to measure their leadership capacity and professional maturity, and also identify leaders at a later stage of development to serve as mentors for developmental growth. Twenty first century leaders will need to emerge in the Post Conventional Stages to be transformational in their leadership and move the profession forward.

Future Research

This study was the first to examine the process of leadership development of Registered Dietitians. Comparing a group of dietetic leaders with dietitians who have not experienced leadership roles for the presence of these attributes might be an interesting follow up to this study, or comparing a group who is mentored for leadership with a group who is not mentored might also be considered.

In a study with a larger sample size and a greater spread in Action Logic Stages, it would be of interest to see if there was any difference in categories that were identified based on Stage. If persons at the later stages of development differed from those at earlier stages, this might create a contrasting model of leadership development.

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Figure 1. Open Coding of Leadership Development

Categories	Sub-Categories	Dimensions
"Getting Hooked "	Being an advocate Being ready/Assuming a Leadership position Drafted/Accidental/Volunteered Cause of interest Passion Intellectual challenge Contribution/Giving back Stewardship Moving the organization forward	A spoken voice Taking risks Sense of power Sense of duty Motivation Making a difference At level of decision Making Servant Leadership Service Create Opportunities for & Seek New Leaders
Born/Made	Natural born Birth order Autonomy of a leader NOT natural born	Secure in who she is Seeks opportunities Idea person/Entrepreneur
Mentoring	Guidance and Challenge Nurtured /Encouraged Supported Role Modeling Standards of excellence Being inspired	Set an example Set a course Goal oriented Strategic Positive experiences Positive feedback
Horizontal Development	Education Learning/Training Compulsive Learner Gaining experience Building a career	Classes Graduate degree Management Training Interpersonal & Technical Skill Building ADA Leadership Institute Leadership tools (i.e. meeting agenda etc.)
Personal Growth	Self Awareness Integrated self Empowerment Building relationships Networking Sense of community Professional life enhanced Personal life	Self confidence Self-development Self esteem builder Self evaluating Personal power Mediation Gratification More Interesting Person
From Fear to Freedom	Naivete Emotional & Professional Immaturity Knowledge deficit Evolution Sense of accomplishment Formed world view Career path/enhancement Visionary Fulfillment	Insecure Unsure Unprepared Scared Intimidated Frustrated Lacked trust, experience Struggle Didn't know much Changing role Openness to change Known as an Expert Job vs Career Self satisfaction

Figure 2: Axial Coding Paradigm of Leadership Development

Causal Conditions
Getting Hooked
- Volunteered
- Stewardship
- Drafted /
  Accidental
- Contribution/
  Giving back
- Passion
- Moving
  organization
  forward
- Born/Made

Central Phenomenon
Mentoring as the Segue to Leadership
- Nurtured/
  Encouraged
- Supported
- Guidance and
  Challenge
- Role Modeling
- Being Inspired

Context
- Professional, Civic &
  Voluntary Organizations
- Management Positions
- Hospitals/ Clinics
- Food Systems
- Education/Research

Strategies
Personal Growth
- Building
  relationships
- Networking
- Sense of
  community

Intervening Conditions
Horizontal development
- Education/training
- Interpersonal and
  technical skill building
- Gaining experience
- Building a career

Consequences
Personal growth
- Integrated self
- Empowerment
- From fear to freedom
- Career path/
  enhancement
- Visionary
- Formed world
  view

Appendix A

Institutional Review Board Approval Letters for Demographic Survey

UNIVERSITY OF
Nebraska
Lincoln

October 20, 2006

(First Name) (Last Name) (Credentials)
(Title) (Area)
(Address 1)
 (City) (State) (Zip)

IRB# 2006-09-004 EX

Dear (Salutation) (Last Name)

A few days from now you will be receiving in the mail a request to fill out a brief questionnaire for an important research project being conducted through the University of Nebraska – Lincoln.

The research is the dissertation project for the PhD in Nutrition, and involves leadership development among Registered Dietitians.

We are writing in advance because we are aware that many people like to know ahead of time that they will be contacted. The study is an important one that will provide basic information on interest and need for developing leadership capacity of dietitians.

Thank you for your time and consideration. It's only with the generous help of our colleagues in nutrition and dietetics that our research can be successful.

Sincerely
Anne Marie Hunter, MS, RD, LD, FADA   Nancy Lewis, PhD, RD, FADA
1426 S. Clinton Street   Professor
Carthage, Missouri 64836   Department of Nutrition and Health
Sciences
University of Nebraska-Lincoln

UNIVERSITY OF
Nebraska

COLLEGE OF EDUCATION AND HUMAN SCIENCES
Department of Nutrition and Health Sciences

October 24, 2006

(First Name) (Last Name) (Credentials)
(Title) (Area)
(Address 1)
 (City) (State) (Zip)

IRB# 2006-09-004 EX

Dear (Salutation) (Last Name)

We are writing to ask your help with the 2006 Dietetic Leadership Development Survey. This study is part of an effort to learn the level of interest that exists for leadership development of Registered Dietitians.

