ORIGINAL ARTICLE

NANDA-I, NOC, and NIC linkages to SARS-CoV-2 (COVID-19): Part 3. Family response

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Purpose: To provide guidance to nurses caring for families with COVID-19, we developed linkages using interoperable standardized nursing terminologies: NANDA International (NANDA-I) nursing diagnoses, Nursing Interventions Classification (NIC), and Nursing Outcomes Classification (NOC). In addition, we wanted to identify gaps in the terminologies and potential new nursing diagnoses, outcomes, and interventions for future development related to nurse roles in family care during a pandemic.

Methods: Using a consensus process, seven nurse experts created the linkages focused on families during the COVID-19 pandemic using the following steps: (1) creating an initial list of potential nursing diagnoses, (2) selecting and categorizing outcomes that aligned with all components of each nursing diagnosis selected, and (3) identifying relevant nursing interventions.

Findings: We identified a total of seven NANDA-I nursing diagnoses as the basis for the linkage work. These are distributed in three NANDA-I Domains and based in the psychosocial dimension of the Nursing Care in Response to Pandemics model. Eighty-nine different NOC outcomes were identified to guide care based on the nursing diagnoses, and 54 different NIC interventions were suggested as possible interventions. Fifteen new proposed concepts were identified for future development across the three classifications.

Conclusions: The linkages of nursing diagnoses, outcomes, and interventions provide a guide to enhance nursing practice and care documentation that could quantify the impact of nursing care to patient outcomes for families at risk for or infected by COVID-19.

Implications for Nursing Practice: NANDA-I, NOC, and NIC linkages identified in this paper provide resources to support clinical decisions and guide critical thinking for nurses encountering care needs of families with COVID-19. Documentation of these linkages provides data that can create new knowledge to enhance the care of families impacted by COVID-19.

KEYWORDS
COVID-19 pandemic, family and caregiver needs, NANDA-I, NIC, NOC linkages

INTRODUCTION

School and business closures, mass unemployment, shelter-in-place orders, travel bans, and mandates for mask wearing and social distancing are just a subset of the countless changes worldwide on the lives of individuals, families, and communities caused by the COVID-19 pandemic (Miller, 2020). Never in modern history have countries around the world had to ask citizens to stay home and maintain

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physical distance to preserve the health of families, colleagues, and friends (Smit et al., 2020).

There is a need for NANDA-International (NANDA-I) nursing diagnoses, Nursing Interventions Classification (NIC), and Nursing Outcomes Classification (NOC) (collectively known as NNN) linkages to be developed for pandemic situations involving families, family members, and caregivers as we are experiencing a time where nurses are contending with unusual care challenges and working in unfamiliar areas. These linkages facilitate the critical thinking and reasoning skills required in these unfamiliar care areas. In addition, documentation through use of these linkages provides data that can create new knowledge to enhance the care of families impacted by COVID-19 and provide the means to evaluate that nursing care.

The daily reports of outbreaks and perplexing cycles of increases and decreases of infections and mortality rates cause heightened anxiety and fear for everyone's personal and overall well-being. But beyond individuals and communities, the pandemic has had a tremendous impact on families. For children and youth, most in-person classroom lessons are cancelled and being replaced by home-schooling, virtual classrooms, and online activities, leading to less activity and play outside, more sedentary behavior, and more screen-based activities (Moore et al., 2020). Further, parents have additional responsibilities for their children's education and socialization: a challenge as parents struggle to either work at home or are deemed as essential workers who struggle to find childcare.

These challenges are compounded by enhanced economic risk, delayed medical treatments, and difficulty in obtaining basic needs (Miller, 2020). It has been especially difficult for those adults over age 65, who have increased severity and mortality if infected with COVID-19. And, for older adults who live in assisted living and long-term care settings, healthcare facilities are restricting visits from family to prevent virus transmission, including visits to hospices with terminally ill patients (Hsu et al., 2020).

Finally, additional stressors to families relate to caring for a family member who has contracted COVID-19 and must be isolated. According to the Center for Disease Control and Prevention (2020), the sick persons need to avoid sharing living space with others and should have their own sick room or area, and their own bathroom. As they cannot leave the home, groceries, prescriptions, and other needs must be obtained for them, placing more responsibilities on family members.

Some segments of society are more vulnerable and suffer more rapidly from the effects of the pandemic. Therefore, the negative virus effects crosscut with these vulnerabilities grounded in the social determinants of health, placing some groups at higher risk for adverse outcomes (Miller, 2020). This includes families who are living in crowded dwellings, experiencing un- or underemployment, and those managing existing chronic illnesses and disabilities. In addition, families with low health literacy and low literacy in general may unknowingly participate in risky behaviors that can lead to COVID-19 infections in their family unit.
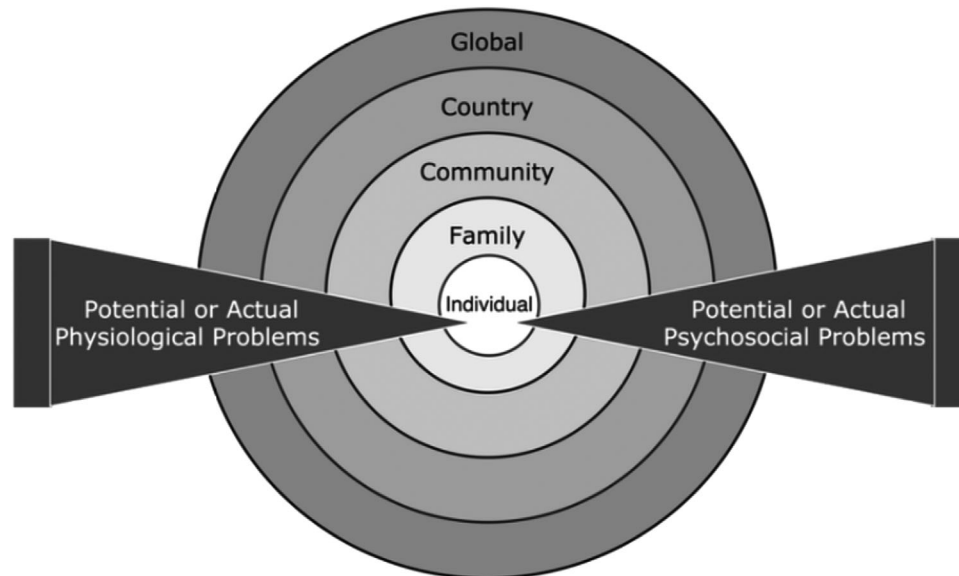
Nurses can address these unique and rarely encountered pandemic-related family problems by improving family healthcare outcomes and helping maintain family function. Developing linkages to guide care planning for families experiencing issues from the pandemic enhances nurses' opportunities to lead efforts to contain some of the disease trajectory. Thus, this paper addresses the unique and demanding needs of families during the pandemic, as the final piece in the three-part series of articles providing linkages of three standardized terminologies, NANDA-I, NIC, and NOC (NNN) related to COVID-19. Using the same approach as our previous papers (Moorhead et al., 2021; Swanson et al., 2021), the aim of this paper is to present linkages between the NANDA-I, NIC, and NOC classifications as guidance to create care plans focused on problems related to COVID-19 that families and caregivers may encounter. We identified gaps in the terminologies and have proposed new nursing diagnoses, outcomes, and interventions for future development.

