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A Concept Analysis: Assuming Responsibility for Self-Care among Adolescents with Type 1 Diabetes

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Abstract

Purpose—This concept analysis clarifies “assuming responsibility for self-care” by adolescents with type 1 diabetes.

Methods—Walker and Avant’s (2005) methodology guided the analysis.

Results—Assuming responsibility for self-care was defined as a process specific to diabetes within the context of development. It is daily, gradual, individualized to person, and unique to task. The goal is ownership that involves autonomy in behaviors and decision-making.

Practice Implications—Adolescents with type 1 diabetes need to be assessed for assuming responsibility for self-care. This achievement has implications for adolescents’ diabetes management, short- and long-term health, and psychosocial quality of life.

Keywords

Adolescents; assuming responsibility; concept analysis; diabetes; nursing

A major developmental task for adolescents as they transition to young adulthood is assuming responsibility for themselves (Arnett, 1998, 2000; Arnett & Galambos, 2003). Achievement of this developmental task in relation to their diabetes care is critical for the approximately 186,300 children and adolescents with diabetes in the United States (National Diabetes Information Clearinghouse, 2008) since these young people will eventually leave their parents’ homes. There is not a good understanding of this developmental task, which may be related to the use of different conceptual and operational definitions. Some authors conceptualize and measure adolescents’ responsibility for diabetes care as a parent’s, adolescent’s, or shared role (Anderson, Auslander, Jung, Miller, & Santiago, 1990; Beveridge, Berg, Wiebe, & Palmer, 2006; Holmes et al., 2006; Leonard, Skay, & Rheinberger, 1998) and others as the degree of self-care autonomy the adolescent has (Drotar & Ievers, 1994; Hanna & Guthrie, 2003; Hanna, Juarez, Lenss, & Guthrie, 2003; Miller & Drotar, 2003). In addition, the concept of assuming responsibility is sometimes confused with a related term - management. Some view and measure responsibility for self-care as distinct from management, compliance, or adherence (Anderson, Brackett, Ho, & Laffel, 1999; Anderson & Laffel, 1997; Cook, Herold, Edidin, & Briars, 2002; Holmes et al., 2006; La Greca, 1998; Miller & Drotar, 2007; Reid, Dubow, Carey, & Dura, 1994; Wysocki, Taylor et al., 1996). However, responsibility for self-care and self-management are also used interchangeably (Schilling, Grey, & Knafl, 2002a). These focuses on role or on management (as well as on compliance or adherence) are all limiting because they do not

offer an understanding of this developmental task - specifically, how these young people *become* the managers of their own care.

The purpose of this article is to report the findings of a concept analysis of “assuming responsibility for self-care” by adolescents with type 1 diabetes with the intent to clarify this concept. Clarity is specifically needed to differentiate responsibility for self-care from management, adherence, or compliance and to guide assessment or measurement of responsibility. Walker and Avant (2005) offer a concept analysis method to clarify vague concepts, and this method was used with a focus upon identifying major characteristics or attributes and highlighting antecedents and consequences of the concept. It is essential that the concept of “assuming responsibility for self-care” is clearly defined so that researchers and clinicians are communicating about the same phenomenon and that measures of responsibility for diabetes self-care are used that are consistent with the conceptualization. If there is an agreed-upon conceptual definition, then this developmental task and the variables that influence it can be described and measured. Subsequently, strategies to optimally promote the transition to full responsibility can be implemented.

Methods

A concept analysis was chosen due to the vagueness in the use of the concept of assuming responsibility for self-care among adolescents with type 1 diabetes in the literature. Concept analysis is a rigorous method to provide a shared understanding of a concept. Walker and Avant’s (2005) method of concept analysis was used; the method delineates procedural steps in conducting a concept analysis. Two of these steps have already been discussed—*selecting a concept* (assuming responsibility for self-care) and *determining the purpose of the analysis* (clarification of concept). The next step is to *identify uses of the concept in the literature*. The uses were limited to literature with adolescents with type 1 diabetes because most of the existing literature on assuming responsibility for self-care is about this condition. Although it would be valuable to know if there are characteristics of responsibility that are similar and different across various conditions and, in fact, there have been advocates for examining non-categorical approaches (Stein & Jessop, 1989), there is very little information on responsibility for other conditions upon which to generalize. Therefore, a conservative approach was taken, and only the diagnosis about which most of the literature exists was examined. In addition, there could be differences due to the unique demands of various conditions. The search of the literature is further delineated in the Sample. Next, following Walker and Avant’s steps, attributes or essential characteristics of the term were identified along with a *model case* that exemplifies the attributes and a *related case* that is similar, yet does not have all the attributes of the concept. In addition, *antecedents* (influential factors that occur prior to the concept) and *consequences* (outcomes of the concept) were identified. The process of identifying the attributes, antecedents, and consequences are further described in the Data Analysis. The final procedural step was *defining the empirical referents*; assessment or measurement of the concept will be addressed in the Results.

