

The Use of Social Cognitive Theory in Nursing Graduate Theses in Turkey: A Systematic Review

Abstract

Aim: This study was conducted to evaluate the postgraduate nursing theses made using Social Cognitive Theory (SBT) in Turkey.

Methods: This descriptive study based on the literature was carried out using master's and Ph.D. theses in nursing. In July 2019, 51 theses were accessed by selecting the field of medicine from the detailed search bar of the database of the National Thesis Center and typing the search terms: social cognitive, social learning, social cognitive learning, model, hypothesis and theory. The titles and abstracts of these theses were analyzed using purposeful sampling. Number and percentage calculation, which are among the descriptive statistics, were used in the evaluation of the data.

Results: A total of 15 SCT-based nursing theses between the years of 2003 and 2015 were used. Of them, 14 of the theses are doctorate and one is a master's thesis. With six studies, it was determined that SBT was used mostly in the department of public health nursing. Of the studies, 40% was experimental, and 53.3% was quasi-experimental. It was determined that students constituted the sample in more than half of the studies (64.2%) and that the implemented programs were effective. Of the theses, seven used the primary sources where Bandura explains his theory, and three used SCT and provided similar results. Of the remainder, three formed the conceptual-theoretical-empirical structure and were conducted accordingly, and four were associated SCT concepts with their results and discussed them.

Conclusion: It can be said that the rate of SCT use in nursing theses in Turkey is low compared to the international literature. SCT should be used in nursing practices and research due to the positive effects of several nursing programs that use it.

Keywords: Social cognitive theory, Nursing, Theses, Research

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Introduction

Theories provide guidance for summarizing the research results and determining the new and priority studies. The aim of the theory is to summarize the information in a systematic way, to make scientific findings generalizable, and to direct new studies.¹ Nursing uses other disciplines to meet the physiological, psychological, sociocultural, developmental and spiritual needs of the individual. To this end, many hypotheses/models/theories other than nursing have provided a basis for and guided nursing practices. Basic human need, the period of development, and psychosocial theories were mainly used in the development of models and theories in nursing.^{2,3}

The Social Cognitive Theory (SCT) is one of the basic theories of social psychology and is often used to explain health behaviors.⁴ Albert Bandura first published the Social Learning Theory in 1977 then extended it after 1980 and named it as Social Cognitive Theory. This theory focuses on the change in behavior and the cognitive process that affects the change. The fact that people learn by observing the behaviors of others and drawing conclusions from them is the basic principle of SCT.⁵ According to SCT, individual, behavior and environment are in constant interaction with each other, and as a result of this interaction, the individual learns information.⁴⁻⁶ Bandura indicates that social interaction is the main factor in the shaping and changing of human behavior. Each individual in society observes other individuals and learns something from all of them. Individuals can self-regulate by controlling and taking responsibility for their own behaviors.^{6,7}

People learn behaviors or repeat the previously learned behaviors by observing, imitating and modeling methods in their interaction with their social environment. While people exhibit the positive/approved behaviors they observe, they do not exhibit the negative behaviors encountered.⁸ In health education, it is important to change negative health behaviors and to ensure the continuity of the changing behaviors. Bandura indicates that individuals' learning only through their own experiences will be very limited learning.^{4,7} Nurses support individuals in society in improving their health and changing their inadequate and negative behaviors. SCT allows a behavior to be addressed, the consequences of that behavior to be predicted, providing foresight and individual adjustments related to the behavior, evaluating the ability to perform the behavior, and thus, exhibiting the behaviors and evaluating the consequences of behavior.⁴ Therefore, it is considered that SCT can be used in nursing research and practices to create and maintain positive behavior change.

In various systematic reviews and literature reviews examining publications on nursing in our country, it was indicated that the use of hypothesis/model/theory in the studies was limited.⁹⁻¹⁴ This study was conducted to evaluate the postgraduate nursing theses made using SCT in Turkey. In this study, answers to the following research questions were sought:

Research questions of the study

- To which sample groups were SCT-based theses applied and which programs were created?
- Were the initiatives implemented based on these SCT-based programs effective?
- What are the features of the use of theory in SCT-based theses?

Method

This descriptive study based on literature was conducted by using the single screening model, one of the general screening models, and the document analysis technique. In the study, master's and Ph.D. theses made in the field of nursing were examined. The theses were reached in July 2019 by scanning the database of the "National Thesis Center" of the Council of Higher Education.

Population and Sample of the Study

In total, 6085 theses made in the master's and doctoral programs of the Departments of Nursing after 1978 in Turkey constituted the population of the study. The sample consisted of the theses that used Bandura's SCT and clearly stated in the title or abstract that they were made based on the SCT, the program of which was based on all concepts of SCT, and the full texts of which were reached. A total of 51 theses that met the inclusion criteria were reached, and 15 theses were included in the sample by examining the titles and abstracts of the relevant theses using the purposeful sampling technique (Figure 1).