You have been selected to participate in this research project as part of a sample of Registered Dietitians who currently hold a leadership position in the Dietetics profession. Your input and response to the survey will provide us with basic information on interest and the need for developing leadership capacity of dietitians. The survey asks demographic questions as well as questions about your professional career as a dietitian. It will also identify if you are interested in participating in phase two of the study. It will take ten to fifteen minutes to complete.

The second phase of the study will be conducted by e-mail, and involves taking a sentence completion profile to determine your stage of leadership development and professional maturity. Participation in phase two is based on a positive response to interest in completing the profile. The profile will take no more than forty-five minutes to complete.

You may refuse to answer any questions. You are free to decide not to participate in this study or to withdraw at any time without adversely affecting your relationship with the investigators or the University of Nebraska – Lincoln. Your decision will not result in any loss of benefits to which you are otherwise entitled. There are no known risks involved in participating in the study, and, as requested, the results of the profile which identifies your stage of leadership development will be mailed to you.

The results of this study will be used to suggest new methods and models of learning leadership behavior. Your answers will be completely confidential; only available to the

UNIVERSITY OF
Nebraska

principal investigator and kept in a locked file. If you are not interested in participating in phase two of the study, when you return your completed questionnaire, your name will be deleted from the mailing list and any identifying information will be destroyed. If you are going to participate in phase two, we will need your name to send you the sentence completion profile. When the profile is returned your name will be deleted and any identifying information will be destroyed. This survey is voluntary. However, you can help us very much by sharing your opinions and experience.

Returning this survey to the investigators indicates that you are giving your consent to participate. It also means that you agree to have your responses included anonymously in the report of this research in the dissertation and any resulting publications. You should keep this letter for your records.

If you have any questions or comments about this research, you may contact Anne Marie Hunter at the address below, or at 1-417-625-2119 or email judeian@sbcglobal.net. You may contact Nancy Lewis at the University of Nebraska-Lincoln at 1-402-472-4633.

If you have any questions about your rights as a research participant that have not been answered by the investigator or to report any concerns about the study, you may contact the University of Nebraska – Lincoln Institutional Review Board, telephone 1-402-472-6965.

Thank you very much for helping us with this important study.

Sincerely

Anne Marie Hunter, MS, RD, LD, FADA   Nancy Lewis, PhD, RD, FADA
1426 S. Clinton Street   Professor
Carthage, Missouri 64836   Department of Nutrition and Health
Sciences   University of Nebraska-Lincoln

Nebraska

UNIVERSITY OF

COLLEGE OF EDUCATION AND HUMAN SCIENCES
Department of Nutrition and Health Sciences

November 7, 2006   IRB #2006-09-004 EX

Two weeks ago a questionnaire seeking your opinion and input about leadership development among Registered Dietitians was mailed to you.

Your name was selected as part of a sample of dietitians who currently hold a leadership position in the Dietetics profession.

If you have already completed and returned the questionnaire to us, please accept our sincere thanks. If not, please do so today. We are especially grateful for your help because it is only by asking our current leaders that we can begin to consider leadership capacity of dietitians in the future.

If you did not receive a questionnaire, or if it was misplaced, please call us at 417-625-2119 or e-mail at judeian@sbcglobal.net and we will get another one in the mail to you today.

Anne Marie Hunter, MS, RD, LD, FADA
1426 S. Clinton Street
Carthage, Missouri 64836

Nancy Lewis, PhD, RD, FADA
Professor
Department of Nutrition and Health Sciences

University of Nebraska-Lincoln

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COLLEGE OF EDUCATION AND HUMAN SCIENCES
Department of Nutrition and Health Sciences

November 21, 2006
(First Name) (Last Name) (Credentials)
(Title) (Area)
(Address 1)
(City) (State) (Zip)

IRB# 2006-09-004 EX

Dear (Salutation) (Last Name)

About three weeks ago we sent a questionnaire to you that asked about leadership and Registered Dietitians. To the best of our knowledge, it has not yet been returned. The comments of dietitians who have already responded include some valuable insights about dietitians and leadership, as well as an interest in doing the sentence completion profile. We think the results are going to be useful for the Dietetics profession.

We are writing again because of the importance that your questionnaire has for helping to get accurate results. It's only by hearing from nearly everyone in the sample that we can be sure the results are truly representative of leaders in nutrition and dietetics.

If we have made a mistake and you are no longer in a leadership position in the Dietetics profession, please let us know on the front of the questionnaire and return it in the enclosed envelope so that we can delete your name form the mailing list.