Sample

A search was conducted of all available dates of CINAHL (1937-2009), PsychINFO (1967-2009) and MEDLINE (1950-2009) using the combined search words: adolescents, responsibility, and diabetes. Filters were used to exclude non-English articles. In addition, articles by known experts who addressed the concept were retrieved. For example, only two articles by Anderson and colleagues, who are known experts in the area, were cited in the databases; perhaps because their early work in the area did not use the same key words. A total of 44 articles was selected for review based on inclusion and exclusion criteria.

Publications were included if

- the term was used as a *process* of assuming responsibility for management, care, or condition rather than as an *outcome* such as management, adherence, or compliance;
- the focus of the article was on behavior rather than pathophysiology or physiology; and
- the focus was on the *individual adolescent* assuming responsibility rather than on transition in healthcare services or parental perspectives on letting go, which are related yet different concepts.

Publications were excluded if

- they were outside the United States and not readily available;
- they were dissertations or book chapters that would not have gone through the peer-review process; or
- they did not focus on type 1 diabetes as a specific condition in the analysis.

PROCEDURE

Articles (opinions, qualitative or quantitative empirical reports, or reviews) were not judged for their quality. The introduction and literature review sections of articles were only reviewed in relation to their conceptual use of the terms. This was an attempt to not review empirical findings because this would be the next step of concept development, specifically concept synthesis. Most articles did not identify a conceptual framework or theory. Significant words, phrases, or statements referring to responsibility were extracted and grouped according to categories for attributes (major characteristics), antecedents (influential variables), and consequences (outcome variables) by the first author. Inter-rater reliability was conducted in which identified statements were independently placed, by the second author, into the identified attributes, antecedents, and consequences categories, resulting in an inter-rater agreement of 90%. Then, the statements and categories were jointly reviewed by both authors, discussing until 100% agreement was reached. Two statements were determined to each have two separate antecedents within them and were accordingly separated. Throughout the data analyses, a journal of the search; excerption of words, phrases, and/or statements; methodological issues; and decisions were kept as an audit trail to ensure confirmability.

Results

The results are reported for the extracted attributes, antecedents, and consequences. In addition, a Model Case and a Related Case are provided based on the analysis.

Attributes of Assuming Responsibility for Self-care

Based upon the concept analysis, the identified words, phrases, and sentences were grouped into four categories of attributes: (a) a diabetes-specific process within the context of adolescent development; (b) a process that occurred daily, was gradual, was individualized to the person, and was unique to each self-care task; (c) a process with a goal of ownership; and (d) a process involving autonomy in behaviors and decision-making. Table 1 provides examples of words, phrases, and sentences reflecting each attribute.

First, assuming responsibility was discussed as a *process* reflected in statements referring to transitions, change over time, growth and development, and/or developmental periods of childhood or adolescence. The process was *specific to diabetes management* (Anderson & Laffel, 1997; Carey, Reid, Horner, & Dubow, 1997; Drotar & Ievers, 1994; Leonard et al.,