MODEL AND THEORETICAL INTEGRATION

Given the multidimensional nature of patient care needs during this pandemic, for this series of papers, we developed an overarching conceptual model, the Nursing Care in Response to Pandemics Model (Figure 1). This model was used in our earlier work for community-level linkages (Moorhead et al., 2021), individual patient-level linkages (Swanson et al., 2021), and now for the family-level linkages in this paper. The model is guided by a social ecological framework (Lounsbury & Mitchell, 2009) and is composed of five concentric circles beginning with the individual and then surrounded by families, communities, countries, and the global environment. These layers represent the populations nurses serve. Arrowheads that cut across each of the model's circular layers define the focus area related to actual and potential physiological or psychosocial problems that nurses may assess and target for nursing actions in the healthcare environment (Moorhead et al., 2021; Swanson et al., 2021). In addition, this model depicts the fluidity and the multifaceted impact of the pandemic. As Amorin-Woods et al. (2020) state, "this [the pandemic] leads us to first acknowledge and respect the interconnectedness and relationship between systems, within our body, between us and our environment, and between one another…" (p. 3).

In initial discussions of the model, Moorhead et al. (2021) described it as encompassing both the individuals' and communities' response to the COVID-19 pandemic, because each area adopted sets of actions, called mitigating strategies, which were employed worldwide and intended to slow the spread of the virus until a treatment was available. Strategies included individuals isolating at home and avoiding care facilities unless symptoms were severe, which often meant that the "individual in the center of the model may be separated from family members, or at least from the extended family, resulting in decreased social support and a potential lack of caregivers" (Moorhead et al., 2021, para. #13). Large community events such as church services, and any type of travel were to be avoided, since "transmission of the virus can quickly spread across all circles surrounding the individual depicted in the center of the model" (Moorhead et al., 2021, para. #13). It became challenging for the nurse to provide care for individuals within family and community settings, because "contact with infected

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Figure 1 Nursing care in response to pandemics model

individuals and groups also puts the nurse at risk of being infected with the virus and can add to the spread of the disease" (Moorhead et al., 2021, para. #13).

Nursing care is depicted in the model in the form of arrowheads that touch and connect each concentric circle. Potential and actual problems requiring nursing action are contained in the arrowheads, and all areas of nursing care are encompassed, but divided into physiological or psychosocial needs. Physiological runs the gamut of body systems, whereas psychosocial includes the mental, emotional, social, and spiritual dimensions of what it means to be healthy (Gorman & Sultan, 2008).

Selected literature supports the relationship between the individual and family level as the model depicts. Family units are impacted when one or more individuals encounter health issues (Harmon Hanson, 2005). The definition of family as presented in NOC reinforces the notion of this relationship: "Two or more people who are related biologically, legally, or by choice who have a societal expectation to socialize, enculturate, and care for its members" (Moorhead et al., 2018, p. 650). Subsequently, changes in the individual lead to changes within the family. Thus, these statements about family dynamics and our conceptual model serve to authenticate the interrelationship between the individual and their family when challenging life events occur.

In conceptualizing the interrelationship between the individual and their family during the pandemic crisis, another perspective guided our work: family resilience, a phenomenon that defines how well families respond to harsh and challenging conditions (Patterson, 2002). Patterson (2002) notes family resilience is important within the borders of a family system and represents the outcomes of family relationships. Patterson (2002) states that family adaptation is the key element that develops after an event of major disruption and she depicts this process of family adaptation in the Family Adjustment and Adaptation

Response (FAAR) Model (Patterson, 1988), which she notes is critical to the resilience of the family. Within the FAAR Model (Patterson, 1988), there are two family outcomes: family adjustment and family adaptation. In one situation (family adjustment), families have the capabilities to face the demands, which enables them to accommodate to the situation. However, when demands on families exceed their capabilities, this unevenness creates disorganization with the units. This disorganization may result in the need for family adaptation and balance restoration in the system, thus building family resilience.

METHOD

We formed a team of seven nurse experts to develop linkages of NANDA-I nursing diagnoses, NOC outcomes, and NIC interventions (known as NNN) focused on the family and applicable to the pandemic. Each expert has published one or more articles using either NANDA-I, NOC, or NOC, or containing linkages of these Standardized Nursing Terminologies. Collectively, there is a range of 7–30 years of work with the languages between the experts, as either practicing nurses, researchers, or developers of the languages or previous linkage publications. We also enlisted the expertise of a parent–child–family-oriented nurse educator, to assist with discussions of these relationships.

Initially we examined nursing diagnoses that contain the term *caregiver* or *family* in the NANDA-I nursing diagnosis label. Next, we considered possible problems and conditions that might occur within the family related to the COVID-19 pandemic. Then we considered COVID-19 issues impacting the individual that would influence the family or a caregiver. In addition, we considered the risk factors related to the selected diagnoses and the family caregiver components listed

previously. From these issues and considerations, a list of potential NANDA-I diagnoses related to the family or caregiver was identified and individually examined for appropriateness. Once the diagnoses were selected, each problem-focused nursing diagnosis was linked to outcomes that align with measuring the defining characteristics, related factors, at-risk populations, and associated conditions. When defining characteristics were not present in the NANDA-I, linkages for these diagnoses were focused on risk factors, at-risk populations, and associated conditions. Finally, we identified relevant nursing interventions. The major focus for the selection of NIC interventions was the related factors of the nursing diagnoses.