A questionnaire identification number is printed on the questionnaire so that we can check your name off of the mailing list when it is returned. The list of names is then destroyed so that individual names can never be connected to the results in any way. Protecting the confidentiality of people's answers is very important to us, as well as the University of Nebraska-Lincoln.

This will be our final request. The survey must be returned by November 28, 2006 to be included as part of the data for the study. We hope that you will fill out and return the questionnaire soon, but if for any reason you prefer not to answer it, please let us know by returning a note or blank questionnaire in the enclosed stamped envelope.

Sincerely

Anne Marie Hunter, MS, RD, LD, FADA   Nancy Lewis, PhD, RD, FADA
1426 S. Clinton Street   Professor
Carthage, Missouri 64836   Department of Nutrition and Health Sciences
                                                          University of Nebraska-Lincoln

110 Ruth Leverton Hall / P.O. Box 830806 / Lincoln, NE 68583-0806 / (402) 472-3716 / FAX (402) 472-1587

Appendix B

Demographic Survey on Leadership Development Among Registered Dietitians

IRB#: 2006-09-004 EX   Code: 2006-«Code»

Survey on Leadership Development Among Registered Dietitians

The ability to lead is frequently linked to professional success. Indeed, The American Dietetic
Association identified the need to develop dietitians' leadership capacities by creating The Leadership Institute in 2003.
It is often difficult to define what leadership is and what prepares one for leadership roles. Your opinions, thoughts and experience will provide needed insight into leadership development. It will take no more than ten to fifteen minutes to complete the survey.
Thank you for your participation in this survey!

Section I: Start Here

1. Thinking about leadership, how would you rate the importance of dietitians being leaders?

- ☐ Very important
- ☐ Important
- ☐ Not important
- ☐ Very unimportant
- ☐ Neither important nor unimportant

2. Do you think that leadership ability can be developed?

- ☐ Yes
- ☐ No
- ☐ Don't know

3. Do you think that dietitians can develop leadership ability?

- ☐ Yes
- ☐ No
- ☐ Don't know

4. Do you think that *how* leaders develop is important?

    ☐ Yes
    ☐ No
    ☐ Don't know

5. Do you think that learning about leadership through education and training is sufficient to help people to transform into leaders?

    ☐ Yes
    ☐ No – If No, please explain below ↓

    _____
    _____
    _____

    ☐ Don't know

6. Do you think that leadership development is related to transformation of consciousness i.e. seeing the world through new eyes?

    ☐ Yes
    ☐ No
    ☐ Don't know

7. Do you think that there are stages of developmental growth in leadership?

    ☐ Yes
    ☐ No
    ☐ Don't know

8. Do you think that leadership maturity evolves over time?

    ☐ Yes
    ☐ No
    ☐ Don't know

9. Do you believe that a person's self awareness and awareness of others has an impact on the way that they lead?

    ☐ Yes
    ☐ No
    ☐ Don't know

10. Do you think that knowing the way one interprets events, and how this interpretation influences the way one will act in a given situation would be helpful in developing one's leadership style?

☐ Yes
☐ No
☐ Don't know

11. Do you think that some dietitians demonstrate more leadership maturity than others?

☐ Yes
☐ No
☐ Don't know

12. At what age did you hold your first professional leadership position? A professional leadership position is defined as an elected officer or appointed committee member in either district, state or national dietetic or nutrition related professional organization.

☐ under 25
☐ 26 – 30
☐ 31 – 35
☐ 36 - 40
☐ 41 - 45
☐ 46 and over

13. Please identify the number of professional leadership positions you have held.

☐ 1 - 3
☐ 4 – 7
☐ 8 – 10
☐ 11 – 15
☐ 16 or greater

14. Please list UP TO FIVE of the most recent professional leadership positions you have held and the year that you held each position.

Leadership Position   **Year held**

1._____   _____
  _____

2._____   _____
  _____

3._____   _____
  _____

4._____   _____
  _____

5._____   _____
  _____

15. Have you held any management leadership positions?
A management leadership position is defined as a paid position.
For example: Department Manager, Director, Chairman etc.

  ☐   Yes
  ☐   No

16. If you have held any management leadership positions, please list them, and your age when you accepted that role.

Management Leadership Position   **Age**

1._____   ____
2._____   ____
3._____   ____
4._____   ____
5._____   ____
6._____   ____
7._____   ____

17. Have you attended the American Dietetic Association Leadership Institute?

  ☐   Yes
  ☐   No

18. Have you held any other leadership positions ?

☐ Yes
☐ No

19. If you answered YES to question # 18, please list the other leadership positions.

1._____
2._____
3._____
4._____
5._____
6._____
7._____

20. Would you be interested in doing a sentence completion questionnaire to identify your personal leadership development profile?