Data Collection and Analysis

The data of the study were collected using the document analysis method, one of the qualitative research methods. A checklist, including the theses' authors, year, department, type, research type, sample group, theory used, subject, data collection forms and the study results, was created. The titles and abstracts of all theses included by the researchers were independently reviewed in accordance with this checklist and then compared. The use of theory in theses was evaluated within the scope of the following features:

- Rules for the use of theory in the studies and inclusion of the content,
- Availability of research literature conducted using the theory,
- Conceptual, theoretical and empirical (C-T-E) structure in the use of theory,
- Continuation and implementation of the study in accordance with C-T-E,
- Evaluation of the usability and reliability of the model with research findings,

Number and percentage, which are among the descriptive statistical methods, were used in the evaluation of the data.

Ethical Dimension of the Study

Ethics committee approval was not obtained because the theses used in the study were accessed from the National Thesis Center, which is a public website, and their use was officially authorized by the authors of the theses.

Results

The results obtained from the studies are presented by grouping them under the headings of "Features of the studies", "Features of the groups

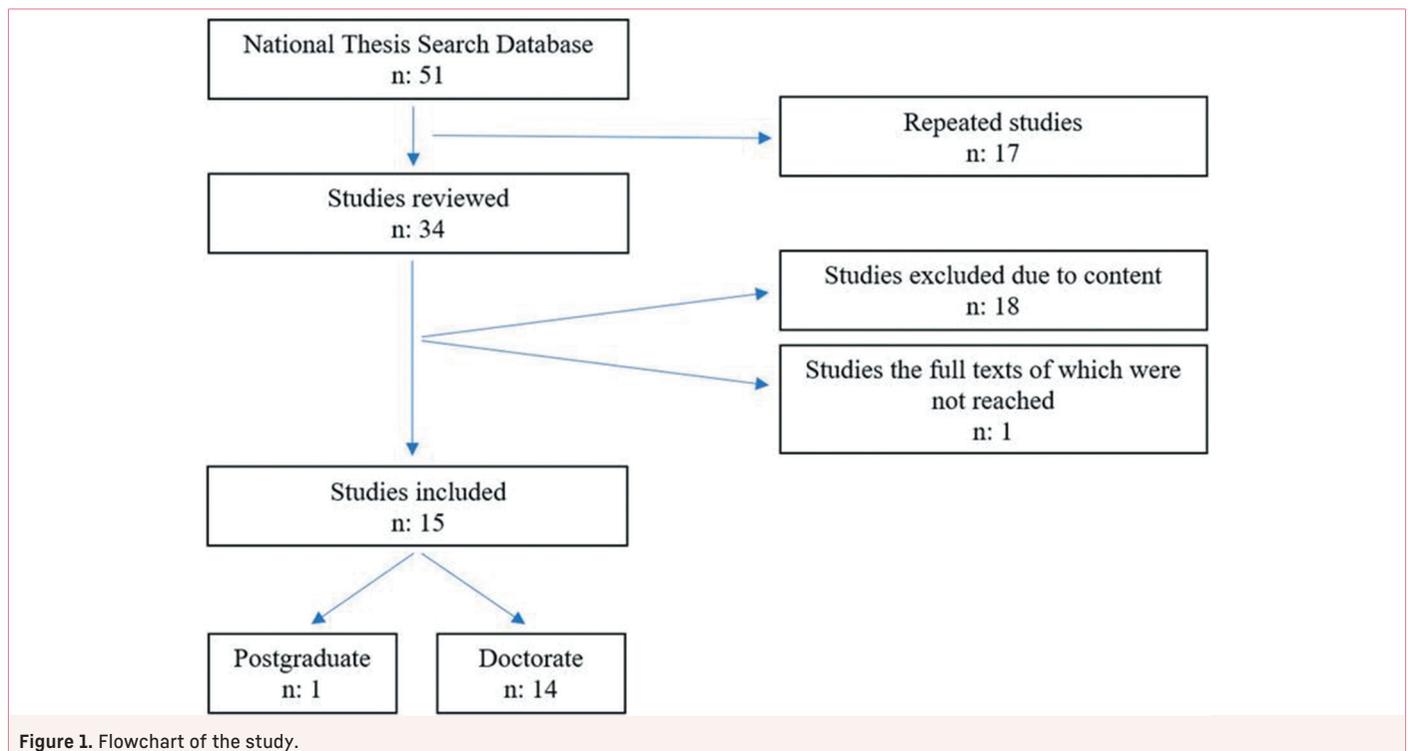


Figure 1. Flowchart of the study.

and programs implemented”, “Effects of the programs implemented”, and “Features of the use of theory in theses” (Table 1, Figure 2).