We next reviewed the definitions of each nursing diagnosis, outcome, and intervention to determine whether there was a good fit across the linkages. Once the first draft of the linkages was developed for the caregiver and family nursing diagnoses, we reviewed the work as a group and commented on the appropriateness of each of the outcomes and interventions selected and identified gaps where new terminologies may be needed.

FINDINGS

The findings are organized and presented based only on the Psychosocial Dimension of the *Nursing Care in Response to Pandemics Model* (Figure 1) due to the nature of the identified problems and selected diagnoses. We identified seven nursing diagnoses that are distributed in three NANDA-I domains: *Domain 1: Health Promotion, Domain 7: Role Relationship*, and *Domain 9: Coping/Stress Tolerance* (Herdman & Kamitsuru, 2018).

The nursing diagnosis, *Ineffective Family Health Management (00080)*, had 19 nursing outcomes and 16 nursing interventions included in the linkage. For the nursing diagnosis, *Interrupted Family Processes (00060)*, 22 nursing outcomes and 23 nursing interventions were selected, and for the *Dysfunctional Family Processes (00063)*, 37 nursing outcomes and 27 nursing interventions were selected. For *Caregiver Role Strain (00061)*, 44 nursing outcomes and 26 nursing interventions were selected. For the nursing diagnosis *Risk for Caregiver Role Strain (00062)*, 29 nursing outcomes and 21 nursing interventions were selected. For the nursing diagnosis, *Compromised Family Coping (00074)*, 22 nursing outcomes and 20 nursing interventions were selected, and for *Disabled Family Coping (00073)*, 27 nursing outcomes and 15 nursing interventions were selected. These linkages are presented in Table 1. A total of 89 different NOC outcomes and a total of 54 different NIC interventions were identified in the linkages for the seven nursing diagnoses.

Other findings of this work relate to identified gaps in the three terminologies, which have led us to suggest new nursing diagnoses, new outcomes, and new interventions for future development. A total of 15 new terms were identified across the three classifications. The five nursing diagnoses suggested are as follows: *Compromised Family Resilience* (proposed), *Disrupted Family Communication* (proposed), *Inadequate Financial Resources* (proposed), *Risk for Family Conflict* (proposed), and *Risk for Family Violence* (proposed). The seven nursing outcomes to be developed are as follows: *Family Communication Patterns* (proposed), *Family Conflict Resolution* (proposed), *Family Financial Resources* (proposed), *Family Health Management* (proposed), *Family Support Network* (proposed), *Knowledge: Community Resources* (proposed), and *Risk Family Violence* (proposed). Three new interventions for suggested development are as follows: *Family Communication Assistance* (proposed), *Family Conflict Resolution Assistance* (proposed), and *Family Violence Prevention* (proposed).

DISCUSSION

Nurses assist family members to acquire the knowledge, skills, and social abilities for health self-management, which impacts family health overall (Ryan & Sawin, 2009; Schulman-Green et al., 2012). Additionally, health promotion activities or health maintenance behaviors to reduce the impact of the illness on family health overall should be performed by individuals and/or the family (Richard & Shea, 2011), or by caregivers who have been contracted by the family (Reinhard et al., 2008). The discussion is divided into three sections: family health management, family function and processes, and family caregiving.

Family health management

During the COVID-19 pandemic, self-management of one's health is difficult to accomplish but as important as ever for individuals and their families to be able to thrive as families. Self-management does not take place in a void, but within an environment of health professionals, friends, and family who can assist and support individuals performing health self-management tasks (Gallant, 2003; Rosland et al., 2008). There are specific tasks for health self-management for individuals within the family context, including attending to illness needs, initiating securing resources, and adapting to the disease (Schulman-Green et al., 2012). Building on the importance of health self-management, Ryan and Sawin (2009) provided a broader definition that incorporates the tasks of healthy behavior self-management for individuals and their families (e.g., symptom management, taking medications, recognizing acute episodes, nutrition, exercise, smoking, stress reduction, interaction with health providers, need for information, adapting to work, managing relations, and managing emotions). These perspectives corroborate the selection of the outcomes and interventions as elements of the newly developed linkages.

A nursing diagnosis relevant to family health management is *Ineffective Family Health Management (00080)*, which is in NANDA-I *Domain 1: Health Promotion*. The NOC outcome selected to measure resolution of the nursing diagnosis was *Family Health Status (2606)*, which is in NOC *Domain VI: Family Health* (Moorhead, et al., 2018). Other outcomes identified, based on the tasks of healthy behavior self-management (Ryan & Sawin, 2009), were as follows: *Family Support During Treatment (2609), Participation in Health Care Decisions (1606), Risk Control: Infectious Process (1924); Self-Direction of Care (1613), Self-Management: Infection (3118)*, and *Symptom Severity (2103)* (Moorhead et al., 2018).

Both individual and family outcomes were linked to the nursing diagnosis. Some of the selected outcomes align with the individual more

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TABLE 1   NANDA-I, NOC, and NIC linkages for family response to COVID-19

Domain 1. Health Promotion

NANDA-I diagnosis: Ineffective Family Health Management (00080)
Definition: A pattern of regulating and integrating into family processes a program for the treatment of illness and its sequelae that is unsatisfactory for meeting specific health goals of the family unit

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Outcome to measure resolution of diagnosis	Family Health Status (2606)	
Outcomes to measure defining characteristics		
Family Participation in Professional Care (2605)	Personal Health Status (2006)	Self-Direction of Care (1613)
Family Support During Treatment (2609)	Risk Control (1902)	Self-Management: Acute Illness (3100)
Knowledge: Treatment Regimen (1813)	Risk Control: Infectious Process (1924)	Self-Management: Infection (3118)
Participation in Health Care Decisions (1606)	Risk Detection (1908)	Symptom Severity (2103)
Outcomes associated with related factors		
Compliance Behavior (1601)	Family Coping (2600)	Health Literacy Behavior (2015)
Decision-Making (0906)	Family Functioning (2602)	
Outcomes linked to at-risk populations	Financial Literacy Behavior (2014)	
Suggested nursing interventions for problem resolution		
Behavior Modification (4360)	Family Involvement Promotion (7110)	Risk Identification (6610)
Commendation (4364)	Family Mobilization (7120)	Sustenance Support (7500)
Conflict Mediation (5020)	Health Education (5510)	Teaching: Disease Process (5602)
Counseling (5240)	Health Literacy Enhancement (5515)	Teaching: Procedure/Treatment (5618)
Decision-Making Support (5250)	Health System Guidance (7400)	
Family Integrity Promotion (7100)	Mutual Goal Setting (4410)	

