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Ecological systems theory as applied to family caregivers of older adults during the COVID-19 pandemic

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Abstract

Ecological systems theory (EST) focuses on the individual in varying contexts and emphasizes the bidirectional impact between the person and environmental systems. The intersectional impact influences human development across the life course. The term ecological stems from the scientific reference to ecology, which is the study of how organisms relate to their natural environments. Systems perspectives are based on the belief that persons are constantly interacting with their environment and encircled within networks that can influence an individual or a family in both positive and negative ways. EST is a combined approach of ecological principles and systems theory as first presented by Bronfenbrenner in the 1970s explaining a theory of human development. This paper presents a contemporary analysis of EST based on five philosophical concepts identified by Reamer (1993): political, moral, aesthetics, logic, and epistemology. This analysis looks closer at the application of the EST model related to family caregivers of older adults during the life-changing COVID-19 pandemic.

Keywords: ecological systems theory, older adult population, family caregivers, COVID-19 pandemic

Introduction

Ecological systems theory (EST) focuses on the individual in varying contexts and

emphasizes the bidirectional impact between the person and environmental systems. This intersectional impact influences human development

across the life course. This theory provides a framework for understanding an individual within varying social environments and emphasizes a social focus when working to address problem situations (Payne, 2005). The term ecological stems from the scientific reference to ecology, which is the study of how organisms relate to their natural environments. From a sociological perspective, this often refers to how human beings or groups relate to their existing environments and is linked with human ecology (Dale, Smith, Norlin & Chess, 2009). Systems perspectives are based on the belief that persons are constantly interacting with their environment and encircled within networks that can impact an individual or a family in both positive and negative ways.

This theory is a combined approach of ecological principles and systems theory first presented by Bronfenbrenner in the 1970s as a theory of human development (Bronfenbrenner, 1994). EST very much relates to the meta paradigm in social work, commonly referred to as the person-in-environment perspective. This is described as how an individual and their numerous and complex environments are interactive and synergistic with each other in ways that simultaneously affect one another (Weiss-Gal, 2008). The ecological perspective provides a framework for understanding how an individual or family fits with their environment and assumes that when a person or group is connected and engaged within a supportive environment, then functioning improves. Social workers can use this model to evaluate the best fit, usually for an individual, by examining the difference

between the amount of social support needed by the person and the amount of social support available in the existing environment. Once this assessment occurs, the social worker engages with the individual and collaborates with them to improve needed support. One unique feature of the ecological model is its distinguished concept of human development from an environmental perspective. The ecological environment is thought of as a nested structure. Starting with aspects most proximal to the individual and branching out, these networks include a micro-system, mesosystem, ecosystem, macro-system, and chronosystem (Bronfenbrenner, 1994).

This paper presents an analysis of EST based on five philosophical concept domains identified by Reamer (1993): political, moral, aesthetics, logic, and epistemology. For example, in this analysis, multiple aspects of older adults, aging, and family caregivers will be interspersed throughout to illustrate how this theory relates to social work practice during the COVID-19 pandemic. The primary purpose of this paper will be to provide a contemporary analysis of the EST model according to Reamer's conceptual domains by identifying goals, strengths, and weaknesses as applied to family caregivers of older adults impacted by the COVID-19 pandemic.

Aging in Society During COVID-19 Pandemic

According to the U.S. Census Bureau, adults aged 65 and older in the United States today comprise 15.2 % of the actual population, equivalent to one in seven people (Administration for Community

Living, 2018). This number is growing at an alarming rate due to the first baby boomers turning 60 in 2006. Demographers predict that by 2030 the population of individuals 65 and over may be as high as 72 million people, representing 20% of the entire population.

During a pandemic such as COVID-19, the availability of social services for older adults has become even scarcer, making them at even higher risk. For instance, under shelter-in-place orders, community programs have been or are at risk of being reduced, and Area Agencies on Aging and Medicaid may experience budget cuts on local, national, and state-wide levels (Hoffman et al., 2020).

The health and well-being of older adults have become a matter of public concern, given that the United States is undergoing population aging. The fact that individuals are living longer is known to be partially contributed to the advances made in the health sciences (Antonucci et al., 2019). As technological advances in the health industry improve, it is predicted that average life expectancy will continue to lengthen. Information on quality of life and life satisfaction as a subjective measure of well-being can be useful in medical treatment and planning of care both individually and for a community. These trends are being challenged by COVID-19 in that older adults are dying from the disease at a much higher rate creating complex problems for health care providers and family caregivers not ever seen before. Restrictions created by social distancing are negatively stressing the mental and physical health of older adults to engagement limitations with caregivers and loved ones (Steinman, Perry, et al.,

2020). Examples of this are restrictions placed on visitation, and the absence of family at the bedside to console during illness and death.