1998; Low, Massa, Lehman, & Olshan, 2005; Miller & Drotar, 2003; Ott, Greening, Palardy, Holderby, & DeBell, 2000; Schilling et al., 2002a; Weissberg-Benchell, Goodman, Antisdell Lomaglio, & Zebracki, 2007) and occurred within the context of adolescent development (Anderson & Wolpert, 2004; Beveridge et al., 2006; Christian, D'Auria, & Fox, 1999; Cook et al., 2002; Hanna et al., 2003; Helgeson, Reynolds, Siminerio, Escobar, & Becker, 2008; Ingersoll, Orr, Herrold, & Golden, 1986; La Greca, 1998; La Greca, Follansbee, & Skyler, 1990; Leonard et al., 1998; McNabb, Quinn, Murphy, Thorp, & Cook, 1994; Neumark-Sztainer et al., 2002; Schilling, Knafel, & Grey, 2006; Soutor, Chen, Streisand, Kaplowitz, & Holmes, 2004). Most articles referred to adolescent psychosocial development related to autonomy or independence (Beveridge et al., 2006; Dashiff, 2003; Dashiff & Bartolucci, 2002; Follansbee, 1989; Hanna, 2006; Hanna, Dimeglio, & Fortenberry, 2005; Hanna & Guthrie, 2000a, 2001; Hanna et al., 2003; Karlsson, Arman, & Widblad, 2008; Low et al., 2005). Second, the process had several characteristics. It was referred to as *gradual* in nature in most of the writings (Anderson et al., 1990; Anderson & Laffel, 1997; Christian et al., 1999; Giordano, Pettila, Banion, & Neuenkirchen, 1992; La Greca, 1998; Miller & Drotar, 2007; Ott et al., 2000). Two authors noted that it *occurred on a daily basis* (Dashiff, 1993; McNabb et al., 1994). The process was also *unique to each individual* (Christian et al., 1999; Ott et al., 2000). Some noted that the process was *unique to different regimen tasks* (Anderson & Laffel, 1997; Christian et al., 1999). The third attribute of assuming responsibility for self-care was that the goal of this process was ownership for diabetes care. This goal was reflected in the focus on the adolescent being the primary individual responsible (Anderson et al., 1999; Anderson & Wolpert, 2004; Carey et al., 1997; Christian et al., 1999; Cook et al., 2002; Follansbee, 1989; Ingersoll et al., 1986; La Greca, 1998; McNabb et al., 1994; Naar-King, Ellis, Idalski, Frey, & Cunningham, 2007; Neumark-Sztainer et al., 2002; Ott et al., 2000; Schilling et al., 2002a; Schilling et al., 2006). The final characteristic was that the *process involved autonomy*. Many articles referred to adolescents' independence or autonomy in their self-care (Anderson et al., 1999; Beveridge et al., 2006; Christian et al., 1999; Dashiff, 1993, 2003; Dashiff & Bartolucci, 2002; Drotar & Ievers, 1994; Follansbee, 1989; Karlsson et al., 2008; Ott et al., 2000; Schilling et al., 2002a; Weissberg-Benchell et al., 2007; Wysocki, Taylor et al., 1996). Some were more specific, noting that the autonomy was in performing and/or making decisions related to the diabetes care (Hanna et al., 2005; Hanna & Guthrie, 2000a, 2003; Hanna et al., 2003; Miller & Drotar, 2003, 2007; Schilling et al., 2006).

Model Case

The following hypothetical situation is a clinical example of an adolescent with diabetes and exemplifies the attributes of assuming responsibility for self-care: (a) a diabetes-specific process within the context of adolescent psychosocial development; (b) a process that occurs daily, is gradual, is individualized to the person, and unique to each self-care task; (c) a process with a goal of ownership; and (d) a process involving autonomy in behaviors and decision-making.

Angie is a 17-year-old who has type 1 diabetes and is being seen in the Diabetes Clinic. Over the past few years, you have seen Angie mature into an independent young woman in all areas of her life as well as become more independent in her diabetes care. Since she has done so well with being responsible, you ask her some questions. She quickly points out being responsible for her diabetes care is an everyday thing for her; every day she has to check her glucose, adjust her insulin dose, follow a meal plan, and exercise. She points out that this has happened gradually and that she has been more independent in the last year than when she was younger. She also tells you more about her independence; she states that when she competes at a track meet, she makes decisions about when to check the blood glucose level, what insulin dose to give, and what snacks to bring to the meet. And

she follows through with doing those things. Angie tells you that checking her blood glucose level at home was one of the first things that she did independently, and the most recent thing that she was able to do independently was adjusting her insulin based upon her exercise when away from home. She states, "I want to have sole responsibility for my diabetes care by the time I leave home to go to college." She says that she will be fully responsible when she is able to be totally independent in doing all the diabetes care tasks and being the one who makes the decision about them without any reminders.

Related Case

A related hypothetical clinical case is an example of the concept of assuming responsibility for self-care that does not involve all the defining attributes of the concept. Specifically, this case exemplifies a process that is specific to the diabetes regimen and is daily and individualized to this person, but it is not gradual. In addition, although the process of managing diabetes is within the context of adolescent psychosocial developmental, it is not optimal development, and there is dependence on parents rather than development of independence. In addition, there is no goal of ownership of care for this adolescent and there is a lack of autonomy in behaviors and decision-making. In this scenario, diabetes control is good, but the young person is not achieving this diabetes-specific developmental task. This case exemplifies a related concept - management of the treatment regimen - and it is consistent with self-management as defined by Schilling and colleagues (2002a), which focuses on the process of implementing the treatment regimen with a goal of glucose control.