Features of the Studies

As a result of the review, it was determined that there were a total of 15 SCT-based nursing theses, including 14 Ph.D. theses^{15–28} and master’s thesis,²⁹ between 2003 and 2015. SCT was mostly used in the theses made by the department of public health nursing in six studies,^{15,19,22,26,27,29} followed by the theses made by the department of pediatric nursing in five studies.^{16,18,20,21,25} While 40.0% of the studies were experimental,^{17,20,24,26–28} 533% of them were quasi-experimental^{15,16,18,19,21–23,25} and 77% of them were methodological.²⁹ The samples of the studies consisted of primary school students in seven studies^{15–18,20,26,29} and kindergarten students in two studies,^{22,25} and more than half (60.0%) of them was conducted with students. In some theses, in addition to SCT, Smith’s Health Model,²¹ Stages of Change of the Transtheoretical Model and Motivational Interviewing²³ and Precede-Proceed Model^{26,27} were used together.

Features of the Groups and Programs Implemented

For school health services in nursing theses, SCT-based “*Education Program Against Violence*”¹⁵ and “*Bullying Prevention Program*”²⁰ were created for the group of primary school students, SCT-based “*Aggressive Behavior Prevention Program*”²² was created for the group of kindergarten students. The “*Program on Exploring Positive Health Behaviors*”,²⁹ “*Healthy Eating and Physical Activity Education Program for Primary School Students*”,²⁶ “*Weight Management Program*”¹⁸ and the *group education and individual counseling method to develop correct and desired behavior in the prevention of urinary tract infections*¹⁷ were developed to ensure the acquisition of positive health behaviors in school-age children. “*Smoking Prevention Program*”¹⁶ for primary school students and “*Play Dough Work Program*”²⁵ for kindergarten students were developed based on SCT. For children aged 1–4 years old with mothers, *the activity of determining home accident risks and reducing these risk factors*,¹⁹ “*Maternal Self-Efficacy and Self-Esteem Improving Program*”²¹ and “*Easy Way to Soothe Baby Program*”²⁷ were created. SCT was used in the design of “*Theory-Based Individual Counseling Program in Weight Management in Pregnancy*”²³ and “*Parental Adaptation Support Program*”²⁴ for pregnant women. Furthermore, *web-based education*²⁸ implemented for the patients with an implantable cardioverter defibrillator (ICD) was prepared according to SCT.

Effects of the Programs Implemented

In the education program created for the prevention of violence at school, students’ conflict resolution approaches increased, their tendency to violence behaviors decreased, and in the observations made by the teachers, it was observed that students’ violence behaviors decreased.¹⁵ It was determined that the program developed for bullying was effective in reducing the rate of bullying and victimization of the students,²⁰ and that the aggressive behavior prevention program provided a decrease in children’s physical and physical + relational aggressive behaviors.²² It was found that school health nursing practices were effective in gaining positive health behaviors,²⁹ group education and individual counseling method to develop correct and desired behavior in the prevention of urinary tract infections was effective,¹⁷ there was a decrease in the body mass index values of obese children at the end of the weight management program,¹⁸ and the change program on healthy eating and physical activity behaviors was effective in providing students’ weight management.²⁶ It was concluded that the smoking prevention program was effective in reducing the rate of smoking attempts and changing the perception of benefit/harm in children¹⁶ and that play therapy was effective in increasing the social, emotional and behavioral skills of preschool

children.²⁵ It was observed that nursing interventions had an effect on the incidence of home accidents in children aged 1–4 years, mothers’ level of knowledge about home accidents and first aid practices, and changing behavioral household risk factors that lead to a home accident¹⁹ and that the curriculum prepared to positively affect the social-emotional development of children was effective and applicable.²¹ The soothing interventions such as swaddling, holding right, left, side and face down and shhhh sound increased self-regulation behaviors for feeding frequency, sleep duration and duration of crying in infants.²⁷ The individual counseling intervention in pregnant women provided the development of healthy eating habits and an increase in physical activity and was effective in reducing gestational weight gain.²³ It was also found that the parental adaptation support program positively affected the self-efficacy perceptions of pregnant women, provided the development of parental knowledge and skills, increased parental adaptation and decreased marital adjustment.²⁴ Finally, web-based education was found to be effective in reducing shock-related anxiety levels and improving mental dimensions of the quality of life in patients with ICD.²⁸

Features of the Use of Theory in Theses

It was observed that primary sources in which Bandura explained his theory were used in seven of the nursing theses and that completely non-primary sources were used in three studies. There were three theses in which similar study results using SCT were provided, and only a few examples were given in the two theses. C-T-E structure was formed in three of the theses, and in one of them, C-T-E was not mentioned and its conceptual and theoretical structure was given in the figure. Among the theses, three theses with C-T-E scheme were carried out according to this scheme. It was observed that there were four theses in which SCT concepts were associated with results and discussed in the discussion section.

