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Social Capital and Informal Support in Chronic Disease Care: A Personal Network Study from Ghana

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Abstract

In the context of limited social protection and health security in Ghana, individuals living with non-communicable diseases (NCDs) depend heavily on intergenerational support to meet the recurring costs of care. This study assessed the extent of informal support received by patients with NCDs and examined the factors associated with the provision of such support. A total of 339 patients receiving care for NCDs at three hospitals in Ghana participated in a survey in which they identified members of their personal social networks and reported on the nature of these relationships and the frequency of support received. We examined associations between levels of social support and patients' demographic and health characteristics, as well as attributes of their social ties and overall network structure. Respondents identified 1,371 social connections. Almost 60% reported that their chronic condition limited their ability to perform routine work or household activities, a factor that emerged as the strongest predictor of receiving support. Higher self-reported wellbeing was associated with lower levels of social support. In addition, older age and reliance on co-residing supporters were negatively associated with support, suggesting potential caregiver fatigue or burnout. Individuals living with NCDs in Ghana rely on diverse informal caregivers whose capacity to meet growing healthcare and social demands may be increasingly constrained as the population ages. Strengthening policies that promote collective resource pooling and more inclusive old-age social protection is therefore essential.

Keywords: Informal care, Social capital, Social support, NCDs, Ghana

Introduction

Ghana is increasingly confronted with the dual burden of communicable and non-communicable diseases (NCDs) [1, 2]. Constraints in the availability of services for NCD management have limited patients' ability to obtain appropriate care and have complicated sustained engagement with treatment [3]. Under the Ghana Health Service (GHS) Community-based Health Planning and Services (CHPS) policy, restrictions on the scope of practice for certain healthcare providers and facilities have resulted in uneven and insufficient access to NCD services, particularly within primary healthcare settings [1].

Primary healthcare in Ghana is delivered through a combination of public, faith-based, and privately financed facilities within a tiered system comprising district hospitals, health centers, and CHPS Compounds, all of which provide essential public health and clinical services [4]. Although NCD-related services exist at each level of care, medications for chronic conditions are not consistently available at health centers and CHPS Compounds, which are the most geographically accessible facilities for much of the population [5]. CHPS Compounds typically offer basic NCD screening, including blood pressure and blood glucose testing, but must refer patients to higher-level facilities for definitive diagnosis and treatment. The scope and quality of NCD care at health centers varies depending on institutional

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capacity and staff credentials. However, shortages of healthcare workers trained in NCD management at both CHPS Compounds and health centers frequently lead patients to bypass lower-level facilities and seek care directly at district hospitals or higher levels, even for routine services [6].

For rural residents in particular, the time and financial costs associated with travelling long distances to obtain care can exacerbate existing vulnerabilities, pushing households further into poverty and reducing continuity of care and treatment adherence [6, 7]. Although many patients attending public health facilities are enrolled in health insurance schemes that reduce direct medical expenses, they often depend on financial assistance from family members and social networks to manage non-medical costs such as transportation and lost income. Over the course of chronic illness, however, this informal support often diminishes [8–10].

Intergenerational support represents an important form of social capital and is deeply embedded in cultural norms across sub-Saharan Africa (SSA), where parents care for their children and later receive support from them in older age [11]. Social capital in this context extends beyond purely reciprocal or transactional exchanges and reflects sympathetic and duty-based relationships [12]. In the absence of comprehensive social security systems for older adults, such support plays a critical role in pooling household resources and enabling access to healthcare services [13]. Nevertheless, as populations age and the prevalence of both communicable and non-communicable diseases rises, the demands placed on caregivers intensify, potentially weakening the reliability and sustainability of support available to older individuals [11, 14].

Financial assistance is especially significant for individuals living with NCDs, who face recurring travel costs and opportunity costs when accessing centralized care services [15]. Previous studies in Ghana that directly surveyed caregivers have highlighted the economic burden associated with supporting older family members, identifying expenditures on household necessities as the most substantial direct cost, while cash transfers were reported less frequently [16]. Building on this literature, the present study examined the personal social networks of patients seeking care for chronic diseases in Ghana. Using multilevel analytical approaches, the study sought to identify factors shaping the mobilization of social capital and to document the cumulative burden of support carried by patients' social networks.

