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ASSOCIATIONS BETWEEN FINANCIAL LITERACY AND FINANCIAL DISTRESS AMONG HEALTHCARE PROFESSIONALS: EVIDENCE FROM ONCOLOGY HOSPITAL NURSES

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Abstract

Individual financial health significantly relates to overall well-being and professional performance, representing a critical aspect of human capital. Financial difficulties are associated with financial distress, particularly among professionals in demanding and stressful work environments within key economic sectors like healthcare. Strong financial literacy is crucial for effective personal financial management and achieving financial goals, which may be associated with reduced financial distress and potentially improved performance at both individual and, arguably, organizational levels by potentially mitigating the negative impacts of financial stress on the workforce. This study aimed to examine the relationship between financial literacy and financial distress among professionals working in a challenging field, specifically oncology hospital nurses. Nurses at an oncology hospital completed scales designed to measure financial literacy and financial distress levels, along with sociodemographic information. Path analysis was performed on the obtained data. The analysis results indicated a statistically significant negative association between financial literacy and financial distress. Furthermore, education level and work experience were positively associated with financial literacy. These findings suggest that enhancing financial literacy among healthcare professionals may be a valuable strategy to help mitigate financial distress and potentially improve their overall well-being and job performance, potentially contributing to greater efficiency and stability within the healthcare sector. Promoting financial literacy, particularly among healthcare professionals, may contribute to better financial management and indirectly to organizational stability. In this context, the importance of leadership roles in supporting financial well-being is highlighted.

JEL classification: G40, G41, G53

Keywords: Behavioral Finance, Financial Literacy, Financial Distress, Healthcare Professionals, Workforce Financial Well-Being.

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Introduction

According to its definition, stress is a non-specific physical and emotional state that a person experiences in response to an internal or external threat or change (stressor) (Selye, 1976; 1974). Depending on the circumstances and how they are perceived, stress may have either positive responses (eustress) or negative responses (distress) (Murray & Huelskoetter, 1983). Distress can manifest in various domains of life, arising from physical illness, interpersonal difficulties, occupational demands, or financial challenges (Schneiderman et al., 2005; Viertiö et al., 2021).

Among the various forms of distress, financial distress has emerged as a critical concern in modern societies due to its wide-ranging associations with personal and professional life. It is associated with physical health, mental well-being, family relationships, and job performance.

In healthcare, where job demands and emotional burdens are already high, financial challenges may be associated with heightened stress levels. This is particularly relevant for oncology nurses, who face the dual burden of emotional strain from patient care and potential economic pressures in their personal lives.

In such settings, the interaction between occupational stressors and financial challenges can be especially detrimental, potentially being associated with reduced workforce stability and the quality of care. This underscores the importance of identifying factors - such as financial literacy - that may be related to lower financial distress. Financial literacy, broadly defined as the knowledge and skills needed to make informed and effective financial decisions, has been widely recognized as a critical life skill associated with not only individual well-being but also broader economic and social outcomes (Lusardi and Mitchell, 2023; OECD, 2023).

While research in other occupational groups suggests that higher financial literacy is associated with lower financial distress, little is known about this relationship among oncology nurses. This professional group plays a pivotal role in patient care, yet their financial well-being remains an underexplored dimension of workforce health.

Therefore, the present study examines the relationship between financial literacy and financial distress among oncology hospital nurses. By focusing on this high-stress healthcare context, the research seeks to contribute to the literature on behavioral finance, occupational health, and workforce well-being, while offering practical insights for management strategies that support both individual and organizational outcomes.

Background

Understanding the antecedents and correlates of financial well-being and distress is a critical area within applied economics, behavioral finance, and financial management. This study investigates these dynamics within a specific professional group facing unique stressors: oncology hospital nurses. Examining financial literacy and distress in this population provides insights into how financial factors relate to occupational demands. This may inform targeted initiatives with potential economic and workforce-productivity implications. The hypothesis of the research was determined as follows:

H_1: Financial literacy is negatively associated with financial distress in oncology hospital nurses.

Theoretical basis of the hypothesis

Healthcare professionals, especially nurses who directly care for oncology patients, are a professional group that experiences high levels of stress and emotional burnout. This situation can negatively affect the personal and professional lives of nurses and may be associated with financial difficulties. As hypothesized in this study, oncology nurses' financial literacy levels are expected to be negatively associated with their likelihood of experiencing financial distress.

Distress can encompass a variety of negative emotional states, such as sadness and anxiety, and is associated with how an individual interacts with their environment through various biological, cognitive, and social processes (Matthews, 2016). Based on individuals' negative interpretation of the environment and the world associated with stressors, distress levels may be high and manifest in various areas of life. Alienation, authoritarianism, and inequality are noted as major correlates of distress, which may primarily manifest as weariness, anxiety, and depression. An individual's social status, gender, marital status, and adverse life events are associated with the social pattern of individual distress (Mirowsky & Ross, 1986).