☐ Yes
☐ No

21. If you answered YES to question # 20, would you like to receive the results of your profile?

☐ Yes
☐ No

22. If you have any additional comments about this survey or about leadership development of Registered Dietitians, please write them in the space below.

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Section II: Demographic Information
Please complete the following demographic information.

1. Your sex: **Your Date of Birth:**

    ☐ Male   _____
    ☐ Female   Month/Day/Year

2. What year did you become Registered as a dietitian? _____

3. Do you have a Master's Degree?   ☐Yes   ☐No

4. Do you have a PhD Degree?   ☐Yes   ☐No

5. Do you hold any specialty certifications?   ☐Yes   ☐No

If yes please list which ones you hold: _____

_____

6. How many years have you practiced as a dietitian? _____

7. What has been your primary area of practice?

    ☐ Clinical Nutrition
    ☐ Food Systems Management
    ☐ Public Health
    ☐ Business
    ☐ Food Science
    ☐ Other _____
_____(please specify)

Thank you for completing this survey. Please return paper copies of this by November 17, 2006 to:

Anne Marie Hunter, MS, RD, LD, FADA
1426 Clinton St.
Carthage, Missouri 64836
Please feel free to call me if you have questions. 417-358-4748(h) 417-625-2119(w)

Appendix C

Institutional Review Board Approval Letter for Sentence Completion Test International – Maturity Assessment Profile (SCTi-MAP)

UNIVERSITY OF
Nebraska

COLLEGE OF EDUCATION AND HUMAN SCIENCES
Department of Nutrition and Health Sciences

By your positive response to the survey questionnaire in phase one, you gave your consent to participate in phase two of the study on Leadership Development Among Registered Dietitians. You should keep this letter for your records.

Phase two involves completing the Professional Sentence Completion Form (SCTi-MAP). This is a validated instrument that measures leadership capacity and professional maturity. It consists of 36 sentence "stems" to be completed.

The Profile Form is attached. As the directions on the form indicate, please allow yourself no more than forty-five minutes, in one sitting, to finish the form. To fill out the form, please open the document and complete it. Then save the document to your system and return it to me by e-mail with your saved document.

You may refuse to answer any questions. You are free to decide not to participate in this study or to withdraw at any time without adversely affecting your relationship with the investigators or the University of Nebraska-Lincoln. Your decision will not result in any loss of benefits to which you are otherwise entitled.

When the profile is returned, your name will be deleted and any identifying information will be destroyed. This profile is voluntary and confidential. Results will be available only to the principal investigator and will be kept in a locked file. However, you can help us assess professional development and leadership capacity by completing it.

There are no known risks involved in participating in this study. If you have requested a copy of your results they will be mailed to you by separate cover. Returning this survey to the investigators means that you agree to have your responses included anonymously in the report of this dissertation research and any resulting publications.

If you have any questions or comments about this research, you may contact Anne Marie Hunter at the address below, or at 1-417-625-2119 or by e-mail at judeian@sbcglobal.net. You may contact Nancy Lewis at the University of Nebraska-Lincoln at 1-402-472-4633.

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Department of Nutrition and Health Sciences

If you have any questions about your rights as a research participant that have not been answered by the investigator or to report any concerns about the study, you may contact the University of Nebraska-Lincoln Institutional Review Board, telephone 1-402–472-6965.

Thank you very much for your help with this important study.

Sincerely,

Anne Marie Hunter,MS,RD,LD,FADA   Nancy Lewis, PhD,RD,FADA
1426 S. Clinton Street   Professor
Carthage, Missouri 64836   Department of Nutrition and Health
     Sciences

     University of Nebraska-Lincoln

IRB# 2006-09-004 EX

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Department of Nutrition and Health Sciences

Thank you for your willingness to participate in phase two of the study on Leadership Development Among Registered Dietitians. By answering, "yes" on the survey to being interested in doing a sentence completion profile, you are now eligible to participate in this process.

Three days from now you will be receiving the Leadership Development Profile by e-mail. We are writing in advance because we are aware that many people like to know ahead of time when they will be receiving the profile.

Thank you again for your time and consideration. With your help, we will be able to assess leadership capacity and maturity of dietitians.

Sincerely,

Anne Marie Hunter,MS,RD,LD,FADA   Nancy Lewis, PhD, RD, FADA
1426 S. Clinton Street   Professor
Carthage, Missouri 64836   Department of Nutrition and Health Sciences
                                                       University of Nebraska-Lincoln

IRB # 2006-09-004 EX

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One week ago the Leadership Development Profile Sentence Completion Form was sent to you by e-mail for you to fill out.

We are thanking you for your agreement to participate and look forward to receiving your profile. We are grateful for your help because it is only by asking our current leaders that we can begin to consider leadership capacity and maturity of dietitians in the future.