Materials and Methods

To examine informal support among individuals living with non-communicable diseases (NCDs), we conducted a personal network survey that captured patients' socioeconomic and health characteristics alongside information on their social relationships and support systems. Unlike conventional "whole-network" approaches, which focus on complete networks within bounded groups, personal network methods center on individuals and the constellation of social ties surrounding them, making this approach well suited to studying patients receiving care for chronic conditions [17–19].

Participants were recruited from three hospitals representing Ghana's major geographic regions: Tamale Teaching Hospital in the Northern Zone, Kintampo North Municipal Hospital in the Middle Zone, and Hohoe Municipal Hospital in the Southern Zone. Approximately 100 patients were targeted at each site. Hospitals were intentionally selected because people seeking care for NCDs frequently encounter barriers to adequate treatment at community-based facilities, increasing the likelihood that individuals with chronic conditions would be present at higher-level hospitals [6].

Data collection was carried out during March and April 2022. Trained research staff approached patients in outpatient waiting areas and invited them to participate. Interviews were conducted after clinical consultations and were administered in either English or an appropriate local language. Eligibility criteria included a prior diagnosis of at least one chronic disease, an age of 50 years or older, and the absence of observable cognitive impairment.

In addition to survey responses, blood pressure was measured three times for each participant, with the average of the final two readings used in analysis. All data were collected electronically using tablet computers and Open Data Kit (ODK) software [20]. Survey data were transferred at the end of each day to a secure server located in Switzerland.

Questionnaire

The survey tool, which is explained in more detail in the Supplementary Material, was adapted from an instrument used in earlier research [21]. The questionnaire began by gathering information on participants' sociodemographic characteristics and their history of chronic conditions. Participants were subsequently asked to name up to six adult individuals who played the most significant roles in their lives. For each person identified, respondents provided details regarding the informal support they received from these members of their personal social networks

The main outcome of interest was the frequency with which each named social contact provided support to the participant. Respondents were asked to report on three categories of support—emotional, informational, and material—offered by their social ties. To ensure clarity, these forms of support were explained to participants as follows:

- **Emotional support:** "How often does [a specific social contact] provide you with emotional help? For example, offering comfort, showing care or appreciation, or engaging in prayer with or on your behalf."
- **Informational support:** "How often does [a specific social contact] give you information or guidance? For example, sharing advice, providing knowledge, or helping you understand instructions from your healthcare provider."
- **Material support:** "How often does [a specific social contact] offer practical or financial assistance? For example, giving money for medical expenses or transportation, helping with household activities, or accompanying you to a health facility."

Analysis

The principal objective of the analysis was to quantify both material and non-material forms of support received by participants, considering assistance provided by individual social ties as well as the total volume of support accumulated at the participant level. For the main analyses, emotional and informational assistance were combined into a single non-material support category. To allow a more detailed exploration, additional analyses examining emotional and informational support separately are presented in the Supplementary Material.

Social support was operationalized using categorical responses on frequency of support provision, which were transformed into a monthly count of person-days of support [21, 22]. Descriptive statistics were used to summarize participant characteristics and participant-level indicators of network composition and support. To examine potential predictors of support, bivariate analyses were conducted. Linear regression models were applied to alter-level variables with standard errors adjusted for clustering at the participant level, while Welch's t-tests were used for comparisons involving participant-level variables.

Although Poisson regression was initially considered for modeling the count of person-days of support exchanged between participants and their social ties, the distribution of the outcome variable exhibited overdispersion. As a result, negative binomial regression models were employed, a choice supported by likelihood ratio testing [23, 24]. As with Poisson models, results from negative binomial regression are expressed as incidence rate ratios. For categorical predictors, these ratios represent the relative rate compared with a reference category, while for continuous predictors they indicate the proportional change in the outcome associated with a one-unit increase in the predictor.