Domain 7. Role Relationship

NANDA-I diagnosis: Interrupted Family Processes (00060)
Definition: Break in the continuity of family functioning which fails to support the well-being of its members

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Outcomes to measure resolution of diagnoses	Family Functioning (2602)	Family Support During Treatment (2609)
Outcomes to measure defining characteristics		
Decision-Making (0906)	Family Normalization (2604)	Psychosocial Adjustment: Life Change (1305)
Family Coping (2600)	Family Resiliency (2608)	Social Support (1504)
Family Integrity (2603)	Family Social Climate (2601)	
Outcomes associated with related factors		
Caregiver-Patient Relationship (2204)	Role Performance (1501)	Social Involvement (1503)
Family Participation in Professional Care (2605)		
Outcomes linked to at-risk populations and associated conditions		
Caregiver Well-Being (2508)	Development: Middle Adulthood (0122)	Financial Literacy Behavior (2014)
Caregiver Lifestyle Disruption (2203)	Development: Young Adulthood (0123)	Health Beliefs: Perceived Resources (1703)
Development: Late Adulthood (0121)	Family Health Status (2606)	
Suggested nursing interventions for problem resolution		
Caregiver Support (7040)	Developmental Enhancement: Infant (8278)	Family Support (7140)
Conflict Mediation (5020)	Family Integrity Promotion (7100)	Family Therapy (7150)
Coping Enhancement (5230)	Family Integrity Promotion: Childbearing Family (7104)	Financial Resource Assistance (7380)
Counseling (5240)	Family Involvement Promotion (7110)	Sibling Support (7280)
Crisis Intervention (6160)	Family Mobilization (7120)	Resiliency Promotion (8340)
Decision-Making Support (5250)	Normalization Promotion (7200)	Respite Care (7260)
Developmental Enhancement: Adolescent (8272)	Family Process Maintenance (7130)	Role Enhancement (5370)
Developmental Enhancement: Child (8274)		Support System Enhancement (5440)

NANDA-I diagnosis: Dysfunctional Family Processes (00063)
Definition: Family functioning which fails to support the well-being of its members

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Outcome to measure resolution of diagnoses	Family Functioning (2602)	
Outcomes to measure defining characteristics		
Abuse Recovery: Emotional (2502)	Family Risk Control: Bullying (2612)	Neglect Cessation (2513)
Abusive Behavior Self-Restraint (1400)	Family Social Climate (2601)	Parenting Performance (2211)
Agitation Level (1214)	Family Support During Treatment (2609)	Parenting Performance: Psychosocial Safety (1901)
Anger Self-Restraint (1410)	Fear Level (1210)	

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TABLE 1 Continued

Anxiety Level (1211)	Fear Level: Child (1211)	Psychosocial Adjustment: Life Change (1305)
Depression Level (1208)	Grief Resolution (1304)	Role Performance (1501)
Discomfort Level (2109)	Guilt Resolution (1310)	Self-Esteem (1205)
Family Health Status (2606)	Hope (1201)	Social Interaction Skills (1502)
Family Integrity (2603)	Knowledge: Substance Use Control (1812)	Smoking Cessation Behavior (1625)
Family Resiliency (2608)	Loneliness Severity (1203)	Stress Level (1212)

Outcomes associated with related factors

Abuse Recovery (2514)	Family Coping (2600)	Substance Addiction Consequences (1407)
Decision-Making (0906)	Smoking Cessation Behavior (1625)	

Outcomes linked to at-risk population and associated conditions

Abuse Protection (2501)	Financial Literacy Behavior (2014)

Suggested nursing interventions for problem resolution

Abuse Protection Support (6400)	Crisis Intervention (6160)	Hope Inspiration (5310)
Anxiety Reduction (5820)	Family Integrity Promotion (7100)	Parenting Promotion (8300)
Behavior Modification (4360)	Family Mobilization (7120)	Risk Identification (6610)
Behavior Modification: Social Skills (4362)	Family Process Maintenance (7130)	Role Enhancement (5370)
Calming Technique (5880)	Family Support (7140)	Socialization Enhancement (5100)
Commendation (4364)	Family Therapy (7150)	Sibling Support (7280)
Conflict Mediation (5020)	Financial Resource Assistance (7380)	Spiritual Support (5420)
Coping Enhancement (5230)	Grief Work Facilitation (5290)	Substance Use Prevention (4500)
Counseling (5240)	Guilt Work Facilitation (5300)	Substance Use Treatment (4510)

NANDA-I diagnosis: Caregiver Role Strain (00061)
Definition: Difficulty in fulfilling care responsibilities, expectations and/or behaviors for family or significant others

Outcomes to measure resolution of diagnoses	Caregiver Performance: Direct Care (2205)	Caregiver Performance: Indirect Care (2206)

Outcomes to measure defining characteristics

Anxiety Level (1211)	Depression Level (1208)	Mood Equilibrium (1204)
Caregiver Adaptation to Patient Institutionalization (2200)	Family Normalization (2604)	Personal Time Management (1635)
Caregiver Emotional Health (2506)	Family Support During Treatment (2609)	Sleep (0004)
Caregiver-Patient Relationship (2204)	Fatigue Level (0007)	Stress Level (1212)
Caregiver Physical Health (2507)	Gastrointestinal Function (1015)	Weight Maintenance Behavior (1628)
Coping (1302)	Hypertension Severity (2112)	
	Leisure Participation (1604)	

