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REVIEW ARTICLE

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Defining the personal determinants of health for older adults

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ABSTRACT

Background: Social Determinants of Health, an established concept widely used in research initiatives and policy planning, are generally defined as the broad community-scale conditions shaping daily life. Meanwhile, much less is known about the positive personal, individual resources impacting health outcomes. These have not been defined as part of a separate health-related model, leaving a gap in overall understanding of the non-clinical resources that shape successful aging and quality of life.

Objective: The primary purpose of this commentary is to propose and define a new concept encompassing critical personal resources to be known as the Personal Determinants of Health (PDOH), built on resilience as a key strength and supported by important factors that have shown to help buffer late-life challenges.

Methods: To inform and support this commentary, we conducted a search of relevant research topics to determine whether critical personal resources impacting health outcomes have been defined in the research or mainstream literature.

Results: Notably, we failed to identify any standard definition for Personal Determinants of Health, nor does this term exist in applied interventions. Thus, Personal Determinants of Health is a unique concept that will be centered on key personal resources including resilience at its core.

Conclusions: A clear opportunity exists to define the Personal Determinants of Health as a new psychosocial and behavioral concept impacting health outcomes, and subsequently to help inform and develop initiatives to improve overall health and quality of life, especially in the later-life years.

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Abbreviations

CDC: Centers for Disease Control and Prevention; PDOH: Personal Determinants of Health; SDOH: Social Determinants of Health; WHO: World Health Organization.

Background

Currently, over 46 million Americans are age 65 years or older, with numbers increasing rapidly [1]. By 2035, at least 20% of the overall US population is expected to reach Medicare eligibility, with growing numbers living to age 85 or longer [1]. In fact, the age 65-plus population is projected to double by 2050, making this the fastest growing segment in the US, while facing increased risk of multiple chronic health conditions [2-5]. Thus, efforts to help older adults age successfully with independence, access to health care, and optimal quality of life remain a priority.

Traditionally, healthcare efforts, dollars, and providers tend to focus on pressing medical and clinical needs [6,7]. Estimates indicate that over 90% of US healthcare dollars are directed toward medical care rather than social investments or disease prevention efforts [7]. However, many older adults face non-clinical challenges and have unique personal needs impacting their health. Research suggests that an individual's health is determined only 10% by traditional health care; 30% by genetics; and 60% by personal circumstances, behaviors, and environment [7]. These important social influences later in life include socioeconomic characteristics, financial security, access to care, community resources, and more [8-10]. Among these, the community or system-level factors are defined as Social Determinants of Health [7-10].

The World Health Organization (WHO) defines Social Determinants of Health (SDOH) as the conditions in which people are born, grow, work, live, and age; the wider set of systems and human needs shaping daily life [9,11-13]. Similarly, the Healthy People 2020 (HP2020) initiative asserts that overall health is determined largely by socioeconomic and demographic status; neighborhood and community resources; access to safe schools and workplaces; and clean water, food, and air [10]. At its core, HP2020 highlights five key areas encompassing the SDOH: economic stability; education; community context; health care; and neighborhood environment [10]. Research indicates that roughly one-third of Americans report they struggle to meet

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this basic social foundation, with stress over providing housing, food, and transportation for their families [11-13].

Despite a significant field work and policy efforts guided by SDOH, less is reported about the individual characteristics or personal resources impacting health outcomes, quality of life, healthcare costs, and utilization. These important personal resources can be drawn upon throughout life to support health, physical and mental functionality, productive engagement, and overall successful aging, supplementing those community-level factors that are more difficult to improve. However, in the research literature, specific personal resources have not been defined as determinants of our health, nor does *Personal Determinants of Health* currently exist as a separate model accepted in research or applied initiatives.

Nevertheless, research findings in various areas confirm the importance of key personal resources especially later in life, despite the lack of an established definition for them [14-17]. Thus, it remains important to fill this gap in understanding of the comprehensive health determinants by establishing a unique concept built around key characteristics that can be addressed at the individual level.