To evaluate the associations between participant-level, tie-level, and network-level characteristics and the volume of support received during the previous month, multilevel negative binomial regression models were estimated. A random intercept was included to account for clustering of social ties within participants. Model development proceeded in a stepwise manner, with separate models estimated for material and non-material support. The modeling sequence involved the sequential inclusion of participant-level random effects, participant characteristics, alter-level variables, and network-level attributes to arrive at the final fully adjusted models.

At the participant level, analyses assessed whether age, mental wellbeing as measured by the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) [25], perceived social support measured by the Multidimensional Scale of Perceived Social Support (MSPSS), limitations in productivity related to chronic illness, and the presence of multiple chronic conditions were associated with support receipt. The WEMWBS is a validated self-administered instrument designed to capture mental wellbeing or psychological flourishing. The shortened version includes seven items reflecting domains such as positive mood, interpersonal functioning, and perceived competence, with responses rated on a five-point Likert scale based on experiences over the preceding two weeks. This scale is widely used in both research and clinical contexts to assess mental wellbeing and monitor changes over time [25]. Similarly, the MSPSS is a validated 12-item self-report measure that assesses perceived social support using a seven-point Likert scale [26–28]. For both instruments, item scores were summed to produce total scores, which were treated as continuous variables in the analyses. Due to high levels of collinearity, however, MSPSS scores were excluded from the final model specifications.

At the level of individual social ties, we examined whether the provision of support differed between family members and non-family contacts, as well as between those residing within the same household and those living elsewhere.

With respect to network-level factors, we hypothesized that participants embedded in larger supportive networks would receive less support from each individual tie, whereas those with a greater proportion of non-family ties would receive higher levels of support. These hypotheses were informed by the possibility of a "bystander effect," whereby individual supporters may reduce their involvement if they believe others are available to assist. In contrast, non-family ties and non-cohabiting contacts may be less susceptible to caregiver fatigue and therefore more capable of providing sustained support.

Data preparation and management were conducted using STATA version 16. Statistical analyses were performed in R version 4.2.1, and network visualizations were generated using Python version 3.9.7 with the NetworkX package.

Ethics Statement

Ethical clearance for this study was obtained from the Institutional Review Board (IRB) of Korle Bu Teaching Hospital (KBTH) (Reference number: KBTH-STC 000147/2021). Before enrollment, prospective participants were provided with a clear explanation of the study objectives and the nature of the information they would be asked to share. Participants were informed of their right to decline blood pressure measurements and to discontinue participation at any stage without penalty. Written informed consent was obtained from all participants prior to data collection. For individuals who were unable to provide written consent, verbal consent was accepted as an alternative.

Results and Discussion

A total of 339 individuals participated in the study and reported on their relationships with 1,371 social contacts. The average age of participants was 62.4 years. Most respondents were married or cohabiting with a partner (65.2%), slightly more than half had attained primary-level education, and fewer than one-quarter (23.6%) reported having formal employment. Hypertension (69%) and diabetes (44.2%) were the most frequently reported chronic conditions. Nearly 60% of participants indicated that their chronic illness limited their ability to carry out routine work or household activities **(Table 1).** Participants identified an average of four social ties each. Among these ties, emotional support was the most commonly reported form of assistance, provided by approximately 80% of contacts. Informational support was reported for about 40% of ties, while roughly half of the identified social contacts offered financial or other forms of material assistance **(Table 1).**

Table 1. Summary of participant-level characteristics by gender, including chi-square p-values (Ghana, March–April 2022).

	Overall	**Men**	**Women**	**p-value**
n	339	166	173	
Age, mean (SD)	62.4 (10.1)	62.3 (9.9)	62.5 (10.3)	0.859
Marital status, n (%)				<0.001***
Married	195 (57.5)	114 (68.7)	81 (46.8)	
Divorced	19 (5.6)	9 (5.4)	10 (5.8)	
Widowed	63 (18.6)	8 (4.8)	55 (31.8)	
Living with partner	26 (7.7)	19 (11.4)	7 (4.0)	
Separated	27 (8.0)	9 (5.4)	18 (10.4)	
Never Married	9 (2.7)	7 (4.2)	2 (1.2)	
Household size, mean (SD)	5.5 (3.6)	5.9 (4.1)	5.1 (2.9)	0.025*