Outcomes associated with related factors

Abusive Behavior Self-Restraint (1400)	Family Coping (2600)	Psychomotor Energy (0006)
Caregiver Home Care Readiness (2202)	Family Health Status (2606)	Psychosocial Adjustment: Life Change (1305)
Caregiver Lifestyle Disruption (2203)	Family Resiliency (2608)	Social Involvement (1503)
Caregiver Role Endurance (2210)	Family Social Climate (2601)	Social Support (1504)
Caregiver Stressors (2208)	Knowledge: Time Management (1866)	Substance Addiction Consequences (1407)
Caregiver Well-Being (2508)	Personal Resiliency (1309)	

Outcomes linked to at-risk populations and associated conditions

Cognition (0900)	Development: Late Adulthood (0121)	Family Functioning (2602)
Self-Management: Chronic Disease (3102)	Development: Middle Adulthood (0122)	
Symptom Severity (2103)	Development: Young Adulthood (0123)	

Suggested nursing interventions for problem resolution

Abuse Protection Support (6400)	Family Integrity Promotion (7100)	Risk Identification (6610)
Anxiety Reduction (5820)	Family Involvement Promotion (7110)	Role Enhancement (5370)
Caregiver Support (7040)	Family Mobilization (7120)	Sleep Enhancement (1850)
Case Management (7320)	Family Process Maintenance (7130)	Socialization Enhancement (5100)
Commendation (4364)	Family Support (7140)	Substance Use Prevention (4500)
Conflict Mediation (5020)	Financial Resource Assistance (7380)	Support System Enhancement (5440)
Coping Enhancement (5230)	Health System Guidance (7400)	Weight Management (1260)
Counseling (5240)	Home Maintenance Assistance (7180)	
Environmental Management: Home Preparation (6485)	Referral (8100)	
	Respite Care (7260)	

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TABLE 1 Continued

NANDA-I diagnosis: Risk for Caregiver Role Strain (00062)
Definition: Susceptible to difficulty in fulfilling care responsibilities, expectations and/or behaviors for family or significant others, which may compromise health

Outcome to assess and measure actual occurrence of the nursing diagnosis

Caregiver Lifestyle Disruption (2203)	Caregiver Wellbeing (2)	Caregiver Role Endurance (2210)

Outcomes associated with Risk Factors

Caregiver Emotional Health (2506)	Discharge Readiness: Independent Living (0311)	Health Beliefs: Perceived Threat (1704)
Caregiver Home Care Readiness (2202)	Family Normalization (2604)	Health Seeking Behavior (1603)
Caregiver-Patient Relationship (2204)	Family Resiliency (2608)	Leisure Participation (1604)
Caregiver Performance: Direct Care (2205)	Family Support During Treatment (2609)	Personal Time Management (1635)
Caregiver Physical Health (2507)	Fatigue Level (0007)	Rest (0003)
Caregiver Stressors (2208)	Health Beliefs: Perceived Resources (1703)	Sleep (0004)
Coping (1302)		Social Support (1504)

Outcomes associated with at-risk population and associated conditions

Abusive Behavior Self-Restraint (1400)	Financial Literacy Behavior (2014)	Psychosocial Adjustment: Life Change (1305)
Caregiver Physical Health (2507)	Psychomotor Energy (0006)	Self-Esteem (1205)

Suggested nursing interventions for problem resolution

Abuse Protection Support (6400)	Family Integrity Promotion (7100)	Respite Care (7260)
Caregiver Support (7040)	Family Involvement Promotion (7110)	Risk Identification (6610)
Case Management (7320)	Family Mobilization (7120)	Role Enhancement (5370)
Commendation (4364)	Family Process Maintenance (7130)	Sleep Enhancement (1850)
Coping Enhancement (5230)	Family Support (7140)	Socialization Enhancement (5100)
Counseling (5240)	Financial Resource Assistance (7380)	Support System Enhancement (5440)
Environmental Management: Home Preparation (6485)	Home Maintenance Assistance (7180)	
	Referral (8100)	

Domain 9. Coping/Stress Tolerance

NANDA-I diagnosis: Compromised Family Coping (00074)Definition: An usually supportive primary person (family member, significant other, or close friend) provides insufficient, ineffective, or compromised support, comfort, assistance, or encouragement that may be needed by the client to manage or master adaptive tasks related to his or her health challenge

Outcomes to measure resolution of diagnoses	Family Coping (2600)	Family Support During Treatment (2609)

Outcomes to measure defining characteristics

Caregiver Home Care Readiness (2202)	Caregiver Performance: Indirect Care (2206)	Knowledge: Treatment Regimen (1813)
Caregiver-Patient Relationship (2204)	Family Integrity (2603)	Participation in Health Care Decisions (1606)
Caregiver Performance: Direct Care (2205)	Family Normalization (2604)	Social Support (1504)

Outcomes associated with related factors

Caregiver Emotional Health (2506)	Caregiver Role Endurance (2210)	Family Functioning (2602)
Caregiver Lifestyle Disruption (2203)	Caregiver Stressors (2208)	Knowledge: Disease Process (1803)

Outcomes linked to at-risk populations

Caregiver Well-Being (2508)	Development: Middle Adulthood (0122)	Psychosocial Adjustment: Life Change (1305)
Development: Late Adulthood (0121)	Development: Young Adulthood (0123)	

Suggested nursing interventions for problem resolution

Caregiver Support (7040)	Family Involvement Promotion (7110)	Respite Care (7260)
Commendation (4364)	Family Mobilization (7120)	Role Enhancement (5370)
Coping Enhancement (5230)	Family Process Maintenance (7130)	Sibling Support (7280)
Counseling (5240)	Family Support (7140)	Support System Enhancement (5440)
Crisis Intervention (6160)	Family Therapy (7150)	Teaching: Disease Process (5602)
Developmental Enhancement: Adolescent (8272)	Health Education (5510)	Teaching: Procedure/Treatment (5618)
Family Integrity Promotion (7100)	Hope Inspiration (5310)	

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TABLE 1   Continued

NANDA-I diagnosis: Disabled Family Coping (00073)

Definition: Behavior of the primary person (family member, significant other, or close friend) that disables his or her capacities and the client's capacities to effectively address tasks essential to either person's adaptation to the health challenge