Notably, the COVID-19 pandemic has triggered an ongoing public health crisis worldwide. Serious impacts include widespread, severe illness and death among those infected with the virus; strict social and physical distancing efforts; and a growing emotional and mental health crisis. The high susceptibility of older adults to experience more severe COVID-related illness and death as a result has been a serious concern of this population during the pandemic. In addition, social and physical distancing has already begun to significantly impact social connectedness among seniors, many of whom are already lonely and socially isolated. Older individuals who previously left their homes for social activities, Senior Center involvement, volunteering, appointments, family visits, and errands have generally suspended these activities due to strong recommendations and guidelines urging older Americans to stay home during the outbreak. Subsequently, many seniors have also lost their sense of purpose in life, optimism, and hope for the future with the abrupt absence of these roles and activities. It is evident that the negative effects of this pandemic will be long-lasting for older adults; thus, it is especially critical to act quickly in developing approaches to address key personal determinants within older populations.

UnitedHealthcare (UHC) and AARP Services, Inc. (ASI) are working together on initiatives to help achieve improved health outcomes, healthcare quality, and reduced costs and utilization for a growing population of older Americans. Their priority in developing innovative research directions is to better understand the unique characteristics, needs, and health concerns of older adults covered under AARP® Medicare Supplement Insurance plans from UnitedHealthcare. To that end, the primary purpose of this commentary is to define and establish *Personal Determinants of Health* (PDOH) as a unique new concept built on selected personal resources that buffer challenges later in life. As such, these resources, in supplement to SDOH, must be considered critical components in determining overall health status in order to achieve optimal health outcomes. The long-term intention of this pursuit is to develop feasible strategies that may help older adults build stronger personal resources and thrive as they age.

We propose to define the key PDOH with a foundation of resilience, supported by three key personal resources: purpose in life, optimism, and social connections. Resilience will be highlighted as the foundation of these personal determinants as research consistently demonstrates the important role and critical need for strong resilience and coping skills as a significant factor in older adults' overall health outcomes, longevity, quality of life, and ability to age successfully. Meanwhile, the three other primary resources chosen are measurable, shown to be modifiable, and highly influential as reported in research examining their impacts on successful aging. However, it is important to note that a collection of additional personal resources will also play a supporting role in this concept as it evolves.

Notably, our search of published research and mainstream literature failed to identify any standard definitions or use of the term *Personal Determinants of Health* as an established research topic; nor does this term commonly appear in development of initiatives targeting older populations. Consequently, while some research suggests behavioral or individual characteristics as influences on health, no studies clearly defining any specific collection of resources as personal determinants were identified. Thus, a clear opportunity exists to define and establish PDOH as a unique new concept.

Social determinants of health

The WHO's standard definition of SDOH includes social, political, and economic policies; basic human needs and socioeconomic factors are also included [9-11]. Specifically, established SDOH include safe housing and neighborhoods; transportation; socioeconomic status; education; employment; financial security; food safety/security; public health; and healthcare access and systems [9-11].

Consequently, the US Office of Disease Prevention and Health Promotion's HP2020 initiative also highlights SDOH as one of its four top priorities [10]. In this initiative, HP2020 efforts aim to create and maintain environments that are safe, healthy, and promote health equity for Americans [10]. Aligning with WHO on the key components, HP2020 considers five overarching areas, rather than listing multiple specific determinants: education, economic stability, health/health care, social/community context, and the neighborhood/environment.

Taken together, SDOH have shown to impact healthcare costs, utilization, and quality as well as individual health outcomes, especially among vulnerable populations. SDOH are larger factors typically targeted by community-level, population health approaches versus what individuals can do on their own at a personal level. Consequently, research indicates that older adults desire healthcare providers to be more involved in addressing their non-medical social needs as they navigate their overall health. However, most providers and healthcare efforts in the US continue to focus on clinical conditions and physical health status rather than social factors [6]. Notably, the US spends more in healthcare dollars than any other developed country, with worse health outcomes and lower life expectancy in comparison [12].

Personal determinants of health

Research suggests that up to 60% of individual health status is determined by non-clinical social circumstances and characteristics [18,19]. In fact, certain personal resources have shown potential to help older adults flourish later in life and achieve better health outcomes. However, the most impactful among these remain undefined, despite growing attention on community-level social determinants [19,20]. Thus, defining these factors as personal determinants will promote a greater understanding of established social determinants in combined efforts to improve health outcomes.