Occupation, n (%)				<0.001***
Caring for home/children	25 (8.7)	3 (2.4)	22 (13.6)	
Public Servant	51 (17.7)	31 (24.6)	20 (12.3)	
Private Formal Sector	17 (5.9)	13 (10.3)	4 (2.5)	
Retired	54 (18.8)	33 (26.2)	21 (13.0)	
Subsistance Farmer	47 (16.3)	23 (18.3)	24 (14.8)	
Self-employed, small business	94 (32.6)	23 (18.3)	71 (43.8)	
Education, n (%)				0.017*
None	106 (36.3)	42 (31.6)	64 (40.3)	
Primary	31 (10.6)	14 (10.5)	17 (10.7)	
Some primary	44 (15.1)	16 (12.0)	28 (17.6)	
Secondary	41 (14.0)	28 (21.1)	13 (8.2)	
Some secondary	34 (11.6)	13 (9.8)	21 (13.2)	
College	36 (12.3)	20 (15.0)	16 (10.1)	
Paid work in past year, n (%)				0.336
No	222 (65.5)	104 (62.7)	118 (68.2)	
Yes	117 (34.5)	62 (37.3)	55 (31.8)	
Current HI, n (%)				0.380
No	57 (16.6)	31 (18.7)	26 (14.5)	
Yes	282 (83.4)	135 (81.3)	147 (85.5)	
Productivity loss due to illness, n (%)				0.533
Completely	93 (27.4)	46 (27.7)	47 (27.2)	
Sometimes	99 (29.2)	44 (26.5)	55 (31.8)	
Never	147 (43.4)	76 (45.8)	71 (41.0)	
Paid for own HI, n (%)				0.002**
I do not know	1 (0.4)	0	1 (0.7)	
No	19 (6.7)	5 (3.7)	14 (9.5)	
Yes, completely	245 (86.9)	128 (94.8)	117 (79.6)	
Yes, partially	17 (6.0)	2 (1.5)	15 (10.2)	
Days of work/productivity lost, mean (SD)	10.4 (13.2)	10.4 (13.4)	10.5 (13.0)	0.954
Perceived health status, n (%)				0.039*
Very good	25 (7.8)	14 (8.8)	11 (6.8)	
Good	151 (47.0)	86 (54.1)	65 (40.1)	
Moderate	110 (34.3)	44 (27.7)	66 (40.7)	
Bad	35 (10.9)	15 (9.4)	20 (12.3)	
Diabetes, n (%)				0.029*

Yes	150 (44.2)	63 (38.0)	87 (50.3)	
No	189 (55.8)	103 (62.0)	86 (49.7)	
Hypertension, n (%)				0.799
Yes	234 (69.0)	113 (68.1)	121 (69.9)	
No	105 (31.0)	53 (31.9)	52 (30.1)	
Epilepsy, n (%)				0.328
Yes	9 (2.7)	6 (3.6)	3 (1.7)	
No	330 (97.3)	160 (96.4)	170 (98.3)	
Other chronic illness, n (%)				0.038*
Yes	36 (10.6)	24 (14.5)	12 (6.9)	
No	303 (89.4)	142 (85.5)	161 (93.1)	
Asthma, n (%)				0.459
Yes	14 (4.1)	5 (3.0)	9 (5.2)	
No	325 (95.9)	161 (97.0)	164 (94.8)	
Diastolic BP, mean (SD)	92.1 (16.5)	91.8 (15.5)	92.5 (17.4)	0.713
Systolic BP, mean (SD)	139.3 (19.6)	139.5 (18.3)	139.1 (20.9)	0.881
Stage II Hypertension, n (%)				0.335
Yes	218 (64.3)	102 (61.4)	116 (67.1)	
Tie weight, mean (SD)	0.7 (0.1)	0.7 (0.1)	0.8 (0.1)	0.016*
Tie count, mean (SD)	3.9 (1.9)	4.0 (1.9)	3.9 (1.9)	0.849
Proportion of women in support network, mean (SD)	0.4 (0.3)	0.4 (0.3)	0.4 (0.3)	0.760
% of alters who provide informational support, mean (SD)	0.4 (0.4)	0.3 (0.4)	0.4 (0.4)	0.076
% of alters who provide emotional support, mean (SD)	0.8 (0.3)	0.8 (0.3)	0.9 (0.3)	0.381
% of alters who provide material support, mean (SD)	0.5 (0.4)	0.4 (0.4)	0.5 (0.4)	0.010*