If you have misplaced or deleted the profile, please call us at 417-625-2119 or e-mail at judeian@sbcglobal.net and we will get another one to you today.

Sincerely,

Anne Marie Hunter, MS, RD, LD, FADA   Nancy Lewis, PhD, RD, FADA
1426 S. Clinton Street   Professor
Carthage, Missouri 64836   Department of Nutrition and Health Sciences
                                                             University of Nebraska-Lincoln

IRB# 2006-09-004 EX

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About two and one half weeks ago we sent you the Leadership Development Profile Sentence Completion Form for you to fill out. To the best of our knowledge, it has not yet been returned.

The profiles that have already been returned and scored have indicated some valuable information about dietitians and leadership capacity and maturity. We think the results are going to be useful to the Dietetics profession.

We are writing again because of the importance that your profile has for helping to get accurate results. It's only by hearing from everyone in the sample that we can be sure the results are truly reflective of leaders in nutrition and dietetics.

If we have made a mistake and you are no longer in a leadership position in the Dietetics profession, please let us know by e-mailing us back in response to this message so that we can delete your name from the list.

A duplicate profile is attached for your convenience. Your name will be deleted from the profile when it is returned. Protecting the confidentiality of people's answers is very important to us, as well as the University of Nebraska-Lincoln.

This will be our final request. We hope that you will complete and return the profile soon.

Thank you for your help with this research study.

Sincerely,

Anne Marie Hunter,MS,RD,LD,FADA
1426 S. Clinton Street
Carthage, Missouri 64836
Sciences
IRB# 2006-09-004 EX

Nancy Lewis, PhD,RD,FADA
Professor
Department of Nutrition and Health
University of Nebraska-Lincoln

Appendix D

Sentence Completion Test International – Maturity Assessment Profile (SCTi-MAP) Research Version (2)

Professional Sentence Completion Form
36-item SCTi-MAP Research Version (2)

Project	Leadership Development Among Registered Dietitians	*ID* (assigned ID#):
Gender	*Age*	*Profession*
Education		*Native language*

---

1   Raising a family

2   When I'm criticized

3   When a child will not join in group activities

4   A man's job

5   Being with other people

6   The thing I like about myself is

7   **If my mother**

8   **What gets me into trouble is**

9   **Education**

10   When people are helpless

11   **Women are lucky because**

12   **A good boss**

13   **A girl has a right to**

14   **When they talked about sex, I**

15   **Change is**

16   **I feel sorry**

17   **When they avoided me**

18   **Rules are**

19   **Crime and delinquency could be halted if**

20　　**Men are lucky because**

21　　**I just can't stand people who**

22

　　At times s/he worried about   "S/he" should be read as "she" by women, "he" by men

23　　**I am**

24　　**If I had more money**

25　　**My main problem is**

26　　**When I get mad (UK: angry)**

27　　**People who step out of line at work**

28　　**My mother and I**

29　　**If I were in charge**

30

　　Usually s/he felt that sex   "S/he" should be read as "she" by women, "he" by men.

31　　**My father**

32   ***If I can't get what I want***

33   ***When I am nervous***

34   ***For a woman a career is***

35   ***My conscience bothers me if***

36   ***Sometimes s/he wished that***   *"S/he" should be read as "she" by women, "he" by men.*