Importance of Family Caregivers & Older Adults

Due to the increasing number of older adults living at home and requiring dependent care, there has been an increase in the number of family caregivers that have become involved in the lives of older adult family members to assist with their care needs. COVID-19 has impacted this trend by limiting family involvement with institutional care and creating higher levels of burden on limited staffing pools. The hierarchical compensatory model of informal support, discussed by Novak (2018), emphasizes that older adults in need of elevated care tend to first reach out to others who comprise the innermost part of their social networks and branch outward as care needs increase.

Individuals first sought out for informal caregiving are often a spouse or adult children. Occasionally there is the presence of a niece, nephew, or sibling; however, this does not appear to be as common. The concept of caregiver burden has become an area of research and health concern as older population care needs tend to be lengthier and often create issues related to physical stress, emotional burden, financial dependency, developmental burden, poor health, and decreased quality of life. When these issues are addressed to help improve the life satisfaction of the older adult, interventions are also warranted to decrease stress and improve the health and psychosocial resources of the family caregiver. The impact of COVID-19 has created more

stress on already stressed systems resulting in higher levels of adaptation to sustain.

Caregiving is a common part of the human condition, most people will likely experience at least some sort of caregiving relationship in their lifetime (Lightfoot & Moone, 2020). Given the vital multifaceted role of family caregivers, professional health care workers include them in the clinical decision-making process. These health care workers are inundated by at-risk critically ill COVID-19 inpatients and seek respite by relying on the family (Kent et al., 2020).

Goals of Theoretical Framework

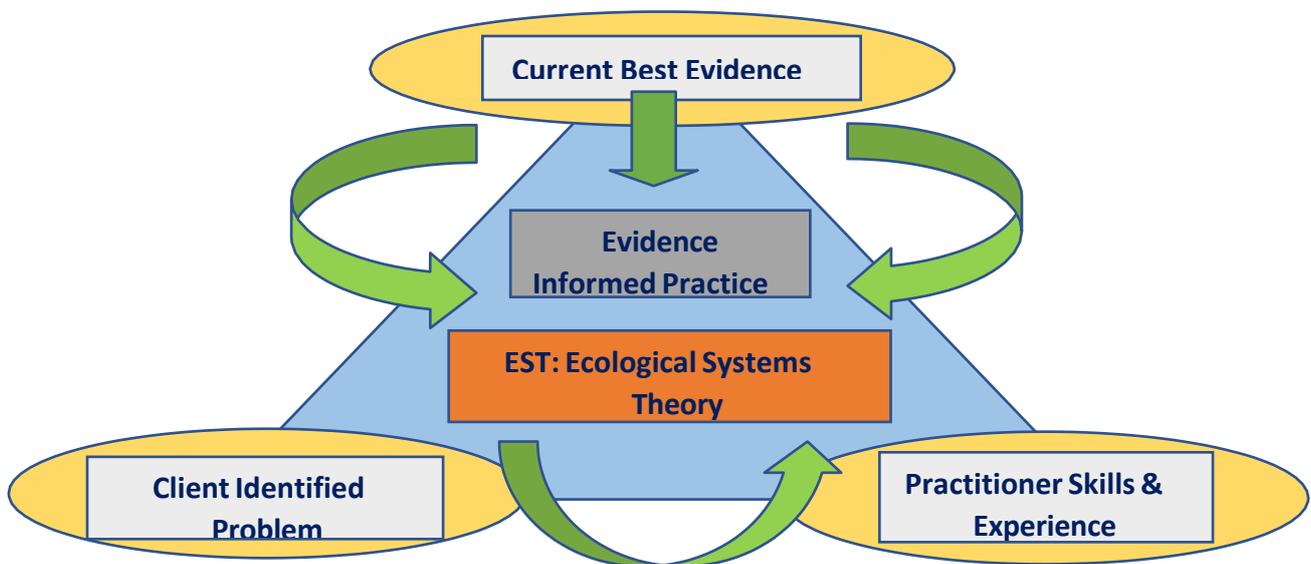
The primary goal of EST is to enhance an individual/family connection to supportive networks to obtain resources and improve functioning. When applied to direct social work practice, this begins with a thorough bio-psychosocial assessment to identify gaps between what is currently working in the system and what is not, what resources are needed, what resources are available, and what is needed to obtain

them. An evidenced-informed practice strategy is applicable here that the experience and skills of the social work practitioner, the primary problem issue of the client, and the most current research on best evidence-based practice with this issue are brought to the table in the decision-making process. This is an important interrelated approach where client-identified problems, practitioner experience and skills, and current evidence interact in a transactional process to achieve solutions and synergize positive and effective change as shown in Figure 1.