Tim, who also has diabetes and is 17 years of age, is seen in your clinic. Tim's glycemic control is good. The treatment regimen that was outlined by his physician is followed precisely. His blood glucose levels are checked four to five times a day and his insulin dose is appropriately adjusted based upon his blood glucose readings. Tim does exactly what his parents tell him to do regarding his diabetes and does not independently make any adjustments. For example, when Tim competes in swimming, his parents find him at the meet to give him the snack they have brought and check his blood glucose level. Another example of Tim's dependence on his parents is that they will call to tell him it is time to check his glucose when he is at a friend's house. If his blood glucose reading is high, his parents will make the decision on how to adjust the insulin. Tim's parents tell him that when he goes to college it will be time for him to check his blood glucose and administer his insulin.

Antecedents of Assuming Responsibility for Self-Care

Based upon this concept analysis, the identified words, phrases, and sentences were grouped into four categories of antecedents: (a) the diabetes condition or treatment regimen, (b) the adolescent's readiness, (c) expectations for responsibility, and (d) interactions with others. Table 2 provides examples of words, phrases, and sentences reflecting each antecedent.

First, assuming responsibility for self-care was described as being influenced by the *diabetes condition and treatment regimen*. The diabetes condition was discussed by some authors in terms of being a challenge to adolescents' independence and, at times, increasing their dependence (Dashiff & Bartolucci, 2002; Karlsson et al., 2008). Others discussed how the demands of the treatment influenced assuming responsibility (Allen, 1983; Carey et al., 1997; Drotar & Ievers, 1994; McNabb et al., 1994; Weissberg-Benchell & Glasgow, 1997), and one suggested that the duration of the diabetes condition was influential (Reid et al., 1994). One article noted that the degree of diabetes control could influence the degree of adolescent responsibility for self-care (Helgeson et al., 2008).

The next category of antecedents was related to the adolescent, particularly in terms of his or her *readiness*. Readiness was often related to abilities, knowledge, development, and/or mastery (Anderson & Wolpert, 2004; Cook et al., 2002; Dashiff, 2003; Follansbee, 1989; Giordano et al., 1992; Holmes et al., 2006; La Greca et al., 1990; Leonard, Kratz, Skay, & Rheinberger, 1997; Leonard et al., 1998; Pacaud et al., 2007; Reid et al., 1994; Schilling et al., 2002a; Weissberg-Benchell et al., 2007; Wysocki, Taylor et al., 1996). Readiness was also related to motivation. Adolescents were motivated by their desire for independence (Christian et al., 1999; Giordano et al., 1992; Hanna & Guthrie, 2000a) and also the desire to decrease perceived parental burden (Giordano et al., 1992; Hanna & Guthrie, 2000a) or to avoid negative messages from their parents (Giordano et al., 1992).

The next antecedent was related to *expectations for responsibility* that were held by the adolescents and by others. Often it was noted that parents held this expectation (Anderson et al., 1990; Anderson et al., 1999; Anderson & Laffel, 1997; Giordano et al., 1992; Ingersoll et al., 1986; Weissberg-Benchell & Glasgow, 1997), and a few times it was noted as an expectation by healthcare providers (Anderson et al., 1999; Follansbee, 1989; Giordano et al., 1992). One noted that it was an expectation of the adolescents themselves (Weissberg-Benchell & Glasgow, 1997). Sometimes societal expectations in general were mentioned directly (Dashiff & Bartolucci, 2002; Ingersoll et al., 1986), and other times responsibility was noted to be considered a norm or the customary behavior for these young people (Anderson & Wolpert, 2004; Dashiff, 1993; Gage et al., 2004; Hanna, Dimeglio, & Fortenberry, 2007; La Greca, 1998; McNabb et al., 1994; Reid et al., 1994; Schilling et al., 2002a; Weissberg-Benchell et al., 2007; Wysocki, Taylor et al., 1996).

The final antecedent to assuming responsibility for self-care was *interactions with others*. One article noted the influence of the environment in general (Weissberg-Benchell & Glasgow, 1997). Most articles noted influential interactions with parents; in some, the general importance of parental involvement was noted (Anderson & Laffel, 1997; Dashiff, 2003; Follansbee, 1989), and in others, parental involvement, both good and bad, was more specifically described in terms of parental control, connectedness, encouragement, support, supervision, and communication (Anderson et al., 1990; Christian et al., 1999; Dashiff & Bartolucci, 2002; Faulkner, 1996; Hanna & Guthrie, 2001; Hanna et al., 2003; Leonard et al., 1998). Some authors suggested specific ways parents could be positively involved to promote assumption of responsibility (Hanna, 2006; Hanna et al., 2005). Dynamics beyond parent-adolescent relationships were also noted, such as mothers and fathers changing their relationships with one another during this process of adolescents assuming responsibility for self-care (Dashiff, 1993).