Discussion

Nursing is a professional discipline that contributes to the protection and development of health. Nursing research has an important role in formulating and organizing the knowledge and transferring it into practice, and it is stated that the use of theory in the studies is not yet at the desired level.^{30,31} The use of theory/model was found to be 5.7% in the nursing studies conducted in Turkey, 2.1% in master’s theses and 7.7% in Ph.D. theses.⁹ It is observed that the rate of using theory in nursing studies conducted abroad is 6.2%,³² 11%,³³ 14%,³⁴ 38%,³⁵ 40%,³⁶ 64%,³⁷ 682%³⁸ and 72%.³⁹ A total of 6580 theses are obtained by entering the keyword “nursing” in the subject section of the National Thesis Center database of the Council of Higher Education. Ekim et al. indicated that there were five SCT-based theses in 2012, and this number has increased by 10 in the last six years and has reached a total of 15 today.⁹ The use of SCT is also increasing in parallel with the increase in the use of theory in nursing studies. It was observed that many studies on diseases such as obesity,^{40–42} diabetes,^{43–45} heart disease,^{46–48} asthma,^{49,50} arthritis^{51,52} and health promotion^{53–56} were effective for the acquisition of positive health behaviors and the elimination of negative health behaviors with SCT. Therefore, the use of SCT in nursing studies is considered to be important in changing behaviors.

Researchers should first choose a theory that will guide their studies. After the selection of the relevant conceptual theory, as stated in the study of İnan et al. (2013), five steps that should be applied in the use of theory are defined.¹⁰ In our study, the use of SCT in nursing theses was discussed according to these steps.

Table 1. Features of the Studies Based on Social Cognitive Theory

Author and Year	Department and Type of Thesis	Research Type and Sample Group	Theory, Subject, Program and Duration	Data Collection Forms	Results
Uysal 2003 ¹⁵	- Department of Nursing (Public Health Nursing) - Doctorate	- Pretest-posttest with control group, quasi-experimental - Primary 7 th grade students - Experimental group: 42 people and control group: 36 people	- Social Learning Theory - Prevention of violence - Education Program Against Violence - 7 months	- Determination of Effective Factors in Student Socio-demographic, Violent Behaviors Data Form - Scenario for Determining the Student's Conflict Resolution Approach - Violence Tendency Scale - Violent Behavior Frequency Scale - Teacher Interview Guide - Violent Behavior Observation Guide	At the end of the program, students' conflict resolution approaches increased and their tendency to violence behaviors decreased. In their observations, the teachers indicated that students' violence behaviors decreased
Gürbüz 2006 ²⁹	- Public Health Nursing - Postgraduate	- Methodological - 3 rd , 4 th and 5 th grade students - Poster group: 79 people - Poster + Education program group: 82 people - Poster + Education program + School Health Nursing Practice group: 79 people	- Social Cognitive Theory - Acquisition of positive health behaviors - School Health Nursing Practices and Program on Exploring Positive Health Behaviors - 6 months	- Children Health Locus of Control Scale - Self Efficacy Scale Child Form - Children Health Perception and Health Behaviors Scale	In the intervention group that included the school health nursing practices, the health locus of control and self-efficacy-sufficiency mean scores of children increased at the end of the intervention. It was found to be effective in the areas of health responsibility, nutrition, self-actualization, social support, coping with stress, safety and hygiene habits of the Children Health Perception and Health Behaviors Scale
Bektaş 2009 ³⁶	- Pediatric Nursing - Doctorate	- Methodological Prospective-quasi-experimental - Methodological: Primary 4 th , 5 th , 6 th , 7 th and 8 th grade students and their parents Experimental: Primary fourth and fifth grade students and their parents - Knowledge-based intervention group: 114 people, Social competence based intervention group: 90 people, SCT-based intervention group: 147 people, Control group: 134 people	- Social Cognitive Learning Theory - Prevention of smoking - Smoking Prevention Program - 32 months	- Parent Demographic Data Collection Form - Child Demographic Data Collection Form - Parent Decision Balance Scale - Child Decision Balance Scale	It was found that the program applied to the social cognitive learning-based intervention group decreased the rate of smoking in children and positively changed their perceptions of benefit and harm

Table 1. Features of the Studies Based on Social Cognitive Theory (Continued)