Philosophical Components

Frederic Reamer, a respected social work theorist, authored the book entitled *The Philosophical Foundations of Social Work* (1993). Ideas presented by the authors of this paper have laid the groundwork for the analysis of EST based on the five concept domains presented in Reamer's (1993) work, including political, moral, aesthetic, logic, and epistemology.

Figure 1: *Intersectionality of EST with Evidence-Informed Practice*



Looking through the lens of Reamer's conceptual domains, an analysis of how EST is either strong or weak within the context of this framework will be discussed and followed by implications for social work practice and research.

Political

Political philosophies are described as ties to the state or federal government in ways that impact the rights of human beings. This is linked with public law, policies, regulations, and financial resources (Reamer, 1993). An ecological perspective places a strong emphasis on policies that are in place to serve and protect individuals, groups, the environment, and interactions between all of these. With regards to the older adult population, there are services in place to serve and protect older adults in society as seen through the Department of Aging and Disability Services, Medicare, and Adult Protective Services.

EST considers the political stakeholders involved in social problems. This philosophical tenet of Reamer's (1993) work is strongly represented within EST. Examining problems within a multivariate context considers the controversies, people, and resources involved in decision-making from an ecological perspective. This is even more true when EST is combined with the needs of older adults in most cultures as there is a sense of this population having a right to welfare and justice that is often related to the need to care for society's most vulnerable populations (Reamer, 1993). One of the major stressors of COVID-19 has been the requirement of balancing public health safety protocols and personal family needs, including factors such as

working from home, telecommuting, and perhaps unexpected homeschooling or unemployment (Kent, Ornstein, & Dianne-Odom, 2020). Economic stressors of caregiving have always been burdensome for families and the impact of COVID-19 has in many cases exacerbated this problem even further.

Moral

Moral philosophies are value based and ethically driven. Questions regarding morally right and wrong behavior emerge about norms, authority, distribution, and substance (Reamer, 1993). There are aspects of the ecological perspective that are seen as morally right and dutiful to be concerned with; however, this is not equally distributed across all cultures. For example, in the United States, there is less emphasis on respect for older adults than in Asian communities, where it is deeply woven into the religious, social, and cultural norms.

Based on Reamer's (1993) definition of moral philosophy, EST tends to be weaker in this area. The concept of flux and change is not compatible with a set value base, although there is a strong sense of authority when it comes to discussing the need to care for the environment and for older adults. Questions arise with regards to whose interests are being made and agreement is not universal on what is considered to be accepted norms within the ecological perspective. A sense of duty exists in relation to care for the older population; however, determining how this needs to be done within an ecological context is not widely agreed upon. Limited services and determination of the need for these services are situational depending on

the environmental circumstances. Determining what resources are necessary to improve functionality is a difficult task (Reamer, 1993), for which the EST does not necessarily account well within its theoretical framework. Staffing shortages due to COVID-19, successive generations having fewer children, and hours of involvement that family members who are providing supplemental care for older adults are some of the complex problems that families and systems are being faced with. This is resulting in a massive restructuring of caring for older adults and family structure (Lightfoot and Moone, 2020).

Aesthetic

Aesthetics is known as the study of beauty and taste in an artistic sense. Social work has long been referred to as having an artistic and creative component that is interwoven with scientific research and paradigm. Aesthetics in art has the primary goal to create something that is considered beautiful. This relates to social work practice in that the goal of casework is to resolve human problems to enhance social functioning which creates harmony (Reamer, 1993). EST presents as being somewhat strong in the area of aesthetics in that there is an emphasis on intrinsic questions and a broad systems approach.

This implies a need for harmony and balance between human beings and the natural world to improve functioning, which is a beautiful interplay. In a summit regarding ecological practices in China, a call was made upon the need for wisdom in developing ecological awareness to help improve global sustainability (Zhibang, 2009). Wisdom and compassion are

aesthetic components that very much relate to an intuitive understanding inherent within EST. While there are many things about growing old that are not considered to be attractive by some, an acceptance and harmony with the natural process of aging is a strength of the ecological perspective. Family caregiving is a natural extension of this aesthetic component by providing additional resources necessary for daily living support, monitoring, and communication of care needs. During COVID-19, the presence and absence of family caregivers are being felt at a more profound level resulting in a dire need for creative problem solving to wrap around fulfilling the care needs of the older adult.