Appendix E

SCTi-MAP Scores

Appendix E:				Scorers EI Elliott Ingersol	Supervision S. Cook-Greuter			7/5/2007														Final TPR
				Beena Sharma																			
Listed by ID#												compromised ratings EI +BS											
Hunter	sex	age	educ.	profession	Original proje	Other	II	late	2	Δ	Δ/3	3	3/4	4	4/5	5	5/6	6	TWS	Ogive	TPR	SCG	
H03	F	61		DIETETICS	HUNTER	B1		2/07			1	3	15	10	7				235	4	4	4	
H04	F	53	MS	DIETICIAN	HUNTER	B3		5/07	1		1	7	17	10					213	3/4	3/4	3/4 +	
H05	M	50	MASTER	DIETICIAN	HUNTER	B1		2/07				3	9	16	8				245	4	4	4	
H06	F	49	PHD	CONSULTANT	HUNTER	B3		5/07				9	10	14	3				227	4	4	4	
H10	F	53	MS	RD	HUNTER	B3		5/07			1	6	14	12	3				226	3/4	3/4	low 4	
H13	F	55	PHD	PROFESSOR	HUNTER	B2		4/07	1		1	8	12	11	1	1			212	3/4	3/4	3/4+	
H14	F	52	PHD	ADMINISTRAT	HUNTER	B1		2/07		1		8	7	15	4	1			231	4	4	4	
H15	F	48	MS	DIETICIAN	HUNTER	B4		7/07				4	12	18	2				234	4	4	4	
H17	F	58	BSc	REG DIETICIAN	HUNTER	B4		7/07				5	11	13	7				238	4	4	4	
H18	F	55	MS	DIETICIAN	HUNTER	B3		5/07				1	7	14	13	1			258	4/5	4/5	4/5	
H21	F	45	BS	DIETICIAN	HUNTER	B1		2/07				1	1	15	18	1			269	4/5	4/5	4/5	
H23	F	53	MASTER	SALES	HUNTER	B1		2/07				5	14	14	3				231	4	4	4	
H25	F	46	MASTER	REG DIETICIAN	HUNTER	B1		2/07				7	14	14	2				233	4	4	4	
H28	F	59	MS	REG DIETICIAN	HUNTER	B4		7/07				4	13	16	3				234	4	4	4	
H29		DEMOGRAPHIC INFO BLANK			HUNTER	B4		7/07				5	15	14	2				229	4	4	4	
H30	F	65	MS	DIETICIAN	HUNTER	B2		4/07			1	10	14	10	1				216	3/4	3/4	3/4	
H31	F	49		DIETCIAN	HUNTER	B3		5/07				6	6	18	5	1			241	4	4	4+	
H33	F	61	PHD	MANAGER	HUNTER	B2		4/07				4	16	12	4				232	4	4	4	
H36	F	55	MS, RD,	CONSULTANT	HUNTER	B4		7/07		3		15	8	7	3				205	3/4	3/4	3/4	
H37	F	55	BS	RD	HUNTER	B3		5/07				4	9	15	6	2			245	4	4	4	
H40	F	47	MS	EDUCATOR	HUNTER	B1		2/07	0	0	0	3	15	15	3	0	0	0	234	4	4	4	scg
H45	F	52	MS, RD	DIETICIAN	HUNTER	B4		7/07				11	11	12	2				221	3/4	3/4	3/4	
H46	F	38	BS	DIETICIAN	HUNTER	B2		4/07			1	2	12	16	5				238	4	4	4	
H47	F	49	BS	DIETICIAN	HUNTER	B1		2/07				15	10	9	1	1			215	3/4	3/4	3/4	
H49	F	48	MBA, BS	REG DIETICIAN	HUNTER	B4		7/07				6	9	17	4				235	4	4	4	
H51	F	49	MS	DIETICIAN	HUNTER	B1		2/07			1	6	17	11	1				221	3/4	3/4	3/4	
H53	F	36	2 BS	DIETICIAN	HUNTER	B2		4/07		1		8	15	11	1				218	3/4	3/4	3/4	
H54	F	60	BS	RD	HUNTER	B3		5/07				2	10	16	7	1			247	4	4	4	
H55	F	45	BS	DIETICIAN	HUNTER	B3		5/07				5	12	16	3				233	4	4	4	

trainee protocols

SES, simple indiv. distr. stats

Hunter	sex	age	educ.	profession	Original proje	Other	late	2	Δ	Δ/3	3	3/4	4	4/5	5	5/6	6	TWS	Ogive	TPR	SCG	
H57	F	55	PHD	DIETICIAN	HUNTER	B3	5/07			1	6	13	15	1				225	4	4	4	
H58	F	48	2 MS	DIETICIAN	HUNTER	B2	4/07				10	12	11	3				223	4	4	low 4	
H59	F	51	BS	EXEC DIR	HUNTER	B2	4/07		1		1	8	19	7				245	4	4+	4+	
H66	F	55	PHD	MED EVA./ASST	HUNTER	B4	7/07				2	8	15	9	2			253	4/5	4/5	4/5	
H67	F	41	PHD	DIETETICS	HUNTER	B4	7/07				5	7	14	7	1	2		250	4/5	4/5	4/5	
H69	F	59	MBA	COACH	HUNTER	B1	2/07	0	0	0	1	2	9	18	6	0	0	271	5	5	4/5	scg
H73	F	50	MPH, RD	DIETICIAN	HUNTER	B4	7/07				8	9	13	6				233	4	4	4	
H74	F	51	MS	NUTRIT MANA	HUNTER	B4	7/07				7	7	20	2				233	4	4	4	
H79	F	57	BS, MS	REG DIETICIAN	HUNTER	B4	7/07				16	14	6					206	3/4	3/4	3/4	
H81	F	49	PHD	DIETICIAN	HUNTER	B2	4/07				6	13	12	4	1			233	4	4	4	
H85	F	52	MS	DIETICIAN	HUNTER	B2	4/07				2	13	20	1				236	4	4	4	
H91	F	51	MS	PROG COORD	HUNTER	B3	5/07		1	1	4	14	15	2				229	4	4	low 4	
H93	F	50	BS	DIETICIAN	HUNTER	B4	7/07		2	1	12	7	14					210	3/4	3/4	3/4	
H94	F	55	MASTER	MARKETING	HUNTER	B1	2/07				7	17	9	2				216	3/4	3/4	3/4	
H97	F	55	PHD	DIETICIAN	HUNTER	B3	5/07				1	11	19	5				244	4	4	4	
H98	F	63	PHD	DIETICIAN	HUNTER	B2	4/07					4	13	15	4			271	4/5	4/5	4/5	
H82	f	51	MBA	DIETICIAN	HUNTER	single				1	13	12	9	1	0	0	0	212	3/4	3/4	3/4	scg