Author and Year	Department and Type of Thesis	Research Type and Sample Group	Theory, Subject, Program and Duration	Data Collection Forms	Results
Birgili 2009 ¹⁷	- Principles of Nursing - Doctorate	- Qualitative-phenomenological, experimental - Primary school students - First stage: 98 people - Second stage: group education group: 16 people, Individual counseling group: 16 people	- Social Learning Theory - Developing desired behavior in the prevention of urinary tract infections - 4 months	- Student Introduction Form - Urinary Habit and Hygienic Application Form - UTI Signs and Symptoms Form - Students' Toilet Perception Form - Improvements Form that Students Want to See in School Toilets - Urine Analysis Results Follow-up Form - School Toilets Introductory Form - Individual Counseling Form	After the education and counseling applied in the study, the mean toilet hygiene score of the individual counseling group was higher than the mean score of the education group. Most of the students in the individual counseling group stated that their UTI symptoms decreased
Kilcarslan Törüner 2009 ¹⁸	- Pediatric Nursing - Doctorate	- Pretest-posttest with control group, quasi-experimental - Obese and slightly obese 4 th grade students - Study group: 41 people, Control group: 40 people	- Social Cognitive Theory - Weight management in school-age children - Weight Management Program - 15 months	- Questionnaire Form for Children and Parents - Precision electronic weighing instrument for children's weight measurements, stadiometer for height measurements	At the end of the program, it was determined that the body mass index values of the children in the study group decreased. In the study group, the body mass index values were found to be higher in those with 1-2 children in the family and lower in the children with a weekly exercise duration of one hour or more
Yıldırım 2010 ¹⁹	- Public Health Nursing - Doctorate	- Descriptive and quasi-experimental research (pretest-posttest order in one group) - Mothers with children aged 1-4 years - 40 people	- Social Learning Theory - Determining home accident risks and reducing these risks - Protection of Children aged 1-4 from Home Accidents - 9 months	- Home Environment Inspection List - Child Information Form - Family and Mother Information Form - Self-Effectiveness-Competence Scale - Evaluation Form of Home Accidents and First Aid Practices Knowledge Level of Mothers with 1-4-Year-Old Children, Informed Consent Form	Nursing interventions were found to be effective in reducing the incidence of home accidents in children. Nursing interventions had an effect on mothers' level of knowledge about home accidents and first aid practices, changing behavioral risk factors that lead to home accidents
Karataş 2011 ²⁰	- Pediatric Nursing - Doctorate	- methodological, experimental and descriptive - Methodological: Primary sixth, seventh and eighth grade students Experimental: Primary sixth grade student - Experimental group: 56 people, Control group: 57 people	- Social Cognitive Theory - The effect of the program developed for bullying - Program for Bullying - 14 months	- Descriptive Characteristics Questionnaire - Peer Bullying Determination Scale - Adolescent Form - Parent Monitoring Scale - Adolescent Form - Health Problems Diagnosis Form	It was observed that the program applied to the students reduced the rates of bullying and victimization, that the effect of the program continued on the victims for a long time, and that its effect on the bullies was not significant for a long time. It was determined that the victims had more health problems compared to bullies

Table 1. Features of the Studies Based on Social Cognitive Theory (Continued)