*** = $p < 0.001$, ** = $p < 0.01$,* = $p < 0.05$.

Preliminary bivariate analyses indicated that men received lower levels of both material support (8.9 person-days) and non-material support (6.7 person-days) compared with women, who received 9.9 and 12.7 person-days of non-material and material support, respectively (**Figure 1**). As illustrated in **Figure 1**, these gender differences were evident in both the share of social ties providing support and the frequency with which support was received. Nevertheless, after adjusting for relevant covariates in multivariate mixed-effects negative binomial regression models, no statistically significant gender differences in the amount of support received were observed **(Tables 2 and 3).**

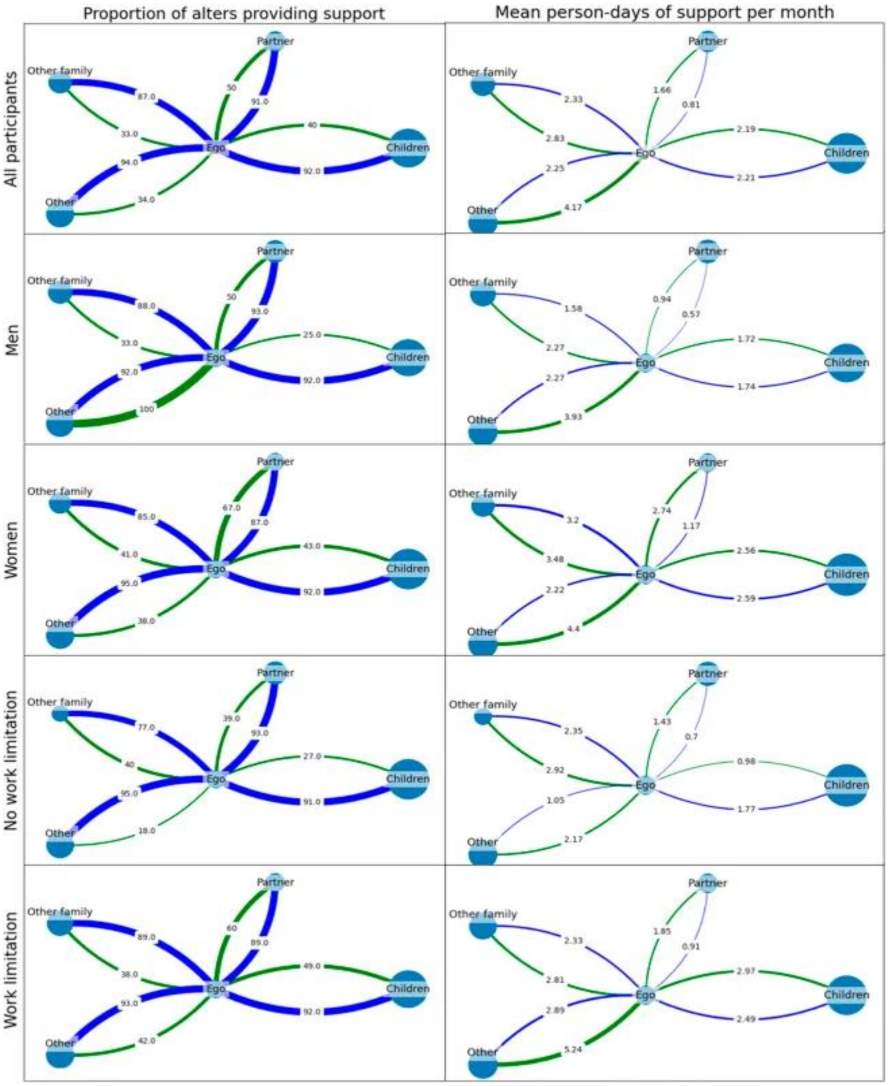

Figure 1. Mean cluster visualizations illustrating participants' receipt of support across four categories of social ties. Node size reflects the relative frequency of each type of relationship within the social network. The left panels show the proportion of ties providing non-material (blue) and material (green) support, while the right panels display the average monthly number of support instances contributed by each tie category (Ghana, March–April 2022).