Consequences of Assuming Responsibility for Self-Care

Based upon the concept analysis, the identified words, phrases, and sentences were grouped into four categories of consequences: (a) diabetes management, (b) short- and long-term health outcomes, (c) psychosocial quality of life, and (d) adolescents' beliefs in themselves and their abilities. Table 3 provides examples of words, phrases, and sentences reflecting each consequence.

A major consequence of assuming responsibility was *diabetes management* (or adherence and compliance) relative to the treatment regimen (Anderson et al., 1999; Anderson & Laffel, 1997; La Greca, 1998; Schilling et al., 2006; Wysocki, Taylor et al., 1996). Other consequences of assuming responsibility were the more *immediate health outcome* of metabolic control (Anderson et al., 1990; Anderson et al., 1999; Anderson & Laffel, 1997; Dashiff, 2003; Gage et al., 2004; Giordano et al., 1992; Helgeson et al., 2008; La Greca et al., 1990; Soutor et al., 2004; Wysocki, Taylor et al., 1996) or the *more long-term one* related to serious health complications from poor metabolic control (Gage et al., 2004). The

next consequence of assuming responsibility was related to various aspects of adolescents' *psychosocial quality of life*. Some authors discussed well-being in general (Helgeson et al., 2008) and some as more specific to achieving developmental outcomes and achieving adulthood (Christian et al., 1999; Dashiff & Bartolucci, 2002; Hanna et al., 2007). Assuming responsibility was also noted to have potentially negative consequences for well-being, such as stressed parent-adolescent relationships or conflict (Drotar & Ievers, 1994; Giordano et al., 1992; Leonard et al., 1998). Finally, some noted that assuming responsibility influenced adolescents' beliefs in themselves and their abilities ((Follansbee, 1989; Ott et al., 2000; Wysocki, Taylor et al., 1996).

Definition of Assuming Responsibility for Self-care

On the basis of this concept analysis, assuming responsibility for self-care among adolescents with type 1 diabetes is defined as a process specific to diabetes within the context of adolescent development that is gradual, daily, individualized for each adolescent, and unique to specific diabetes care tasks. The goal of the process is ownership of diabetes care that involves autonomy in behaviors and decision-making. Assuming responsibility is influenced by the diabetes condition and/or treatment regimen, the adolescent's readiness, expectations for responsibility, and interactions with others. The consequences of assuming responsibility for self-care are diabetes management, short- and long-term health outcomes, psychosocial quality of life, and adolescents' beliefs in themselves and their abilities.

Empirical Referents

The attributes delineated in this concept analysis of assuming responsibility for diabetes self-care provide a guide for measuring this concept. First, the measures need to assess the process in a way that indicates the degree of responsibility (such as low to high). Second, the items need to be specific to diabetes care and address tasks that occur daily. Third, to reflect ownership of the self-care the items need to reflect independence in both behaviors and decisions related to the diabetes tasks. Several measures do exist such as the Diabetes Family Responsibility Questionnaire (Anderson et al., 1990) and The Diabetes Responsibility Scale (Rubin, Young, & Peyrot, 1989). In the Diabetes Family Responsibility Questionnaire by Anderson and colleagues (1990), the diabetes task questions reflect who performs, but not who makes decisions regarding daily diabetes tasks. The Diabetes Responsibility Scale (Rubin et al, 1989) does measure both behaviors and decision-making for diabetes tasks (that include daily tasks). In Anderson and colleagues' (1990) measure, participants are asked to note who does the task - child alone, shared between parent and child, or parent alone. In the Diabetes Responsibility Scale by Rubin and colleagues' (1989), there are 5 potential responses from *child all the time* to *parent all the time*, with the middle score reflecting involvement of both child and parent. Information from these measures can provide information on whose role it is; however, to reflect responsibility as defined in this concept analysis, these scales need to be scored as to the degree (low level to high level) of child independence from parent in performing and making decisions about diabetes care tasks.