Logic

Logic within a philosophical context is the study of reasoning; what is considered good, bad, correct, and incorrect. This is explored through methods and principles that have been established as valid and involve forms of argument, fallacies, deduction, and induction (Reamer, 1993). Logic places a strong emphasis on language and definitions to ensure that there is a valid relationship between terms of comparison when arguments are made. Language is used to inform, express, and influence behavior and therefore needs to be analyzed when arguments are made and conclusions are drawn (Reamer, 1993).

EST is language driven. Systems principles rely on a specific vocabulary that is used to communicate the assessment protocol and techniques of application. Sophisticated terms such as homeostasis, structure, emergence, open and closed systems, input, output, and boundaries are all used to describe and communicate the

characteristics of an individual or group based on a systems perspective (Dale, Smith, Norlin & Chess, 2009). This can help practitioners in guarding against potential fallacies when determining interventions based on a common language which makes the concept of logic strong within the framework of EST. Examples of this include multifaceted ways to integrate family members into the support process using technology, Zoom, and live cams when communicating with their older relatives (Lightfoot and Moone, 2020).

Epistemology

The root of the word epistemology is episteme' which means knowledge ("Merriam-Webster, "n.d.). Philosophers are known for saying this is how we know what we know in terms of truth. Scientists see this as the basis for research empiricism that is based on observable fact (Reamer, 1993). EST places a strong emphasis on the potential for change and agrees with what philosophers term the Heraclitean flux. Heraclitus was one of the first Greek philosophers that talked about change using the metaphor of a flowing river that is constantly in flux. An example is given with how no one ever steps into the same river twice as it is always changing, flowing, and moving on.

According to Heineman, in the 1950s there began to be a break from the strict controls of the logical empiricists, and discussions regarding alternative forms of research design began. Arguments against concepts such as operational definitions, symmetry thesis, and reductionism began to emerge in the behavioral and scientific community. This is partly due to advances made in the area of quantum physics and

mechanics that have shown the existing element of the unknown and mutability which helps link theory to scientific data (Tyson, 1994). These advances began to challenge the beliefs of what is known and bring about a different level of truth based on experiences that were not previously observable or comprehended. This has been a challenge for older adults during the COVID-19 pandemic at which time news and factual evidence about the virus has been rapidly changing and developing. At times the information available has been skewed based on political warfare, scare tactics, and fake news resulting in self-doubt, fear, and panic.

Strengths of Model

Exploring social problems from an ecological perspective can help to answer any questions related to the why of how things happen but very often creates more questions regarding how. One of the strengths of an EST approach is the depth and integration that is involved when attempts are made at understanding human development across the lifespan. Looking at problems associated with quality of life such as health care, poverty, nutrition, housing, and substance abuse are some examples of why problems occur. EST looks at the entire unit of the person's experience, including individual circumstances, family, and community.

An empowerment model is often associated with EST that works together with the client and the extended support system to strengthen and maintain what is necessary to improve functioning (Trask, Hepp, Settles & Shabo, 2009). The care needs of older adults are intricately woven with family caregiving in every culture

around the world. Chinese researchers found a significant correlation between financial strain, social support, education, and fewer physical complaints with each of these being important factors in predicting life satisfaction (Chou & Chi, 1999; Lu et al., 2015). This was a study where significant results were found in the ability to improve self-esteem and self-confidence, which directly affected life satisfaction and overall health conditions. Even though this study was weak by only measuring self-rated perceptions and having a high attrition rate in the second interview of the sample population, it was determined to be a good example of the various aspects of ecological systems in relationship to quality-of-life factors for older adults. There is also a similarity in results with Martyr's study (2018), which identifies predictors for life satisfaction within an ecological framework as applied to the older adult population.

The overall strengths of EST lie in the broad and holistic perspective that it brings to social problems. COVID-19 is an example of an unprecedented social problem needing to be understood in a holistic way to adjust not only to shifting industry standards but a continuous change in family structures and adaptive functioning necessary to meet the need of older adults. No stone is left unturned in the EST model and the subtle complexities of human interaction on many levels are taken into consideration when choices are made regarding interventions and solutions. Client input is strongly encouraged and their expertise about themselves and their situation is taken into consideration. The social worker functions as mediator, facilitator, guide, and resource broker within a complex environmental

system which will hopefully in turn strengthen the client in ways that will support a lasting improvement in functioning. Relying upon the flexibility and resilience of family caregivers during a pandemic supports the use of an EST framework as a best practice approach.