Table 2. Multilevel negative binomial regression analyses predicting the number of person-days of informal social support provided by alters to egos during the previous month (Level 2: N = 339; Level 1: N = 1,371) (Ghana, March–April 2022).

Predictor	Non-Material Support IRR (95% CI)	p-value	Material Support IRR (95% CI)	p-value	Overall Support IRR (95% CI)	p-value
(Intercept)	3.22*** (2.06–5.05)	<0.001	3.56*** (1.99–6.38)	<0.001	5.63*** (3.53–8.98)	<0.001
Gender: Men (ref: Women)	0.86 (0.68–1.08)	0.195	0.90 (0.65–1.24)	0.510	0.90 (0.70–1.16)	0.426

Age (per 10-year increase)	0.81*** (0.71–0.91)	<0.001	0.88 (0.74–1.03)	0.119	0.80** (0.70–0.92)	0.001
Wellbeing score (higher = better)	0.80*** (0.71–0.91)	<0.001	1.02 (0.87–1.20)	0.765	0.86* (0.75–0.98)	0.026
Multimorbidity (≥2 NCDs vs. no NCD)	0.90 (0.68–1.19)	0.455	0.92 (0.62–1.36)	0.662	0.89 (0.65–1.23)	0.487
Relationship to alter: Partner (ref: child)	0.48** (0.29–0.80)	0.004	1.54* (1.03–2.29)	0.034	1.06 (0.76–1.47)	0.728
Ever missed work due to NCD: Yes	1.90*** (1.45–2.48)	<0.001	3.46*** (2.39–5.02)	<0.001	2.63*** (1.96–3.53)	<0.001
Relationship to alter: Other family	0.85 (0.65–1.10)	0.211	0.56*** (0.40–0.78)	0.001	0.78* (0.62–0.99)	0.042
Alter same age or older than ego: Yes	0.84 (0.66–1.07)	0.156	1.05 (0.78–1.41)	0.761	0.90 (0.73–1.11)	0.321
Living with partner: Yes	0.96 (0.74–1.25)	0.788	0.67* (0.47–0.96)	0.028	0.81 (0.61–1.08)	0.158
Only hypertension (vs. no NCD)	0.94 (0.70–1.26)	0.687	0.68 (0.45–1.01)	0.058	0.76 (0.55–1.05)	0.097
Relationship to alter: Non-family/other	0.96 (0.74–1.24)	0.740	0.56*** (0.41–0.75)	<0.001	0.84 (0.67–1.04)	0.108
Alter lives with ego: Yes	0.17*** (0.14–0.22)	<0.001	0.26*** (0.20–0.34)	<0.001	0.23*** (0.19–0.28)	<0.001
Alter gender: Men (ref: Women)	1.18 (0.98–1.42)	0.074	1.49*** (1.21–1.85)	<0.001	1.43*** (1.22–1.68)	<0.001
Total number of named social ties	0.89** (0.82–0.96)	0.004	0.86** (0.77–0.95)	0.004	0.89** (0.82–0.96)	0.004
Proportion of “other” (non-family) ties in network	0.97 (0.88–1.08)	0.620	1.18* (1.03–1.35)	0.019	1.08 (0.97–1.21)	0.153

***p < 0.001 **p < 0.01 *p < 0.05.

Table 3. Results from negative binomial models examining variation in the overall number of person-days of informal support accumulated by participants from their entire social network in the previous month (N = 339), based on data collected in Ghana in March–April 2022.