Research demonstrates that among older adults, one factor particularly impactful later in life is resilience, defined as the process of adapting well in the face of adversity, or "bouncing back" from difficult experiences [16]. Older adults with high resilience tend to demonstrate better overall health outcomes, longevity, and quality of life [16]. Thus, achieving strong resilience has been suggested as a critical component of successful aging rather than the traditional perspective of an absence of chronic medical conditions.

Research confirms strong associations between resilience and various influences including internal personality traits and characteristics as well as external factors. High resilience has been linked with optimal outcomes, such as higher quality of life, greater happiness, better mental health, wellbeing, lower depression, longevity, and reduced mortality risk [16]. Confirming the important role of resilience later in life, older adults who are less resilient tend to have 24% average annual higher healthcare costs than those with high resilience when adjusting for age, gender, region, income, and health status [19]. Considering these findings, resilience is a logical choice for the foundation of the PDOH concept. Additionally, research suggests that resilience is modifiable, with various studies demonstrating older adults' capacity to build and improve their resilience despite challenging circumstances [16,19]. Finally, resilience is measurable, with several accepted and widely used scales [16,19].

Several internal characteristics and factors are thought to provide a foundation for improved resilience, supporting successful aging from a holistic perspective aside from clinical conditions [16,18-20]. As such, we propose to define the PDOH model based on three of these noted factors that have shown to support high resilience: purpose, optimism, and social connections. For our proposed definition, these were chosen as they are especially meaningful and modifiable among the various contributors to resilience, have demonstrated associations with overall mental and physical health, and can be addressed despite declining health later in life.

Purpose

Strong resilience has been associated with higher purpose in life, described as having goals, a sense of direction, and life meaning [16,19-21]. Positive health outcomes associated with high purpose include not only higher resilience, but also high health literacy, strong social support, fewer chronic conditions, reduced mortality, fewer heart attacks, better overall health, self-reported health, positive health behaviors, and quality of life [17,20-22]. Consequently, since those with higher resilience tend to have strong purpose, it appears the relationship is bi-directional considering that resilience is also strengthened by high purpose [16,20]. Meanwhile, older adults with low purpose in life have shown to face 12% higher annual average healthcare costs compared to those with higher purpose when adjusting for age, gender, income, and health status [19].

Purpose in life has shown to be modifiable, shifting across the life span depending upon life's changes and challenges; thus it can be maintained later in life [19-22]. Level of purpose varies individually yet is derived from a common range of sources, including caregiving, volunteering, family, friends, social interaction, professional work/career, community involvement, education, and hobbies [20].

Optimism

Optimism is widely described as the expectation that good things will happen; a positive outlook about the future that impacts behaviors, thoughts, and stress responses [23-25]. High optimism has demonstrated associations with positive perceptions of aging [23-25]. Therefore, it makes sense to describe optimism for this purpose as a positive view of the aging process among older adults; the perception of future possibility and a vision of hope regardless of one's age.

High optimism is thought to function by encouraging positive thoughts and actions and supporting healthy coping skills. Various studies demonstrate that optimism is associated with health benefits, perhaps through the key mechanism of positive emotions and regulated stress responses [23-26]. In fact, those with higher optimism tend to have better self-regulation of emotions especially under stress and are less likely to engage in unhealthy coping behaviors [25-27]. They also tend to exhibit greater physical activity, healthier eating habits, and abstinence from smoking [25-28]. Optimism has been linked to key outcomes including less depression, better self-reported health, positive emotions, and lower mortality risk [25-28]. Furthermore, studies suggest that optimists are over 40% more likely to recover from severe disability, have 55% lower hospitalization rates, and live several years longer than pessimistic individuals [19]. Conversely, low optimism and poor future outlook are associated with worse self-reported health and lifestyle behaviors [25-28].

Social connections

The third and perhaps most critical determinant is the impact of strong social connections in one's life, known to be extremely influential on health outcomes and quality of life across the years. Social connectedness is considered the perceived view and number of one's social relationships and strength of social support; this includes the extent to which a person is socially integrated and the view of positive (or negative) support from his/her social connections [6]. Social relationships provide a buffer against poor health, stress, and behavioral choices; those with strong connections feel greater security and support and tend to choose better coping strategies during difficult times [14,15,19,27]. Furthermore, positive health outcomes associated with strong social connections include better overall physical and mental health, less depression, lower pain severity, lower mortality risk, and greater satisfaction with health care [15].