DISCUSSION

This analysis provides an understanding of the concept of assuming responsibility for self-care for adolescents with type 1 diabetes as a process that is congruent with theoretical and empirical literature. Achievement of self-responsibility is a developmental task for the general population of adolescents (Arnett & Galambos, 2003). Empirical findings show that older adolescents with diabetes assume more self-care responsibilities than those who are younger (Anderson et al., 1990; Anderson et al., 2002; Drotar & Ievers, 1994; Drozda, Allen, Standiford, Turner, & McGain, 1997; Hanna & Guthrie, 2003; Ingersoll et al., 1986;

La Greca, 1998; McNabb et al., 1994; Ott et al., 2000; Reid et al., 1994). This process is situated within the context of adolescent development, which is congruent with theoretical literature postulating that transitions occur within the context of development (Elder, 1991). In addition, it is congruent with empirical findings; adolescents' independence specific to diabetes management has been related to their independence in typical adolescent activities (Drotar & Ievers, 1994; Hanna & Guthrie, 2003). The process of assuming responsibility is unique to the individual; for example, there are times when adolescents do not increase their responsibility in response to parental decreases (Ingersoll et al., 1986) or are given more responsibility than they are developmentally ready to assume (Wysocki, Meinhold et al., 1996). The variation of assumption of responsibility for specific tasks is also supported in empirical findings (Anderson et al., 1990; Anderson et al., 2002; Drotar & Ievers, 1994; Leonard et al., 1998).

The goal of this process of assuming responsibility for self-care is ownership of one's diabetes care and includes both behavioral and decision-making autonomy. One study found that illness ownership was related to responsibility (Beveridge et al., 2006). In addition, this goal of ownership is congruent with classic adolescent developmental literature, which proposes that a major task is to become self-governing (Hill & Holmbeck, 1986). The focus on autonomy is also consistent with adolescent developmental literature in which autonomy is viewed as an important aspect of development for adolescents in general (Steinberg, 1990), but especially for those with chronic conditions (Holmbeck et al., 2002). The importance of autonomy is also supported by self-determination theory (Ryan & Deci, 2000), and autonomy is consistently defined as self-governing by a self-motivated person (Soenens et al., 2007). The inclusion of both behavioral and decision-making autonomy is congruent with classic definitions of autonomy in the developmental literature that highlight reliance on oneself in behaviors as well as decisions (Hill & Holmbeck, 1986; Sessa & Steinberg, 1991). The importance of decision-making beyond just independence in behaviors is also congruent with self-determination theory, in which autonomy and self-governance involve acting upon one's goals (Soenens et al., 2007). Research findings support the importance of the decision-making aspect of diabetes-specific responsibility, which has been positively correlated with the health outcome of metabolic control (Hanna & Guthrie, 2003).

The antecedent of the demands of diabetes and its treatment is consistent with a categorical or disease-specific approach and the theoretical writings of Rolland (1994), who proposed that characteristics of an illness, as well as the time and energy involved in the treatment regimen, influence responses. The diabetes regimen requires daily attention to monitoring glucose, administering insulin, diet and exercise, and managing the complex interplay among them. The uniqueness of the diabetes regimen supports the need for a categorical or disease-specific approach when studying responsibility among adolescents with type 1 diabetes. The antecedent of the demands of diabetes is also supported by empirical studies in which the burden of assuming responsibility for diabetes management was a barrier to adolescents assuming such responsibility (Hanna & Guthrie, 2000a, 2000b). The importance of individual adolescent characteristics is also supported in the literature; adolescence is known for biological, behavioral, emotional, and cognitive changes (Montemayor & Flannery, 1990) that would influence assuming responsibility for self-care.

Adolescent readiness is closely related to another antecedent - interactions with others, particularly parents and peers. Developmental transitions are noted to occur within relationships with parents (Sessa & Steinberg, 1991). Autonomy development is positively influenced when parents use a relatively authoritative parenting style that reflects reasoning, discussing, advising, and supervising (Baumrind, 1991) or parental support for autonomy based upon self-determination theory (Soenens et al., 2007). In the context of diabetes,

parental involvement has been advocated for better metabolic control by some (Anderson, 2001). Others have recommended parental support for autonomy development, the use of reasoning, and non-directive guidance closely aligned with authoritative parenting (Hanna et al., 2005). During adolescence, peers become important (Brown, Dolcini, & Leventhal, 1997; Freeman & Brown, 2001; Wills, Resko, Ainette, & Mendoza, 2004). For older adolescents, romantic partners become important (Collins, Cooper, & Albino, 2002; Zimmer-Gembeck, 2002). Relationships with both peers and romantic partners have the potential to influence these adolescents in assuming responsibility for self-care; daily interactions with these persons can either provide support for or impede adolescents' responsibility for self-care.