Outcome to measure resolution of diagnoses	Family Coping (2600)	
Outcomes to measure defining characteristics		
Abusive Behavior Self-Restraint (1400)	Caregiver Performance: Indirect Care (2206)	Family Support During Treatment (2609)
Aggression Self-Restraint (1401)	Caregiver Physical Health (2507)	Neglect Cessation (2513)
Agitation Level (1214)	Caregiver Stressors (2208)	Self-Direction of Care (1613)
Anger Self-Restraint (1410)Caregiver Emotional Health (2506)	Caregiver Well-Being (2508)	Self-Direction of Instrumental Activities of Daily Living (1639)
Caregiver Home Care Readiness (2202)	Depression Level (1208)	Social Support (1504)
Caregiver-Patient Relationship (2204)	Family Health Status (2606)	
Caregiver Performance: Direct Care (2205)	Family Participation in Professional Care (2605)	
	Family Resiliency (2608)	
Outcomes associated with related factors		
Caregiver Lifestyle Disruption (2203)	Coping (1302)	Family Social Climate (2601)
Caregiver Role Endurance (2210)	Family Integrity (2603)	
Suggested nursing interventions for problem resolution		
Abuse Protection Support (6400)	Family Integrity Promotion (7100)	Health System Guidance (7400)
Behavior Modification (4360)	Family Mobilization (7120)	Life Skills Enhancement (5326)
Caregiver Support (7040)	Family Process Maintenance (7130)	Role Enhancement (5370)
Coping Enhancement (5230)	Family Support (7140)	Self-Efficacy Enhancement (5395)
Counseling (5240)	Family Therapy (7150)	
Family Involvement Promotion (7110)	Functional Ability Enhancement (1665)	

directly than the family but were included due to the interrelationship of the individual and the family in managing health (Rosland et al., 2008; Schulman-Green et al., 2012). For example, *Symptom Severity (2103)* is a specific outcome related to the individual but within the defining characteristics of this nursing diagnosis; it aligns with "the acceleration of illness symptoms of a family member" (Herdman & Kamitsuru, 2018, p. 153), supporting the inclusion within the linkage.

We identified nursing interventions targeted at the individual and family, as indicated by the perspectives gleaned from the literature (Rosland et al., 2008; Ryan & Sawin, 2009; Schulman-Green et al., 2012). These included *Health Coaching (5305)*, *Health Literacy Enhancement (5515)*, *Mutual Goal Setting (4410)*, *Teaching: Disease Process (5602)*, and *Teaching: Procedure/Treatment (5618)* (Butcher et al., 2018).

Family functions and processes

Family life has been greatly affected by COVID-19 and this health crisis tends to weaken family functions and disturb family processes. There are two nursing diagnoses selected, *Interrupted Family Processes (00060)* and *Dysfunctional Family Processes (00063)*. Both are in the NANDA-I *Domain 7: Role Relationship*.

Families are struggling during this time to handle all the aspects of daily life. These challenges relate to the unavailability of the traditional systems of schools, religious offerings, social services, businesses, as well as loss of employment (Douglas et al., 2020; Luttik et al., 2020; Thompson & Rasmussen, 2020). With shelter in-place measures being implemented, normal family rituals and routines are interrupted,

and this may continue for long periods of time (Campbell, 2020). For example, there are no holiday events and many families experience the loss of family social gatherings or celebrations. There are new roles family members must assume such as educating their children at home, adapting to working from home, securing new resources to meet needs, and the additional responsibilities of learning about and caring for ill family members (Phillips et al., 2020). In addition, parents may have to adapt strategies to limit media exposure about COVID-19 to their children and at the same time work to continue "normal routines" as much as possible (Cluver et al., 2020).

All families and their interrelationships are under tremendous stress related to the changes in family functioning as a result of the pandemic (Luttik et al., 2020; Usher et al., 2020). Due to these stressors and challenges, the following nursing outcomes are selected for the nursing diagnosis: *Interrupted Family Processes (00060)*: *Decision-Making (0906)*, *Family Coping (2600)*, *Family Functioning (2602)*, *Family Support During Treatment (2609)*, and *Health Literacy Behavior (2015)* (Moorhead et al., 2018). To guide the critical thinking of the nurses, we identified these nursing interventions: *Counseling (5240)*, *Family Mobilization (7120)*, *Family Process Maintenance (7130)*, *Role Enhancement (5370)*, and *Sibling Support (7280)* (Butcher et al., 2018).

The other nursing diagnosis selected is *Dysfunctional Family Processes (00063)*. In the COVID-19 climate, the family challenges mentioned above combine with imposed social isolation, heightened levels of stress and anxiety, financial uncertainty, weakened family processes, and destabilized family functioning and contribute to individuals' exhibition of negative behaviors (Bradley et al., 2020; Campbell, 2020; Cluver et al., 2020; Douglas et al., 2020; Tucker &

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Rodriguez, 2014). If stressors are major and resources available to the individual, family, or the community are limited, issues are likely to occur with at least one of the family members (Yingling, 2020). All these factors create a situation ripe for abuse within the family (Campbell, 2020; Taub, 2020; Tucker & Rodriguez, 2014).

This perspective has led us to select nursing outcomes such as *Abusive Behavior Self-Restraint (1400)*, *Family Integrity (2603)*, *Family Risk Control: Bullying (2612)*, *Social Interaction Skills (1502)*, and *Stress Level (1212)* (Moorhead et al., 2018). Continuing with this theme, the nursing interventions suggested are as follows: *Abuse Protection Support (6400)*, *Family Support (7140)*, *Family Therapy (7150)*, *Sibling Support (7280)*, and *Socialization Enhancement (5100)* (Butcher et al., 2018).

Family caregiving

We selected four nursing diagnoses related to family caregiving situations. The first nursing diagnosis, *Caregiver Role Strain (00061)*, is in the NANDA-I *Domain 7: Role Relationship*. The NOC outcomes to measure resolution of this nursing diagnosis were *Caregiver Performance: Direct Care (2205)* and *Caregiver Performance: Indirect Care (2206)*, which are in NOC *Domain VI: Family Health*. In addition, we found that the nursing diagnosis *Risk for Caregiver Role Strain (00062)*, also in the NANDA-I *Domain 7: Role Relationship*, contained many of the risk factors present in families experiencing COVID-19 (e.g., care receiver increase in care needs, unpredictability of illness trajectory, caregiver isolation, stressors, change in nature of care activities [Herdman & Kamitsuru, 2018, p. 281]). The NOC outcomes to assess and measure actual occurrences of this nursing diagnosis were *Caregiver Lifestyle Disruption (2203)*, *Caregiver Well-Being (2508)*, and *Caregiver Role Endurance (2210)*, in NOC *Domain VI: Family Health*.