Predictor	**Material Support IRR (95% CI)**	**p-value**	**Non-Material Support IRR (95% CI)**	**p-value**
Age (per year increase)	0.99 (0.98–1.00)	0.109	0.98* (0.97–1.00)	0.013
(Intercept)	21.00*** (5.44–81.05)	<0.001	35.18*** (10.23–120.96)	<0.001
Living with partner: Yes	0.70* (0.51–0.97)	0.033	0.86 (0.64–1.16)	0.323
Gender: Men (ref: Women)	0.80 (0.59–1.07)	0.138	0.88 (0.68–1.15)	0.354
Wellbeing score (higher = better)	0.95*** (0.93–0.98)	0.001	0.93*** (0.90–0.95)	<0.001
Diabetes diagnosis: Yes	1.11 (0.69–1.80)	0.672	1.21 (0.78–1.88)	0.383

Hypertension diagnosis: Yes	0.87 (0.54–1.39)	0.557	0.88 (0.57–1.36)	0.570
Proportion of non-family (“other”) ties in network	1.78* (1.07–2.96)	0.027	1.37 (0.83–2.25)	0.213
Total number of named social ties	1.14** (1.05–1.24)	0.002	1.20*** (1.11–1.29)	<0.001
Ever missed work due to NCD: Yes	2.59*** (1.80–3.73)	<0.001	1.90*** (1.36–2.65)	<0.001
Interaction: Hypertension × Diabetes	0.99 (0.54–1.82)	0.973	0.89 (0.51–1.57)	0.696
Proportion of women in network	1.18 (0.73–1.92)	0.507	0.97 (0.61–1.53)	0.880

***$p < 0.001$ **$p < 0.01$ *$p < 0.05$.

The amount of non-material support provided varied according to several individual- and network-level characteristics. Key predictors included patients’ age, mental wellbeing (WEMWBS), productivity losses associated with chronic illness, and the size of their social networks. Characteristics of social ties themselves—specifically the nature of the relationship, alters’ gender, and residential proximity—were also strongly associated with levels of non-material support (**Table 2**). With respect to household composition and gender dynamics, the regression models showed that partners and co-resident ties contributed fewer instances of support, whereas male alters generally provided more support than female alters **(Table 2).**

Patterns in the data further indicated that support was more frequently directed toward egos who were younger, experienced work-related limitations due to illness, and reported lower levels of wellbeing, while individuals embedded in larger social networks tended to receive less support overall (**Table 2, Figure 1**). As illustrated in **Figure 1**, disparities in support between those with and without NCD-related work limitations were particularly pronounced, with “other” social ties offering markedly greater support to individuals facing work constraints. Taken together, these findings suggest that social ties tend to concentrate support among patients with higher levels of need. Notably, partners and household members emerged as the least supportive ties, a pattern consistent with the possibility of compassion fatigue.

When examining support aggregated across ties, mental wellbeing, illness-related productivity loss, and the total number of social ties were again central predictors of the amount of non-material support received (**Table 3**). Similar relationships were observed for material support, although additional factors—such as cohabitation with a partner and the share of non-family members within the network—also influenced overall levels of assistance **(Table 3).**

Material support followed a partly distinct pattern. Patients’ marital status, productivity losses due to chronic illness, the number of non-kin ties, and overall network size were all significant predictors, alongside tie-level attributes such as relationship type, gender, and place of residence **(Table 2).** As with non-material assistance, alters directed greater material support toward individuals whose illness restricted their ability to work. In contrast, married egos and those with larger social networks received substantially less support. Although the proportion of non-family ties was unrelated to non-material support, individuals with more non-family connections received significantly higher levels of material assistance than those whose networks were dominated by family members. Nonetheless, non-family and “other” family ties contributed less support than children or partners **(Table 3),** underscoring that both network composition and the characteristics of specific relationships shape how social capital is mobilized.

This study explored the personal social networks of patients receiving care for non-communicable diseases (NCDs) in Ghana to identify the mechanisms underlying the mobilization of social capital. Our findings demonstrate that support mobilization is shaped by factors operating at the individual, network, and relational levels. Together, these factors explain substantial variation in both the provision and receipt of informal social support and reveal several unexpected patterns. Notably, contrary to our initial hypotheses, older patients and those reporting higher levels of mental wellbeing did not receive greater levels of support, despite the increased care needs typically associated with older age and the well-established protective role of social support for mental health [29].