In contrast, older adults without strong social connections are particularly vulnerable to loneliness, social isolation, and other negative health outcomes [6,14,15,27]. Notably, older adults are already at greater risk for loneliness and isolation when challenging life transitions begin to impact their social roles and connectedness [14,15]. Loneliness and social isolation are considered separate constructs, yet closely related and both significant influences on social connectedness.

The negative impacts of loneliness and social isolation include depression, poor mental health, poor sleep quality, cognitive decline, higher mortality risk, and reduced quality of life [6,14,15,27]. Furthermore, research demonstrates that older adults who report severe loneliness have higher annual healthcare costs and utilization compared to those reporting no loneliness, adjusted for age, gender, income, and health status as well as social networks [19]. Considering these associations, social connections should be considered a key PDOH for strengthening resilience, especially later in life [14,15,27].

Additional resources and health outcomes

In developing this new concept, we propose that the PDOH model will include additional personal resources to support the foundation of resilience, purpose, optimism, and social connections at its core. In fact, research suggests that multiple factors play a role in strong resilience, such as social support and social networks. These resources, distinct from social connectedness, may be considered as an important supplement in the PDOH model. Similarly, there is evidence that self-perception of aging, self-efficacy, and locus of control are valuable personal resources that should be considered in this model as it evolves (Figure 1).

Notably, it is critical in establishing and defining the PDOH to identify targeted health outcomes. The desired outcomes to consider in improving key personal resources include overall health status and quality of life; stress, depression, and sleep; cognitive and physical function; health risk behaviors; healthcare adherence; preventive care; and ultimately, healthcare satisfaction, utilization, and costs. As a key component of the concept, these outcomes will be included in the PDOH model (Figure 1).

Addressing the personal determinants of health

Considering approaches to boost resilience, one comprehensive review found that effective strategies tend to be multi-dimensional, integrating various activities, skills, and tools [16]. Effective approaches to strengthen resilience have encompassed community involvement, social engagement, coping skills, mindfulness training, happiness/gratitude interventions, and physical activity [16,20]. Enhancing important life skills is also highlighted as an effective strategy, by targeting healthy coping, emotional stability, sense of control, persistence, and optimism [16,19,28].

Although purpose is derived from each individual and differs in its source, pursuits that provide daily meaning are effective in eliciting a sense of purpose in life. To many, continued careers or transitional retirement provide purpose; meaningful work can also take place through volunteering and other community engagement by helping others and counteracting a perceived loss of identity or roles later in life [19,20]. Promising approaches for improving purpose also may include continued learning, expressive writing, and engagement in cultural enrichment [29-31].

Optimism is often known as a stable trait that cannot be changed; however, certain strategies have demonstrated potential to boost optimism with consistent, ongoing efforts [29-31]. Promising strategies to improve optimism include