It is evident that caregivers are playing a key role in the COVID-19 pandemic (Phillips et al., 2020) as they care for family members who may be at greater risk due to age, disability, or comorbidities. Brennan et al. (2020) and Canevelli et al. (2020) support this notion and identify gaps that exist in services to support caregivers. Caregivers assist in an overtaxed healthcare system, while placing themselves at a higher risk for contracting the virus. In addition, the restrictive COVID-19 containment strategies may adversely affect caregivers and require them to provide higher levels of care, while being isolated from support systems and resources (Phillips et al., 2020).

The family care situation during a pandemic is complex. Isolation and lack of adequate support are conditions that take a significant toll on the psychological and physical health of care recipients (Tebb & Jivanjee, 2000). Social isolation may contribute to the hastening and general deconditioning of the person cared for, which in turn increases the need for more direct care (Phillips et al., 2020). This cycle of decline and increasing needs of the care recipient creates additional stress (Phillips et al., 2020) and leads to a decline in the caregivers' health (Tebb & Jivanjee, 2000). If caregivers cannot provide care, they become fearful about who will be able to care for the family member (Luttik et al., 2020; Phillips et al., 2020). Based on this complex situation, additional nursing outcomes for *Caregiver Role Strain (00061)* are as follows: *Caregiver Lifestyle Disruption (2203)*, *Caregiver Stressors (2208)*, *Family Social Climate (2601)*, *Social Involvement (1503)*, and *Social Support (1504)* (Moorhead et al., 2018). Based on the risk for this complex situation, additional nursing outcomes for *Risk for Caregiver Role Strain (00062)* are *Caregiver Physical Health (2507)*, *Psychosocial Adjustment: Life Change (1305)*, and *Self-Esteem (1205)*.

Special support for the care recipients and caregivers is needed (Phillips et al., 2020). Canevelli and colleagues (2020) suggest that self-help guidance and additional resources should be provided to families and any other caregivers to enhance the care of individuals during this pandemic. The following NIC interventions may be considered: *Caregiver Support (7040)*, *Case Management (7320)*, *Environmental Management: Home Preparation (6485)*, *Family Involvement Promotion (7110)*, *Respite Care (7260)*, and *Support System Enhancement (5440)* (Butcher et al., 2018), for both *Caregiver Role Strain (00061)* and *Risk for Caregiver Role Strain (00062)*.

The other nursing diagnoses related to family caregiving situations are *Compromised Family Coping (00074)* and *Disabled Family Coping (00073)* in NANDA-I *Domain 9: Coping/Stress Tolerance*. Both nursing diagnoses imply dysfunction of family caregiving, but it is not apparent from the nursing diagnoses labels. This discrepancy is due to inconsistency between the labels and the definitions of the nursing diagnoses. The label of the nursing diagnosis, *Compromised Family Coping (00074)*, indicates the coping level of the family. However, the nursing diagnosis definition is focused on the caregiver's behaviors: "An usually supportive primary person (family member, significant others, or close friend) provides insufficient, ineffective, or compromised support, comfort, assistance, or encouragement that may be needed by the client to manage or master adaptive tasks related to his or her health challenge" (Herdman & Kamitsuru, 2018, p. 331). Based on the definition and the defining characteristics, a more appropriate diagnostic label would be *Ineffective Caregiver Coping* (proposed).

We suggest adding a phrase about the caregiver's role acceptance, such as insufficient acceptance of the caregiver role or expressed reluctancy to take the caregiver role, to the defining characteristics of the nursing diagnosis *Compromised Family Coping (00074)*. Family caregivers' perception of a situation and acceptance of their caregiver roles can alter coping methods. Williams et al. (2014) found that when caregivers accepted a situation, they tended to take more proactive coping approaches in dealing with caregiving demands, but when they perceived loss of control, uncertainty, or helplessness in the situation, the coping method of choice was avoidance (Williams et al., 2014). In addition, the caregivers in their study refrained from seeking information or knowledge as a way of dealing with the circumstances of uncertainty (Williams et al., 2014).

A specific finding of Williams et al. (2014) supports the wording in the defining characteristic of this nursing diagnosis, which is "limitation in communication between support person and client" (Herdman & Kamitsuru, 2018, p. 331). Williams and her colleagues concluded that maintaining communication improved the relationship between the caregiver and care recipient, allowed care recipients to express their appreciation, and enabled caregivers to feel positive in their caregiving role.

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Patterson (2002) identifies that families' perceived meanings about their demands render them either able or unable to cope. Folkman (2010) reinforces this concept by concluding that when caregivers are faced with adversity, they adopt a meaning-focused approach to deal with the stressors. Various theorists note that the family's ability to provide meaning to the stressful events or crises is a crucial element of family adaptation or of family adjustment (Patterson, 2002; Saltzman et al., 2013). Specifically, Patterson (2002) proposes that families create meaning from the demands placed on them. If their capabilities exceed the meanings of the demands (stress), then family adaptation is achieved. But if the demands (stress) are greater than the capabilities of the family, a crisis results, and decreased family function occurs along with a need to strive for family adaptation. Clearly, it is critical for nurses to recognize the significant role of family caregivers (Williams et al., 2014) and acknowledge their needs as well as their contributions (Wong & Wallhagen, 2014). Furthermore, it is suggested to actively seek information about the individual's view of their caregiving experience (Williams et al., 2014).

Based on these ideas, several selected outcomes to measure resolution of the nursing diagnosis Compromised Family Coping (00074) are Caregiver Home Care Readiness (2202), Caregiver Lifestyle Disruption (2203), Caregiver-Patient Relationship (2204), Knowledge: Disease Process (1803), Knowledge: Treatment Regimen (1813), and Psychosocial Adjustment: Life Change (1305) (Moorhead et al., 2018). To support family caregivers and their caregiving situation, NIC interventions are Caregiver Support (7040), Commendation (4364), Crisis Intervention (6160), Family Support (7140), and Support System Enhancement (5440) (Butcher et al., 2018).