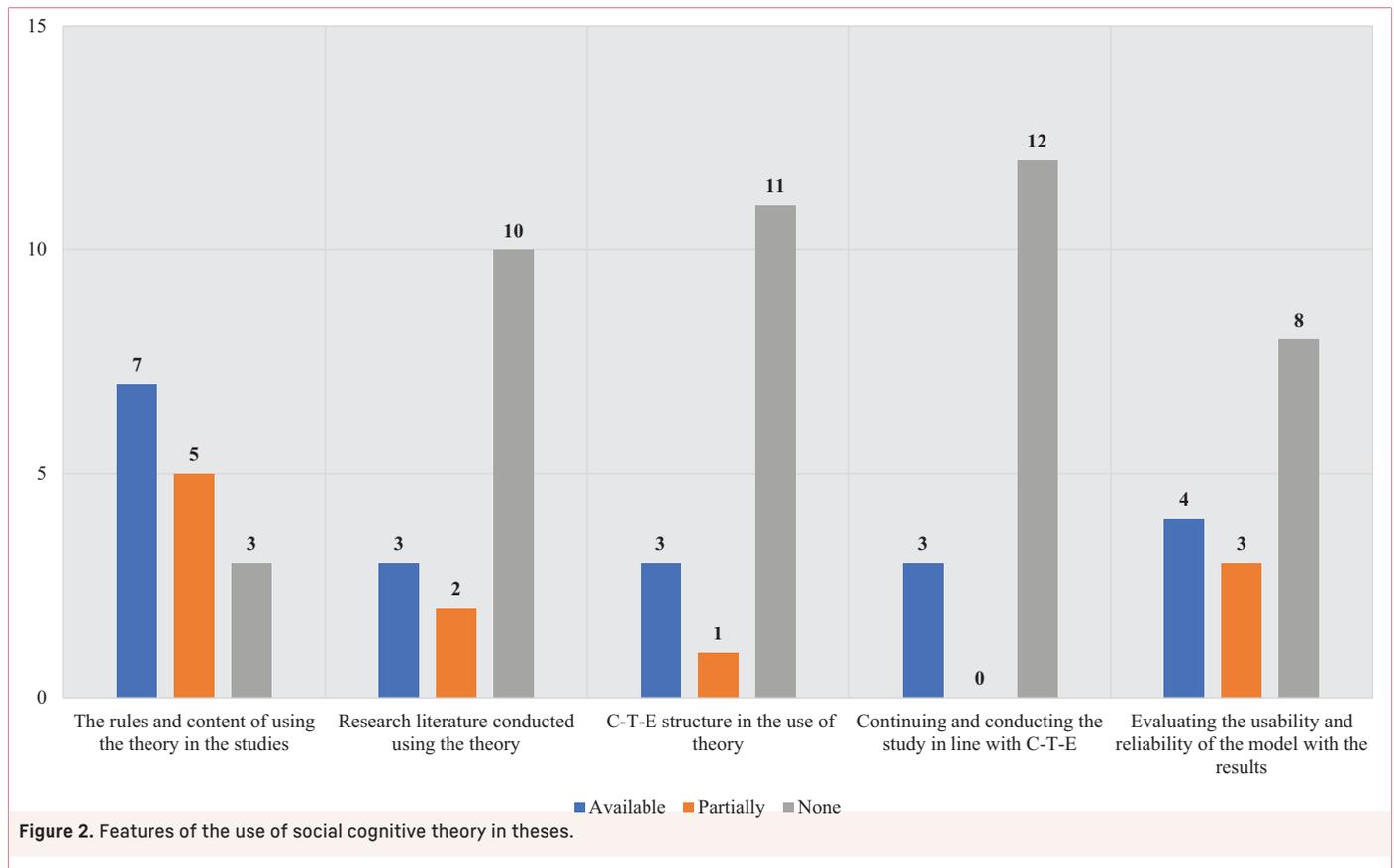
Author and Year	Department and Type of Thesis	Research Type and Sample Group	Theory, Subject, Program and Duration	Data Collection Forms	Results
Konuk Şener 2011 ²¹	- Pediatric Nursing - Doctorate	- Pretest-posttest, quasi-experimental - Mothers - Experimental group: 40 people, Control group: 40 people	- Social Cognitive Theory and Smith's Health Model - Improving maternal self-efficacy and self-esteem - Maternal Self-Efficacy and Self-Esteem Improving Program - 9 months	- Introductory information form - The Self-Efficacy for Parenting Task Index Toddler Scale - Rosenberg Self-Esteem Scale - Parent Attitude Scale - The Brief Infant-Toddler Social & Emotional Assessment tools	It was determined that as mothers' self-efficacy, self-esteem and democratic attitude behaviors increased, their children's social and emotional competences increased and their problematic behaviors decreased. It was observed that mothers with high self-efficacy also had high self-esteem and exhibited democratic child-raising attitudes. It was determined that age and education levels were important variables in the increase of self-efficacy in motherhood skills
Akcan 2012 ²²	- Public Health Nursing - Doctorate	- Pretest-posttest with control group, quasi-experimental - Kindergarten of primary school - Intervention group: 45 people, Control group: 45 people	- Social Cognitive Theory - Preventing aggressive behavior - Aggressive Behavior Prevention Program - 9 months	- Personal Information Form - Eyberg Child Behavior Inventory (subscale of Aggressiveness), - Preschool Social Behavior Scale-Teacher Form (subscales of overt and relational aggression) - Victimization Scale	Aggression frequency and problem sub-dimension mean scores decreased in children. The mean total score of physical and physical + relational aggression of the children decreased significantly
Daşkan 2012 ²³	- Gynecological Nursing - Doctorate	- Pretest-posttest, randomized controlled, quasi-experimental - Healthy pregnant women in the normal, overweight and obese class - Intervention group: 51 people, Control group: 50 people	- Social Cognitive Theory, Stages of Change of the Transtheoretical Model and Motivational Interviewing - Weight management during pregnancy - Individual Counseling Intervention Program - 15 months	- Individual Identification Form - Pregnant Weight Monitoring Card - Nutritional Habits and Daily Food Consumption Frequency Diagnosis Form - International Physical Activity Survey - Behavior Change Stage Diagnosis Short Questionnaire - Self-Efficacy-Efficacy Scale - Multidimensional Scale of Perceived Social Support - Physical Activity Self-Monitoring Form - Food Consumption Frequency Self-Monitoring Form - Phone Interview Form - Pregnant Pre-Registration Form	Individual counseling intervention applied to pregnant women provided the development of healthy eating habits and an increase in physical activity. It was also effective in reducing gestational weight gain and excessive gestational weight gain
Ersanlı Kaya 2013 ²⁴	- Gynecological Nursing - Doctorate	- Randomized controlled experimental - Pregnant women - Case group: 35 people, - Experimental group: 33 people	- Social Cognitive Learning Theory - Parental perception of self-efficacy - Parental Adaptation Support Program - 12 months	- Introductory information form - Parenthood Self-Efficacy Scale - Marital Adjustment Scale	It was observed that the program positively affected the self-efficacy perceptions of pregnant women, improved parental knowledge and skills, and increased parental adaptation

Table 1. Features of the Studies Based on Social Cognitive Theory (Continued)