It is interesting that consequences of assuming responsibility can be both positive and negative; that is, there can be difficulties as well as positive outcomes. The consequence of poor management has received considerable focus in the literature and it is well documented that it is an issue for adolescents with type 1 diabetes (Anderson et al., 1990; Anderson, Ho, Brackett, Finkelstein, & Laffel, 1997; Bearman & La Greca, 2002; Du Pasquier-Fediaevsky, Chwalow, & Tubiana-Rufi, 2005; Hanson, Henggeler, & Burghen, 1987a, 1987b; Harris et al., 2000; Jacobson et al., 1990; Jacobson et al., 1987; Johnson, Silverstein, Rosenbloom, Carter, & Cunningham, 1986; La Greca et al., 1995; Miller-Johnson et al., 1994; Wysocki, Meinhold et al., 1992). The focus for clinicians and researchers has been on diabetes management, which is critical in the maintenance of metabolic control and the reduction of serious health consequences such as retinopathy, nephropathy, neuropathy, and cardiovascular disease (Diabetes Control and Complications Research Group, 1994). The presumption is that difficulties in assuming responsibility contribute to poor management; however, this area of research is still in the beginning stages.

Another consequence, psychological quality of life, also can be positive or negative. A negative quality of life is more documented in the literature. For example, parent-adolescent conflict is known to be an issue in this population (Anderson et al., 2002; Wysocki, Hough, Ward, & Green, 1992). There is some evidence that parent-adolescent conflict is related to the child's level of responsibility (Leonard et al., 1998; Miller & Drotar, 2003). Again, the presumption in the literature is that assuming responsibility will contribute to healthy adult development; however, research in this area is also just beginning.

The multiple possible consequences of assuming responsibility provide for greater understanding of the complexity of this process for a developing person. They offer insight into the way in which health outcome indicators and quality of life may conflict with one another during adolescence. For example, families may become overprotective when an adolescent has a chronic condition, which may facilitate good management in the short term, but the overprotection may inhibit autonomy development (Holmbeck et al., 2002).

The potential feedback loops among the antecedents, attributes, and consequences are also highlighted in this concept analysis. For example, adolescents' readiness influences their assuming responsibility and, then, through their assumption of responsibility, it influences their beliefs about themselves and their abilities, which in turn influences their readiness. In addition, the antecedent diabetes condition, specifically the state of diabetes control, influences how much responsibility adolescents have and, in turn, whether this responsibility is good or bad can lead to a consequence of good or poor metabolic control.

This concept analysis differentiates the process of assuming responsibility for self-care from the outcomes of compliance, adherence, and/or self-management, and it is important to be cognizant of the differences in the use of these terms. Compliance, adherence, and self-management have been used interchangeably; all of these terms revolve around the degree to

which the treatment regimen is enacted and are presumed to influence the person's health. However, they differ in the degree individuals are actively involved; compliance or adherence involves healthcare professionals prescribing behaviors for patients to follow (Karoly, 1993), but self-management involves active patient participation (Coates & Boore, 1995) and life-style adaptation (Kyngas & Hentinen, 1995). Assuming responsibility for self-care differs in essential ways from compliance, adherence, and self-management. To illustrate these differences, this paper's definition of assuming responsibility for self-care is contrasted with Schilling and colleagues' (2002b) definition of self-management for children and adolescents with diabetes and their families; in that definition self-management is viewed as a process with goals of glucose control, execution of the treatment regimen, and health or well-being. First, the process of self-management revolves around managing diabetes, whereas assuming responsibility for self-care revolves around becoming autonomous in self-care. Second, the primary goal of self-management is glucose control and health, whereas the goal of assuming responsibility for self-care is more developmental -- ownership of one's care. To illustrate the difference, the Related Case was delineated as more of an example of self-management and the Model Case as an example of assuming responsibility for self-care.

Importantly, we are not advocating for the use of one term over the other, but that we must be clear about the issue of concern. If one is concerned more with *directly* influencing health and how one manages one's diabetes, then the concept of interest is self-management. However, if the concern is with the developmental task of becoming autonomous, then the concept of interest is assuming responsibility for self-care.

Limitations

There are limitations to this and to any concept analysis. First, there may have been subjectivity in analysis; the primary reviewer could have had a bias in interpreting the phrases and the categories into which they were placed. In an attempt to address this, an inter-rater reliability was conducted on the categorization of the statements. Second, there is the possibility that relevant articles discussing the concept of assuming responsibility for diabetes self-care were missed. Indeed, some articles by known experts were not initially retrieved based on the searches; however, these articles were added. Third, concepts always evolve based upon the science. This concept analysis for assuming responsibility for diabetes self-care may need to be revised in the future as more scientists study this phenomenon.

How Do I Apply This Evidence to Nursing Practice?