The final nursing diagnosis in our linkage is *Disabled Family Coping (00073)*. As mentioned above, the label and the definition of this nursing diagnosis are not consistent. The label indicates the coping level of the family, but this nursing diagnosis defines caregiver's behavior as follows: "Behavior of primary person (family member, significant other, or close friend) that disables his or her capacities and the client's capacities to effectively address tasks essential to either person's adaptation to the health challenge" (Herdman & Kamitsuru, 2018, p. 333). A more appropriate label for this nursing diagnosis would be *Dysfunctional Caregiver-Care Recipient Dyad* (proposed) because the defining characteristics primarily focus on the caregiver, but the definition addresses the consequences of the inabilities of the caregiver and the care recipient to adapt to the situation.

In examining this final nursing diagnosis and its use in describing potential COVID-19 family-related issues, we noted that every family has a function to protect vulnerable family members (Patterson, 2002). However, in a pandemic such as COVID-19, the social isolation and limited availability of services compound the situation for persons at risk for abuse. Psychological distress, unemployment or reduced working hours, financial difficulties, and uncertainty about the future tend to heighten alcohol and drug abuse and create situations that may lead to an increase in domestic violence, especially in lower socioeconomic populations (Rehm et al., 2020).

Campbell (2020) describes this as the "worst case" scenario, where the possible victims of the abuse find themselves sheltered at home with a potential abuser. Mion and Momeyer (2019) identify behaviors of the perpetrator as caregiver burden, accumulated stress, withholding support, or even forbidding handwashing and medical treatments if the victims contract the virus. The factors increasing the abuse risk associated with the care recipient may be cognitive decline, depression, anxiety, and perhaps family disharmony, and serve to create an ineffective or dysfunctional relationship between the caregiver and the care recipient (Douglas et al., 2020; Elman et al., 2020; Mion & Momeyer, 2019; Riffin et al., 2013). Based on these potential caregiving issues during a pandemic, the suggestions for selected nursing outcomes are as follows: *Abusive Behavior Self-Restraint (1400); Aggression Self-Restraint (1401), Caregiver Performance: Direct Care (2205), Coping (1302), Neglect Cessation (2513)*, and *Self-Direction of Care (1613)* or *Self-Direction of Instrumental Activities of Daily Living (1639)* (Moorhead et al., 2018).

Nonetheless, not all caregiver–care recipient dyads have the makings of a mistreatment scenario. Per Chappell and Dujela (2009), selected individuals in caregiving situations are not overburdened and meet the demands of the situation without becoming dysfunctional. Based on the potential of having functional dyads, it was appropriate to include the outcome *Self-Direction of Instrumental Activities of Daily Living (1639)*, even though it communicates personal actions by the individual. For example, consider that the main childcare provider, elder care provider, or the individual who assumes most of the household tasks contracts COVID-19. In any of these situations, other persons within the family, members of the support network, or hired caregivers will need to be "directed" by the infected persons to help in doing tasks or activities that the ill persons would usually complete.

This is supported by Lewis' (2020) commentary involving women in the workforce during COVID-19. It is noted that women have entered the workforce in large numbers, but their "second shift" work is still expected, and women continue with those duties after the normal workday (Lewis, 2020). Thus, in many partnerships the significant others may not be knowledgeable of the work that needs to be completed to maintain the functioning of the household (Lewis, 2020), but may be directed by the knowledgeable but ill members to complete tasks that preserve the family.

To support and assist families experiencing these dysfunctional processes, we identified several nursing interventions. Some of those identified were as follows: *Abuse Protection Support (6400), Behavior Modification (4360), Counseling (5240), Impulse Control Training (4370), Role Enhancement (5370), Self-Care Assistance (1800)*, and *Self-Efficacy Enhancement (5395)* (Butcher et al., 2018).

LIMITATIONS

For expert opinion reviews of this nature, there may be limitations to the work. This is a study that proposed links between nursing diagnoses, outcomes, and interventions that may have application in clinical practice for families encountering COVID-19 and its subsequent issues, according to the opinion of these eight nurses. The focus of the work on families and caregivers during COVID-19 may have limited the selection of other diagnoses, outcomes, and interventions, particularly

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as the team did not describe situations involving families recovering from an experience of COVID-19. Thus, there were additional avenues to explore which could add to the body of the work, for instance those families with individuals who present with complications of COVID-19, or who have specific co-morbidities, disabilities, substance abuse issues, or dependency relationships.

CONCLUSION

The specific linkages listed in this article support nursing practice by promoting and stimulating the use of three nursing standardized terminologies focused on the unique and varied needs of families and caregivers experiencing COVID-19. Regardless of time and demands on nurses during a pandemic, there is still a need for valid and reliable creation of nursing language to depict and support patient care. Creation of additional terminology focused on nursing diagnoses, interventions, and outcomes for pandemics is a needed aspect of terminology validation, and another useful outcome of this work.

IMPLICATIONS FOR NURSING PRACTICE, RESEARCH, AND EDUCATION

Healthcare practices focused on family processes and dynamics are often dismissed in inpatient and community settings. Frequently, these practices are directed to improving outcomes of medical conditions or procedures rather than to the ability of the patient and their families to continue providing and managing care as a family unit. During the COVID-19 pandemic, families are expected to fulfill responsibilities for the care of members with COVID-19 as well as maintaining the family's own continued good health. All these responsibilities are affected by social and economic changes, such as stay at home mandates and loss of income. Nursing care practices as proposed in these linkages can be used to assist families struggling with COVID-19 pandemic demands while supporting the critical thinking of nurses involved in providing that care.

The linkages described in this paper are a valuable resource for research and nursing education. The use of standardized nursing terminologies to create and document nursing care generates interoperable nursing data enabling researchers to easily identify and quantify nursing care practices focused on family processes and measure the impact of these practices on family outcomes across settings. Nursing educators should use the linkages as an evidence-based learning resource in courses focused on family nursing, in addition to individual and community health.

Finally, the NNN linkages to COVID-19 show the importance and relevance of adopting standardized terminologies to document nursing care to families. In this three-part work, we were able to demonstrate the applicability of standardized nursing terminologies to support nurses in providing care in the individual, community, and family levels. Without the adoption of standardized terminologies to generate interoperable and analyzable data, nursing practice and the contributions of nurses will remain elusive.

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