Weaknesses of Model

Critics of the ecological perspective and EST often identify the weaknesses of this theoretical approach as being vague and abstract. Practitioners are described as being aloof and detached from the change process despite an emphasis that is placed on joining or working within the system. From a clinical perspective in social work practice, one weakness is that therapists need to have specialized training that can sometimes be costly. Supervision is stressed as being important to help control internal and external biases. This is not always readily available in agency settings and may be costly to the practitioner to obtain.

A theoretical weakness exists in that while much emphasis is placed on the why of things from a qualitative perspective, very often the how of things from a quantitative perspective is overlooked as being too highly rated or superficial. When utilizing EST as a primary approach, it is recommended that the integration of existing data occurs to strengthen the position of the social worker as a change agent. EST can be so broad that the details are overlooked, but when utilized carefully, extra steps can be taken to include these details and therefore overcome this as an inherent weakness of the model.

An example of how to utilize data to overcome weaknesses in this model is as

follows. Family constellation is a crucial factor to consider when assessing life satisfaction regarding family caregivers. The stress of family caregivers and the relationship between older adults and their caregivers has a significant impact on overall well-being. COVID-19 has generated stressors upon families and systems of care for older adults that have not previously been experienced resulting in quality of life being compromised for many older adults and their families.

The following study was selected because it explores the impact of childlessness on the life satisfaction of older adults living in China. Childlessness is a specific demographic characteristic in the country of China that can be studied to learn more about the impact of this phenomenon within the context of an ecological perspective. Feelings of loneliness, anxiety, and feelings of uselessness are identified as major factors in determining life satisfaction in this study (Zhang & Liu, 2007). Incorporating existing data into the understanding of sociological phenomena is an important strategy for overcoming the weaknesses in an EST model. Being aware of the impact that a pandemic such as COVID-19 has had on the quality of life for older adults and their families can be further evidenced by staying alert to public health data and how statistics are used to monitor the spread of the disease. This requires a willingness to adjust the care needs of this population to maintain best practices and use statistical data to support an EST approach.

Conclusion

EST is an ideal approach for assessing the needs of older adults living in

communities. Due to the rapidly increasing numbers of baby boomers reaching retirement age and beginning to require extended support, it is important for communities and families to address the best fit for the older adult later in life. EST addresses the micro, meso, exo, macro, and chrono systems that are an extension of the individual and works to obtain resources, improve support, and expand networks necessary to maintain a good quality of life for older adults. As older adults experience an increased need for the care it is predicted that in many cases, family caregivers will begin to have a higher level of physical, emotional, and financial burden due to COVID-19 complicating the bereavement process even further. Social distancing and quarantine, combined with an increase in virtual visits that have become a practice norm, have resulted in higher incidences of depression, loneliness, and anxiety as a result of social isolation (Steinman, Perry & Perissinotto, 2020). All of these issues combined warrant an increase in research related to meeting the needs of older adults and their families living in our communities and the impact the COVID-19 pandemic is having on these vulnerable populations and their family members.

Gerontologists speculate that as baby boomers begin to age out their expectations for service and available options for care will increase dramatically. It is expected that this upcoming wave of older adults will demand more comforts and satisfaction in ways that will challenge communities and existing care providers in new ways (Harris, Grootjans & Wenham, 2008). It is important to think about the impact of the COVID-19 pandemic on

family relations and how this will affect relationships for generations to come. The question of ageism cannot be ignored during this unprecedented time.

Many people are casting aside the healthcare needs of an entire generation of older adults as seen by the lack of policies and protocols of protection for older adults that are often clustered into the population category of adults. This presents a multitude of problems for adult caregivers attempting to monitor the care needs of older family members they are separated from and unable to directly advocate for. Caregivers and supportive relatives are being denied access to their loved ones, unable to sit bedside during illness or assist in maintaining safe living conditions. LTC facilities and assisted living facilities are stressed to meet the requirements of social distancing, masking, and other hygienic recommendations that may not be adhered to when sanitization is subpar.

Demographers predict that due to the impact of COVID-19, there will be a re-shaping of families to accommodate the geographical needs of this generation that will have more technological advances than were previously known. More sophisticated options will be required in meeting their care needs. Examples of this include SMART communication devices, alternative housing, and assistive robotics all designed to extend the amount of time an older adult can remain at home with necessary support and eliminate the previously institutionalized standard of care found in nursing home environments. As modern society moves toward increased awareness of environmental concerns and standards of "green living," there is no better time than now to approach social

problems from an ecological perspective. This provides hope and promise for improved human functioning within the micro, meso, exo, macro and chrono systems environment. Now more than ever it becomes imperative to place an emphasis on social work research to address environmental factors that impact and influence decision-making in the application of theory to social work practice.

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