Author and Year	Department and Type of Thesis	Research Type and Sample Group	Theory, Subject, Program and Duration	Data Collection Forms	Results
Sezici 2013 ²⁵	- Pediatric Nursing - Doctorate	- Pretest-posttest with control group, quasi-experimental - 4-5 years old children - Experimental group: 48 people, Control group: 47 people	- Social Cognitive Learning Theory - The effect of play therapy on social competence and behavior management in children - Play Dough Work Program - 9 months	- Identification Form of Preschool Child and His/Her Parents - Scale for Assessment of Social Competence and Behaviour-30	Play therapy applied to preschool children increased their social, emotional and behavioral skills. It was determined that children's social adaptation skills such as communication, problem solving and effective coping increased, that behavioral problems decreased, and that emotional skills increased with decreasing emotions such as anxiety and anger
Emlek Sert 2015 ²⁶	- Public Health Nursing - Doctorate	- Pretest-posttest, randomized controlled, experimental - Primary school students - Intervention group: 66 people, Control group: 56 people	- Social Cognitive Theory and Precede-Proceed Model - The effect of the education program on healthy eating and increasing physical activity on weight management - Healthy Eating and Physical Activity Education Program for Primary School Students - 14 months	- Family and Student Diagnostics Form - Dietary Pattern Index - Physical Activity Questionnaire - Middle School Self-Efficacy Scale - Child-Adolescent Social Support Scale	In the intervention group, it was determined that the rate of skipping meals decreased, the consumption of food between meals increased, the rate of eating from the school canteen decreased, preferring the school environment as a place to have lunch decreased, the rate of being affected by advertisements in food selection decreased, and label reading behaviors increased. It was determined that weight management was affected by the variables of dieting, perception of healthy eating and participation in education program

Table 1. Features of the Studies Based on Social Cognitive Theory (Continued)

Author and Year	Department and Type of Thesis	Research Type and Sample Group	Theory, Subject, Program and Duration	Data Collection Forms	Results
Öztürk Dönmez 2015 ²⁷	- Public Health Nursing - Doctorate	- Pretest-posttest with control group, experimental - Mothers and babies - Application group: 21 people, Control group: 21 people	Social Cognitive Learning Theory and Precede-Proceed Model, The effect of teaching soothing interventions (swaddling, holding side and face down on the lap, shhhh sound- white noise listening, swinging) to mothers on self-regulation behaviors related to sleep, crying and feeding in their babies - Easy Way to Soothe Baby Program - 18 months	- Mother and Baby Information Form - State Anxiety Scale - Perceived Affective Competence Scale for Parenting - Maternal Attachment Scale - Baby Sleep Diary Form - Phone Interview Form	It provided evidence for the importance of soothing interventions such as swaddling, holding right, left, side and face down, and shhhh sound in the formation of self-regulation behaviors for feeding frequency, sleep duration and duration of crying in infants. It was determined that the factors belonging to the mother (anxiety, competence, education level) and the baby (week of birth, gender, birth type) were not effective in the formation of this evidence, that soothing interventions were most effective in the development of the infant's self-regulation behaviors in the seventh and 11 th weeks, that the difference between self-regulation behaviors decreased in the 23 rd week, and that the effect of soothing interventions was less in the 23 rd week in the regression model established. It was determined that the effect of each of the self-regulation behaviors (sleeping, crying, feeding) on the other increased in parallel with the increase in the baby's age (months)
Yardımcı 2015 ²⁸	- Internal Medicine Nursing - Doctorate	- Methodological and randomized controlled study - Patients with implantable cardioverter defibrillator - Intervention group: 40 people, Control group: 40 people	- Social Cognitive Learning Theory - The effect of web-based education applied to patients with implantable cardioverter defibrillator (ICD) on shock anxiety level and quality of life - 7 months	- Patient Information Form - Florida Shock Anxiety Scale - SF-36 Quality of Life Scale	It was determined that web-based education was effective in reducing the anxiety levels of patients and improving the mental dimensions of their quality of life



Step one: Understanding the rules for use of the model in the study and its content

It was observed that primary sources in which Bandura explained his theory were used in only seven of the nursing graduate theses. While some primary and non-primary sources were used in five studies, completely non-primary sources were used in other three studies. SCT’s content, basic assumptions, principles, propositions that define concepts, and the relational propositions that connect the concepts can be understood by reading all the main source material written by the author of the model.⁵⁷ Therefore, researchers who will use the theory should derive the rules of their studies from primary sources. It appears that secondary sources, which are based on the interpretations of the original sources, formulate the theory and determine possible rules, should not be used as primary sources. Bandura created and revised the SCT between 1977 and 1986.⁵ It is considered that primary sources were not used for reasons such as the presence of the article indicating that the resources of the last 10 years should be available in the rules specified in the thesis writing guides of some institutes, the lack of knowledge of the postgraduate student due to not taking a course on theory/model, researchers’ lack of English language, inability to reach the published books because they are published abroad and the lack of online registration system.