Financial literacy covers the knowledge and skills necessary for individuals to understand financial concepts, make informed financial decisions, and achieve their financial goals. It is increasingly recognized as a crucial component of human capital and a key correlate of individual financial health, with implications for personal economic security and aggregate economic stability. It is often emphasized in the literature that financial literacy has positive associations with individuals' life satisfaction, welfare level, and general health. Researchers such as Lusardi and Mitchell (2007) report that financial literacy is associated with lower financial stress and anxiety and is linked to more informed finan-

cial decision-making. From an economic perspective, improved financial literacy may be associated with more efficient allocation of personal financial resources and better navigation of financial markets and products. decision-making. From an economic perspective, improved financial literacy may be associated with more efficient allocation of personal financial resources and better navigation of financial markets and products. From an economic perspective, improved financial literacy can lead to more efficient allocation of personal financial resources and better navigation of financial markets and products.

Financial distress is commonly defined as the financial difficulties experienced by individuals due to an imbalance between their income and expenses. This micro-level economic phenomenon, often studied in household finance, is associated with significant consequences for individuals and, when prevalent across a workforce, may be associated with lower labor productivity and economic output. The Financial Therapy Association (2021) notes that financial distress is associated with poorer physical and mental health, strained relationships, and lower quality of life.

In the broader context of individual and household economic well-being, financial factors represent a significant and increasingly recognized source of stress and distress. Individuals may experience financial hardship while trying to satisfy their basic needs and maintain a certain standard of living. From this perspective, financial distress is often linked to underlying economic instability. Financial well-being is defined as a combination of material and psychological factors such as feeling secure in one's financial situation, meeting needs, being satisfied with income, and improving living standards. In contrast, financial distress refers to the absence of these factors (Taft et al., 2013). According to Prawitz et al. (2006), financial distress is characterized by an individual's negative perceptions of their financial circumstances and their negative responses to them. Research in this area is crucial for informing efforts to reduce the detrimental economic and social correlates of financial distress. These associations can extend beyond personal health and may be linked to impaired professional performance, potentially leading to reduced productivity and increased absenteeism, and, in aggregate, to economic productivity and stability within specific sectors or the broader economy.

Healthcare workers and financial challenges

Healthcare workers often face factors such as long working hours, high workloads, and emotional burnout, which may limit nurses' ability to devote sufficient time to personal financial planning and be associated with financial difficulties. Understanding the financial challenges faced by this professional group is economically important due to their critical role in the healthcare sector, a major component of national economies. Manager quality and employee engagement are linked to performance and profitability (Buckingham & Coffman, 1999). In parallel, employees' personal financial difficulties have been associated with lower job satisfaction, reduced productivity, and higher absenteeism (Garman et al., 1996; Kim & Garman, 2003; Prawitz et al., 2006). This link between financial well-being and job performance has direct implications for organizational efficiency and profitability within the healthcare industry. There are many academic studies documenting that healthcare professionals, especially oncology nurses, experience high levels of stress and emotional burnout. Research on the various causes and consequences of this situation helps to better understand the difficulties experienced by nurses. The study by Maslach and Jackson (1981) provided an early scientific examination of the concept and measurement of burnout and formed the basis for many subsequent studies on healthcare professionals. Aiken et al. (2002) reported that insufficient staffing was associated with higher nurse workload and burnout. Oncology nurses play an important role, impacting the lives of their patients. However, this role can subject them to high levels of stress and emotional exhaustion, which may be associated with adverse effects on nurses' health, job performance, and quality of patient care. Therefore, various strategies should be developed to support and protect oncology nurses. Addressing financial challenges should be considered part of comprehensive strategies to support healthcare professionals, given the economic costs associated with stress and burnout in this sector.

Evaluating hypothesis and theoretical background together

Based on the theoretical underpinnings of financial literacy, distress, and the specific context of healthcare professionals, our hypothesis posits a significant relationship between these factors, consistent with theories of human capital and financial behavior. The hypothesis of this study is based on the theoretical framework presented above. Individuals with a high level of financial literacy are expected to make more conscious decisions on financial matters, manage their budgets better, and achieve their financial goals. This may be associated with a lower likelihood of oncology nurses experiencing financial distress. Nurses with low financial literacy levels may experience more difficulties in financial matters, and this may be associated with a higher likelihood of financial distress. The study hypothesis was stated as "Financial literacy is negatively associated with financial distress in oncology hospital nurses." This hypothesis is supported by research on the positive associations of financial literacy with indi-

individuals' financial health, as well as the specific financial challenges faced by healthcare professionals. The findings of this study may highlight the importance of interventions to increase nurses' financial literacy levels. Financial literacy training may help nurses better understand their personal financial situation, make more informed financial decisions, and reduce the risk of financial distress. From an applied finance perspective, this study investigates how a key financial capability (literacy) relates to a negative financial outcome (distress) within a vital professional group. The findings have potential implications for workforce stability and productivity, which are relevant to business and economic considerations.