	percentage	
stage 3/4	10	22.2
Stage 4	29	64.4
Stage 4/5	6	13.3

average TWS	233	50 percentile range (227-239)

trainee protocols

Appendix F

SCTi-MAP Developmental Stage Rating Form

Developmental Stage Rating Form and Description of Action Logic and Characteristics

Leadership Development Profile /Sentence Completion Test

Name: _____

Total Protocol Rating (TPR): _____

Action Logic: _____

The Leadership Development Profile/Sentence Completion Test (LDP/SCTi) has its roots in the Washington University Sentence Completion Test (WUSCT) designed by Jane Loevinger to measure ego development (Loevinger and Wessler, 1970). The LDP/SCTi is a modification of Loevinger's work collaborated by Susann Cook-Greuter, Dal Fischer, David Rooke, and Bill Torbert. The foundation of the LDP/SCTi is constructive developmental theory, which is based on an evolutionary spiral of lived human experience and how one makes sense of those experiences.

The spiral illustrates vertical human development. As development spirals upward our interpretations of experience change and our views of reality and awareness are transformed. There is a logical sequence of growth through the developmental stages, and one lives through the earlier stages before progressing to later stages. Once one has journeyed through an earlier stage, it becomes a part of that person. Vertical development moves from simple to complex with a demonstrated increase in autonomy, flexibility, tolerance for differences and ambiguity, and a simultaneous decrease in defenses.

The stages of vertical development are described as Action Logics. There are three major categories – Pre Conventional, Conventional and Post Conventional, and seven Action Logics within those categories – Opportunist, Diplomat, Expert, Achiever, Individualist, Strategist and Alchemist.

Description of Action Logic and Characteristics

	Total Protocol Rating	*Action Logic/Stage*	*Characteristics*
Pre Conventional	2/3	Opportunist	Manipulative; focused on self; external blame; "I win, you lose mentality"; see feedback as an attack; fragile self control; hostile humor; sees punishment as "an eye for an eye"
Conventional	3	Diplomat	Avoids overt conflict; wants to be a member of the group; seeks approval; conforms to social and group norms and standards; righteousness is prevalent; no self-reflection or recognition of own shortcomings; feedback heard as personal disapproval.
	3/4	Expert	Rules by logic and expertise; strong belief systems; usually cognitively grasps one or more disciplines; perfectionism; serial problem solving; can get stuck in detail; difficulty prioritizing competing demands; sees feedback as criticism.
	4	Achiever	Results and goal oriented; future oriented; seeks consensus; self as agent; initiator; may be unorthodox; self critical; mutuality and equality in relationships; begins to see complexity; accepts behavioral criticism.
Post Conventional	4/5	Individualist	Increased comprehension of complexity; turns inward sees self in relationship; able to adjust behavior to context; systematic problem solving; can create decision paralysis; begin to seek out and value feedback.
	5	Strategist	Creates personal and organizational transformations; recognizes complexity and interrelationships; problem finding not just problem solving; aware of paradox and contradiction in system and self; non-hostile humor; deep appreciation of others; seeks feedback as vital for growth.
	5/6	Alchemist/M agician	Generates social transformations; highly aware of complexity of meaning making, dynamic processes; reframe meaning of situations; seeks spiritual and personal transformations; works with chaos and order; interplay of awareness, thought, action; aware of continuous self re-definition.

References:

Cook-Greuter S. *Postautonomous ego development: A study of its nature and measurement* (Dissertation). Cambridge, MA: Harvard University; (Updated from 1999), 2005.

Cook-Greuter S. *Leadership development framework and profile.* Paper presented at the Development Intensive for Professionals; 2006, June; University of Notre Dame, South Bend, Indiana.

Rook D,Torbert.WR 7 transformations of leadership. *Harv Bus Rev.* 2005; April: 67 – 76.

Torbert B. *Action Inquiry: the secret of timely and transforming leadership.* San Francisco: Berrett-Koehler:2004.

Appendix G

Institutional Review Board Approval Letters for Qualitative Interview

UNIVERSITY OF

Nebraska

Lincoln

Date

Dear   IRB # 2006-09-004 EX

Enclosed please find the results of your Leadership Development Profile Sentence Completion Test along with a description of the Total Protocol Rating (TPR) and the Action Logic. References are included on the bottom of the description, if you would like to explore additional reading on the protocol.