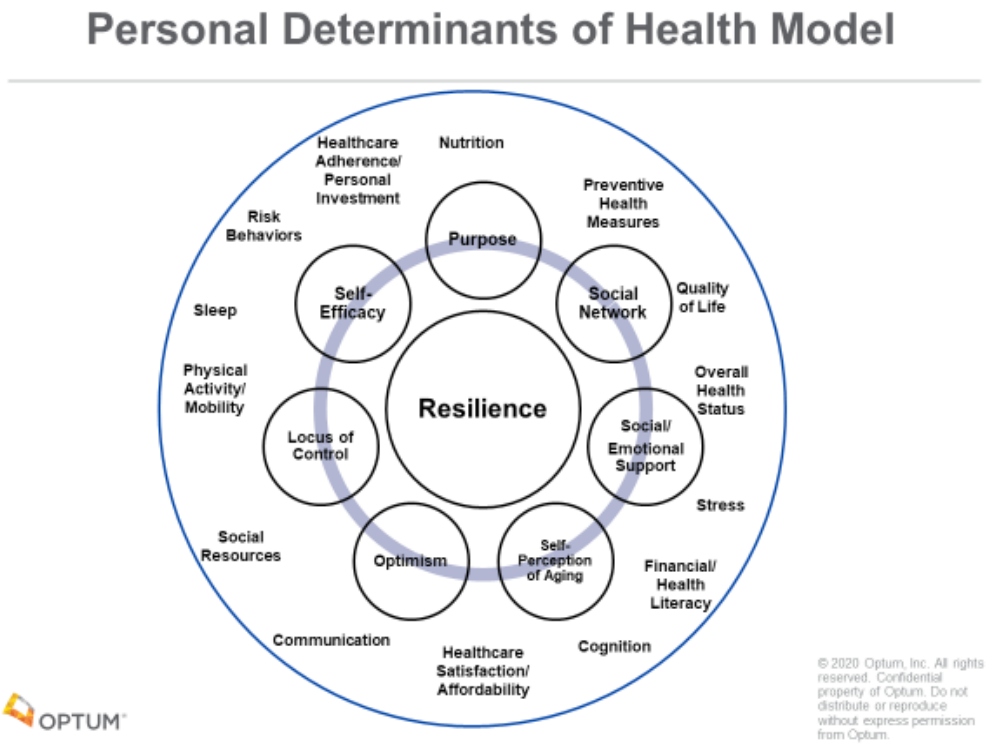

Figure 1: Personal determinants of health model: defining the factors and outcomes.

mindfulness training, expressive writing, life review, happiness/gratitude interventions, coping skills improvement, and multi-generational initiatives to improve perspectives across ages [29-31].

Social connections are widely considered a significant factor impacting strong resilience and health outcomes later in life. Approaches to bring older adults together, engage them with peers and activities, or connect them through technology to resources and healthcare providers appear to hold the best potential for improving and maintaining social connectedness. Promising strategies have utilized telephone-based outreach, volunteering, community involvement, and technology-based interventions [14,15,19].

Notably, technological approaches can be applied to any of the PDOH, and therefore should also be considered for improving purpose, optimism, and overall resilience through integrated multi-dimensional initiatives. Furthermore, in the uncharted years to come following the COVID-19 pandemic, expanded technology will be a critical component for supporting not only social connectedness, independence, and safety, but also overall physical and mental health through virtual communication from a distance.

Policy implications: integrating the SDOH and PDOH

For future directions in healthcare policy and initiatives, it will be important to follow the same path with PDOH as established SDOH efforts are taking, and align focused interventions designed to address both individual and community-level factors. Generally, most efforts to incorporate SDOH into health care have been through case coordination, population health programs, and risk assessment. Although not designed specifically to assess SDOH, several organizations use a quality of life measurement tool known as the Healthy Days Measures to assess social determinants and track population trends [32]. Additionally, existing ICD-10-CM Z-codes identify social needs and socioeconomic factors that impact health [9,10]. Using Z-codes, providers can assess the SDOH with patients and recommend appropriate screenings or interventions. Meanwhile, the CDC provides guidance for larger community goals related to SDOH by outlining several key priorities for initiatives: create partnerships; build capacity; select approaches for change; move to action; document work; and maintain momentum [33]. However, as with other approaches, these steps are collective, community-based, and lacking the critical individual perspective.

Finally, healthcare providers might find it useful to borrow concepts from SDOH interventions to initially improve communication about personal determinants in the clinical setting. In one study, for example, researchers developed a communication toolkit to guide providers in asking patients about SDOH and referring them to appropriate resources based on their responses [34]. Results demonstrated that this toolkit approach effectively helped providers recognize the importance of SDOH and begin useful discussions about these needs with patients [34]. Future intervention efforts could integrate similar tools to initiate and support discussions about PDOH with older patients.

Conclusions

In this commentary, we have proposed a new concept known as *Personal Determinants of Health* (PDOH) with an overall foundation of strong resilience, built primarily by purpose, optimism, and social connections. Additional personal resources will play a role in strengthening resilience as well; the intersection of these resources will be an important component of establishing the overall PDOH model.

Looking ahead, defining this concept will be a critical step in integrating modifiable personal resources into initiatives previously designed only to address system-level social determinants. Doing so will rely on collaboration among healthcare organizations, providers, and other stakeholders, as well as a commitment to expanding approaches that have shown promise. Future work in this area must first establish a consensus on the definition of PDOH as suggested in this commentary, with subsequent research initiatives following that pattern to develop targeted interventions for older adults. Ultimately, potential positive outcomes to target will include improved health risk behaviors, better overall physical and mental health, healthcare cost savings, reduced utilization, successful aging, and optimal quality of life for a growing older population.

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