The association between mental wellbeing and social support is likely multifaceted, involving several potential causal pathways. While existing evidence suggests that social support can enhance mental wellbeing [29], it is also plausible that individuals with higher wellbeing are perceived by others as less in need of assistance. These competing explanations point to the possibility of distinct patient typologies, which warrant further investigation. Longitudinal research with larger samples would be particularly valuable in disentangling these dynamics, as it would allow for the assessment of temporal ordering and reciprocal relationships between mental wellbeing and social support over time.

Our results further indicate that although older patients tend to have greater support needs, they receive less assistance from their social networks. This pattern may reflect caregiver fatigue or burnout, as well as the gradual contraction of social networks with age [30, 31]. Evidence consistent with compassion fatigue is reinforced by our finding that co-resident alters provided significantly less material and non-material support, and that partners offered less non-material support than other categories of social ties **(Table 2).**

Among all predictors examined, the most influential factor—with the largest effect size—was whether patients' chronic illness had ever restricted their ability to work or carry out routine household activities. Reduced work capacity represents a visible and tangible consequence of illness, and the increased support directed toward these patients may reflect need-based allocation of assistance or the reorganization of household and family resources in response to diminished labor productivity.

In contrast to prior studies conducted in Ghana and elsewhere in sub-Saharan Africa [16, 32], care recipients in our sample more frequently identified men rather than women as providers of support. Earlier research has often examined caregiving from the perspective of caregivers themselves, which may partly explain this discrepancy. Gender norms and expectations—such as the assumption that women routinely provide care and manage household responsibilities—may lead to the underrecognition or underreporting of women's caregiving contributions by care recipients [33]. To achieve a more comprehensive understanding of informal caregiving dynamics, future studies should incorporate the perspectives of both caregivers and recipients.

Although family members constituted the majority of reported social ties, non-family ties were described as providing more support during the one-month recall period. Moreover, a higher proportion of non-family members within an individual's network was associated with greater overall levels of support. At the individual level, non-family ties may be more salient sources of assistance over a short recall window, particularly if they are mobilized less routinely than family members.

These findings align with previous scholarship on the role of "weaker" non-family ties in generating bridging social capital, which expands access to diverse resources and facilitates the exchange of both material and non-material support [34–36]. By connecting patients to new or less frequently tapped resources, bridging ties may help mitigate the risk of resource depletion. Additionally, because such ties are typically less emotionally intensive than close family relationships, they may be less susceptible to compassion fatigue.

Several limitations should be acknowledged when interpreting these findings. First, the study focuses exclusively on individuals actively seeking healthcare and does not include a comparison group drawn from the broader population of people living with NCDs. Constructing a representative household-based sample poses substantial challenges, particularly given the low levels of hypertension awareness in Ghana, which have been estimated at approximately 20% [37–39]. Second, our reliance on patient self-reports may not fully capture the extent of social support received. Assistance provided by household members may be perceived as routine resource sharing rather than explicit support, leading to underreporting. Conversely, support received from non-household members may be more salient and therefore more readily recalled. To develop a more complete understanding of informal care for NCD patients, future research should adopt mixed-methods designs that engage both support providers and recipients. Such approaches would enable deeper exploration of the motivations, determinants, and functions of support, while also addressing potential discrepancies in how support is perceived and reported.

Conclusion

Patients seeking care for NCDs reported receiving assistance from a diverse array of caregivers, and this study identified multiple factors that shape the level of support mobilized. As populations across sub-Saharan

Africa continue to age and the prevalence of chronic conditions rises, the demand for informal care may soon exceed the capacity of younger generations to provide it. Policymakers should therefore prioritize strategies that enhance collective resource pooling and promote inclusive systems of old-age security and social health protection, thereby easing the financial strain associated with aging and chronic illness for both caregivers and care recipients. Efforts to expand social protection for older adults should be undertaken in ways that respect established traditions of intergenerational support, aligning social security initiatives and poverty reduction policies with national values and societal expectations.

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