Thank you for your patience while these protocols were being scored. This now completes the second phase of this project.

The third and final phase of the project involves telephone interviews to gather qualitative data on Registered Dietitians in leadership positions. At this time I am asking you to participate in this third and final phase. Data will be collected by an audio-taped semi-structured telephone interview that should take approximately one hour to complete. Audio tapes will be transcribed with anonymity protected in any of the written findings.

Your participation in this study is voluntary. You are free to decide not to allow your taped interview responses to be utilized, and you are free to withdraw at any time without adversely affecting your relationship with the investigator or the University of Nebraska-Lincoln. Your decision will not result in any loss of benefits to which you are entitled. Your responses will remain confidential only available to the principal investigator and kept in a locked file. Your name will be deleted and any identifying information will be destroyed. There are no known risks associated with this study.

Signing and returning this to the investigator indicates that you are giving your consent to be interviewed. It also means that you agree to have your responses included anonymously in the report of this research at professional seminars and any resulting publications.

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COLLEGE OF EDUCATION AND HUMAN SCIENCES
Department of Nutrition and Health Sciences

If you have any questions or comments about this research you may contact Anne Marie Hunter at the address below or at 417-625-2119 or e-mail judeian@sbcglobal.net. You may also contact the Institutional Review Board at the University of Nebraska-Lincoln at 402-472-6965 if you have any questions about your rights as a research participant.

Thank you for helping with this important survey. If you are willing to participate, please sign this and return it to me in the enclosed envelope.

Sincerely

Anne Marie Hunter, MS, RD, LD,FADA
1426 Clinton St.
Carthage, Missouri 64836

Participant's Signature_____ Date _____

Investigator's Signature _____ Date _____

Appendix H:

Interview Protocol

IRB #2006-09-004 EX

Interview Protocol

How Do Registered Dietitians Develop as Leaders?

Name: _____ Date: _____

Organization: _____ Title: _____

Introduction

Thank you for taking the time to speak with me today. Before we begin, do you have any questions about the informed consent document that you signed and mailed to me? If not, then we can continue. I will be recording and transcribing what we say today. If you would like to review a copy of the transcription, please let me know and you will have that opportunity.

Thank you for participating in the first two phases of this study: the survey and the Leadership Development Profile Sentence Completion Test.

All phases of this study are interested in finding out how you, as a Registered Dietitian, have developed as a leader. I really want you perspective, so please feel free to discuss your views. Are you ready to start?

First, please state your name. Thank you.
_____

Interview questions:
1. Tell me how you became involved in leadership roles.

2. Tell me about what interested you in being a leader.

3. What, if anything, did you know about **How** to lead?
     Give me an example.

4. Tell me about your first professional leadership experience.
     What was it like?
     How would you describe the person you were before you took your first leadership position?

5. Who, if anyone, influenced you or encouraged you to be in a leadership position?
    Tell me how they influenced or encouraged you.

6. Has being a leader had an impact on the person you are today?
    Describe in what ways.

7. What has helped you the most to develop as a leader?

8. What positive changes have occurred in your life as a result of holding a leadership position?
    What negative changes have occurred?

9. How has a leadership position in dietetics helped you to grow as a person?

10. What does it mean to you to be a leader in your profession?

11. How does it feel while in a leadership role?
    How do you act?

12. What are the consequences of being a leader?

13. What advice would you give to someone who aspires to leadership in nutrition and dietetics?

Thank you for your times and sharing your comments with me. Your responses will be kept confidential.

As I shared earlier, if you would like to review your transcription, I will gladly send the transcript to you. The transcription will be a verbatim one, so be prepared to see any "uhs" or "ahs" that you say. It is important that the transcription be verbatim so that I do not paraphrase something you have said with an incorrect interpretation.

I would also appreciate it, if I may send my interpretations of your thoughts to you for your validation. Your input will be valued.

Do you have any questions for me at this time? Thank you again for your time.

Appendix I:

Confidentiality Agreement

UNIVERSITY OF

Nebraska

Lincoln

COLLEGE OF EDUCATION AND HUMAN SCIENCES
Department of Nutrition and Health Sciences

IRB # 2006-09-004 EX

Confidentiality Agreement

1. I will protect the privacy and security of any research subjects.
2. I will protect the confidentiality of all proprietary information provided by the research sponsors and the research participants.
3. I will protect the identity of those individuals contributing to the audio –taped interviews.
4. I will share confidential information pertaining to the research protocol and research participants only with the research investigator.
5. I will destroy any copies of the audio-tape and the transcribed interview after they have been delivered to the investigator.

I have read the information above and agree to abide by the terms of this Agreement.

_____   _____
Signature   **Date**