This concept analysis provides guidance for clinicians working with adolescents with type 1 diabetes. These individuals are going through the process of assuming responsibility during adolescence, and thus clinicians are encouraged to assess this variable when working with them. Because assuming responsibility is a process, assessing and measuring the degree of independence an adolescent has is advocated rather than assessing whose role it is to perform a particular task or make particular decisions. Because the goal of ownership involves both autonomy in behaviors and in decision-making, assessments or measures of assuming responsibility need to include both. Clinicians need to remember that this process will happen gradually, differently for each individual, and at different rates for each diabetes regimen task. Multiple influential factors and potentially differing outcomes need to be considered when studying adolescents' assumption of responsibility.

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Table 1

Select Examples of Attributes of Assuming Responsibility for Self-care

	Process Specific to Diabetes Care Within the Context of Adolescent Development
Beveridge, Berg, Wiebe, & Palmer (2006)	"As part of this process of growing independence, adolescents take on greater responsibility in managing the disease independently" (p. 820)
Christian, D'Auria, & Fox (1999)	"Adolescence is a key developmental transition for ... assuming primary responsibility" (p. 255)
	Process that is Daily, Gradual, and Individualized to Task and Person
McNabb, Quinn, Murphy, Thorp, & Cook (1994)	"responsible for the day-to-day management" (p. 121)
Ott, Greening, Palardy, Holderby, & DeBell (2000)	"gradually assumed responsibility" (p. 59); "Each child evaluated independently" (p. 60)
	Process with Goal of Ownership
Naar-King, Ellis, Idalski, Frey, & Cunningham (2007)	"primarily responsible" (p. 179)
Schilling, Knafel, & Grey (2006)	"direct responsibility" (p. 421), "in charge of diabetes care" (p. 421)
	Process that Involves Autonomy in Behaviors and Decision-Making
Hanna & Guthrie (2003)	"the independent functioning aspect, the decision-making aspect" (p. 284)
Karlsson et al. (2008)	"autonomy in diabetes self-management" (p. 564)

Table 2

Select Examples of Antecedents of Assuming Responsibility for Self-care

Author/Article	Diabetes Condition and Treatment
Drotar & Ievers (1994)	"treatment-related responsibilities may be influenced by the unique treatment-related demands" (p. 266)
Helgeson, Reynolds, Siminerio, Escobar, & Becker (2008)	[it is possible that] "diabetes outcomes are influencing who is involved in diabetes self-care" (p. 498)
	Adolescent Readiness
Anderson & Wolpert, 2004	"needs to develop personal mastery of the intricacies of diabetes management" (p. 347)
Giordano, Pettila, Banion, & Neuenkirchen (1992)	"influenced by their level of development" (p. 237); "take on this responsibility to avoid hearing negative messages or to relieve the parent's discomfort" (p. 238); and "As children move into puberty, their desire for independence increases ... motivator for the adolescent to take on more self-care responsibility" (p. 239).
	Expectations for Responsibility
Dashiff, & Bartolucci (2002)	"societal demands of social and personal responsibility" (p. 98)
Giordano et al. (1992)	"care providers and parents often expect children to assume responsibility for diabetes self-care tasks" (p. 235)
	Interactions with Others
Anderson, Auslander, Jung, Miller, & Santiago (1990)	"the diabetic teen-ager continues to need parental supervision and support" (p. 478)
Hanna & Guthrie (2001)	"if parental involvement is equal to parental control, it is counter to adolescents' assumption of diabetes management responsibility" (p. 210)

Table3

Examples of Consequences of Assuming Responsibility for Self-care

	Diabetes Management
Anderson & Laffel (1997)	"children who have more responsibility for diabetes management tasks have more mistakes in their self-care, are less adherent" (p. 280)
Schilling, Knafel, & Grey (2006)	"although youth assume more responsibility for performing regimen tasks as they mature, their adherence to the regimen decreases over the course of adolescence" (p. 413)
	Short- and Long-Term Health Outcomes
Anderson, Brackett, Ho, & Laffel (1999)	"children and adolescents who assume early responsibility for their diabetes management are ... in poorer glycemic control" (p. 713)
Gage et al. (2004)	"In order to avoid the development of longer-term complications, people with diabetes must assume responsibility for regulating their blood glucose levels" (p. 334)
	Psychosocial Quality of Life
Hanna, DiMeglio, Fortenberry (2007)	"greater independence for adolescents" (p. 245)
Helgeson, Reynolds, Siminerio, Escobar, & Becker (2008)	"implications of the distribution of responsibility for psychological health is an issue" (p. 498)
	Adolescents' Beliefs in Self and Abilities
Follansbee (1989)	"assume responsibility for management in a way that promotes self-efficacy" (p. 348)
Hanna et al. (2007)	"increased confidence in abilities, especially in preparation for the future" (p. 245)