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Opinion Open Access

Why does Functional Status Matter for Cost-Related Medication Non-Adherence in the Elderly Population?

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Opinion

The access barrier to medication has been a persistent challenge in care for the elderly in the US. Twenty-six percent of the elderly does not take medication as prescribed due to a cost barrier [1] and despite the institution of the medicare part D outpatient prescription drug program, cost-related medication non-adherence (CRN) has not deceased or has even worsened among those who were the sickest and in the most need of assistance to pay for medications [2-5].

Although the access barrier to medication is elusively persistent, researchers have identified several risk factors for CRN, such as lower income, lack of drug coverage in the insurance policy, high out-of-pocket payments (OOPs) for medications, poorer health status (including lower self-perceived general health and depression), and more comorbidities [6-10]. Some risk factors, such as lower income, are external to the health care system and will require a unified social policy to address, while other risk factors, like high OOPs, are driven by market forces that are beyond the control of the providers. A health status, while in general deteriorating among the elderly, reflects both underlining disease as well as unmet medical needs, and hence may deserve careful examination for its role in driving CRNs.

While poor self-perceived general health, depression, and comorbidities have been found to be important risk factors for CRN, little attention has been paid to functional status, which is an important metric of health in the elderly population. Functional limitations are known to be associated with high disease burden and poor outcomes among older persons [11]. Limitations in activities of daily living (ADLs), which include dressing, walking, bathing, eating, getting out of bed, and toileting, are a well-established metric of functional status [12]. Recent studies often control for functional limitations in analyzing the adjusted prevalence or change in CRN [2,13] though its exact pathway to influencing CRN is unclear.

Research that corroborates anecdotal reports of the CRN behaviors of CRN has attributed the cause of CRN to unaffordable OOPs to medications [13-15]. However, OOPs due to medication costs may be merely the tip of the iceberg, as patients who encounter barriers to paying the OOPs for medications may have to pay bills for all types of medical care, including inpatient, ambulatory care, post-acute care, and lab tests at the same time. Hence the poor health that drives up medical care use in general should also be the force that drives up CRN, ceteris paribus, and this is possibly one of the key pathways of how functional status can influence CRN: that is, the higher number of functional limitations is a reflection of increasing frailty in the elderly, which is associated with higher resource use, and hence higher OOPs. The fact that higher number of ADLs is statistically significantly associated with higher OOPs is strong evidence that the insurance coverage for the frail is not adequate while it's needed the most [16].

Functional limitations can also influence CRN indirectly. For example, the lack of mobility due to functional limitations may increase the costs of transportation for patients to get prescriptions refilled, and the time by caregivers tending to the elderly. These are costs outside the medical treatment but that are closely related to the overall economic burden of care to patients. As such cost burden increases, non-adherence to medication may also increase.

There may be other pathways through which functional limitations may be a risk factor of CRN. For example, a higher number of functional limitations may be associated with higher levels of disability during younger ages, severely limiting the earning power of patients. As a result, patients will have a much smaller saving that he or she can use as recourse for the OOPs.

In summary, functional limitations may act as a composite variable reflecting the access barrier to medications. It is a valid risk factor for CRN, but since it reflects a multiple constructs of barriers, caution needs to be taken when interpreting its role in CRN, and hence the formulation of intervention to reduce CRN and improve patient-centered outcomes.

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