Step two: Review of research literature conducted using the same model

It was observed that the main concepts of SCT were explained mostly within the theoretical framework in theses, and its intended use in the study was associated only in six theses. There are only three theses in which similar study results using SCT are given, and only a few examples are given in two of them. The examination of a theory-based study

(1) shows the way to the design of studies that will fill or expand the knowledge gaps, (2) describe what is known about the theory and how it is used in various studies, (3) help in determining the statistical analyses that will be used in testing the relationships between two or more concepts.⁵⁷ In our country, the use of theory in the studies and practice for providing a standard approach in nursing practices has recently become widespread.^{11,14} Postgraduate theses, especially Ph.D. theses, are required to be original, to develop a new method or model, and to bring innovation to practice. Considering that SCT is applied by different departments of nursing, it is considered that the inclusion of similar studies using the theory in the theses in determining the design of the study, finding out the gaps, understanding how it is used in different groups, understanding how relationships between the concepts are established and determining the questionnaires and statistical methods to be used will be important in terms of guiding the researcher.

Step three: Definition of C-T-E structure in the use of the model in the study

C-T-E structure was formed in only three of the theses, and in one of them, C-T-E was not mentioned and its conceptual and theoretical structure was given in the figure. C-T-E is the illustrated form of transferring theoretical knowledge into practice. It is important in defining the relationship between the main concepts of the theory and the variables of the study.⁵⁷ In fact, the fact that the concepts and propositions of SCT are listed by the researchers will provide a more comprehensive examination of the subject and direct the person to the relevant subject. In the literature, it is indicated that the use of theory in the studies is increasing, however, the desired level has not yet been reached, there is a lack of knowledge about the theory, it is not known

and understood how to use it in the studies, there is difficulty in creating a research methodology according to the theory, it is not known how to choose theory for practice and problem, and it is not known how the selected theory will be used in which part of the study.⁵⁸⁻⁶⁰ In a study examining the studies conducted using theory/model in chronic disease management in Turkey, it was indicated that Orem's Self-Care deficit was schematized in four of 16 studies.⁶¹

Step four: Continuing and conducting the study in line with C-T-E

Since information on C-T-E scheme was included in three of the graduate theses, only these studies were conducted in accordance with the C-T-E scheme. In all three theses, the steps of the study in line with the concepts were explained as text, what was done and why it was done was stated, however, it was not shown schematically. This step is an expected result since it is related to the third step of using theory in research. Zuhur and Özpancar (2017) also indicated that four studies with C-T-E were conducted in this direction in the studies in which Orem's Self-Care deficit was used.⁶¹ Therefore, the previous step should be first created. In their study, İnan et al. (2013) examined the theory and model-based research carried out under the leadership of nurses in our country, and they indicated that only five of the postgraduate theses were made in line with the C-T-E framework and that none of the research articles included a schema.¹⁰ The importance of structure that will guide the theory in directing the research, specifying the relationship between the concepts, the aim of the research, the hypotheses, the relationship between the application and results is observed with the presence of C-T-E in theses.

Step five: Presentation of research findings, evaluation of the usability and reliability of the model

It was determined that the SCT concepts were partially associated with the results and discussed in the theses (four theses), and that the limitations, strengths and weaknesses of the theory were not adequately addressed (seven theses). Similarly, in the study of İnan et al. (2013), it was determined that the concepts of the model were associated with the results in six theses and that the limitations and strengths/weaknesses in the use of the model were mentioned in seven studies. In the research articles, it was observed that the results were not associated with the theory/model in the discussion and that it was insufficient to indicate the limitations and strengths/weaknesses in use.¹⁰ In his systematic review, Lenz (2007) indicated that 59% of the studies included research findings without mentioning theory or theoretical perspective, and that 9.5% of them gave theoretical information within the research, however, the theory was not associated with the hypotheses and findings.⁶² In fact, theory and research are related to each other, and the theory provides a framework for the design, implementation and evaluation of the research, and the results of the research are also expected to confirm or falsify the propositions of the theory, to support them, and to reveal new propositions.⁶³ It is considered that explaining the strengths and weaknesses of the theory in the studies based on SCT will guide new studies to be conducted.

Conclusion

In this study, it has been observed that SCT is mostly used in doctorate and by the departments of public health and pediatric nursing in nursing theses in our country and that there has been an increase in recent years. It was indicated that the effects of different nursing programs in these theses made based on SCT were positive. Therefore, it is important to use SCT in nursing practice and studies. With regard to the features of the use of theory in theses, it has been observed that there are deficiencies in the use of primary sources, in giving the results of similar studies made with the theory, especially in

the formation of the C-T-E structure at the beginning of the study and the conduct of the study in this direction, and the association and discussion of the SCT concepts with the results. In addition to conducting studies based on SCT in postgraduate nursing programs, especially doctorate, they should also mention the studies that will develop the conceptual framework, test it and improve its limitations and weaknesses. Thus, a great contribution will be made to increase the scientific knowledge content for the nursing discipline. In our country, the need for providing students with a theoretical perspective in nursing education programs and transferring them to research and practice appears, and it can be recommended to use SCT in behavior change studies.

Ethics Committee Approval: In this study, ethical permission was not required as the research articles included in the sample were taken from an accessible electronic database.

Informed Consent: In this study, informed consent was not required as the research articles included in the sample were taken from an accessible electronic database.

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