Financial literacy and financial distress relation

Prior research in behavioral finance and household economics has examined the relationship between financial literacy and financial distress across diverse populations, generally identifying financial literacy as a key correlate of financial well-being. Many studies report an inverse association between financial literacy and financial distress. For example, McCarthy (2011) examined the United Kingdom and Ireland and reported that age, income, and education were related to the likelihood of experiencing financial distress, while higher financial literacy - and especially behavioral traits - was associated with lower financial distress. In Malaysia, Idris et al. (2013) found moderate levels of both financial literacy and financial distress, with participants who had higher financial literacy reporting lower financial distress. Nguyen and Scott (2017) similarly found that higher financial literacy was associated with a lower likelihood of financial hardship after considering personal financial behavior and knowledge. In Ghana, Karakara et al. (2022) observed that financially literate individuals were about 2.4% less likely to experience financial distress. Among university students in Indonesia, Afif and Sulhan (2022) reported a negative and significant association between financial literacy and financial distress. A study of nurses in the Philippines (Gerzon & Lopena, 2023) examined financial literacy and financial well-being (conceptualized as the opposite of financial distress) and reported a positive association; only monthly income was associated with financial literacy, while no significant relationships were found between other demographic characteristics and financial well-being. During the COVID-19 period, Maidani et al. (2023) reported a positive correlation between financial literacy and financial distress among Generation-Y participants, and Awallia and Dewi (2019) likewise found a positive relationship among young adults in Bandung, Indonesia.

Taken together, the literature predominantly points to an inverse relationship between financial literacy and financial distress, while a minority of studies report positive or mixed associations—underscoring the value of examining this relationship in specific professional contexts such as oncology nursing. adults in Bandung, Indonesia.

Stress, stress factors, financial issues and finance-based competencies in nurses

Stress levels in oncology nurses are high. The factors that cause stress are diverse. Erami and Taghadosi (2023) examined the factors that contribute to the grief experienced by oncology nurses while caring for cancer patients. The results of the study indicate that these factors include witnessing tragic patient losses, being in a depressing workplace, being aware of the high cost of cancer, and feeling powerless within the healthcare system. The results of the investigation by Soheili et al. (2021) on the stresses that oncology nurses perceive at work include the following: a mismatch between nurses' skills and job demands, and psychological competencies that may also be related to work-related stress. Accordingly, institutional arrangements that provide both financial and non-financial support to oncology nurses are recommended. A framework that safeguards nurses' health and helps address staffing shortages within organizations is also warranted. Ko (2016) identified workload and patient deaths as among the most stressful factors in a study examining the stress levels and stress-producing factors of nurses working in oncology outpatient units and their work-related stress coping behaviors. Financial factors are frequently reported as salient stressors among oncology nurses. In several studies, financial difficulties rank among the top stressors, alongside job security, stressful work environments, and spillover into personal life. These findings were also shared by Haghpanah et al. (2017), who examined the most significant factors affecting the satisfaction and stress levels of nurses working in the oncology ward. Together, this evidence highlights oncology-specific financial stressors and underscores the relevance of examining financial literacy and financial distress in this context.

Some studies in the literature suggest that finance-related competencies such as financial knowledge and financial management skills are important for nurses. Raftery et al. (2022) conducted a study on business intelligence for nurses and its scope in which 17 studies from the literature were systematically examined and meta-analyses were conducted. The research findings indicate that the majority of the 17 studies reported the importance of business intelligence, and seven of the articles specifically addressed the field of financial management. Improvements in business intelligence acquisition were also highlighted, along with the role that training interventions in business skills play. Possi-

Possible curricular prospects include finance, strategy, performance, human resources, and broader business intelligence. The study by Bayram et al. (2022), which looks at financial competencies and research activity in the field of nursing, provides recommendations to support clinical nurse training initiatives. These recommendations aim to enhance nurses' capacity to contribute to, understand, and manage financial issues. They also emphasize training to strengthen the financial competencies of nurses in managerial roles. Aziz et al. (2021) examined the factors affecting financial well-being among nurses, including the relationship between financial satisfaction, financial behavior, and financial skill and financial well-being. This study found significant associations between financial satisfaction/behavior and financial well-being, whereas financial skills showed no significant association. This suggests that possessing financial skills does not necessarily translate into effective financial management behavior. According to Rishel (2014), oncology nurses should be aware of the health care industry and the financial implications of the programs, treatments, and services offered. Rishel emphasizes the importance of using financial data in oncology nursing, including the ability to accurately evaluate financial data and use it to support requests to senior managers when making care decisions for cancer patients and their families. Overall, the effectiveness of financial management in cancer care appears to be associated with multiple factors, including staff competencies and data quality. This body of literature points to a growing recognition of the importance of finance-related knowledge and skills for healthcare professionals, linking individual competencies to broader financial and operational outcomes within the healthcare sector.

Methodology

This study employed a quantitative research design to investigate the hypothesized association between financial literacy and financial distress within a specific professional cohort. The methodology was structured to collect empirical data from a defined population sample and to analyze associations using appropriate statistical techniques (including path analysis), consistent with established practices in quantitative social sciences and applied finance. The approach aligns with empirical research methodologies commonly utilized in applied economics and finance to examine the determinants of financial outcomes.

A total of 230 nurses who agreed to participate in the research and worked at Dr. Abdurrahman Yurtaslan Ankara Oncology Hospital completed the survey. Study instruments included sociodemographic items and scales assessing basic financial literacy and financial distress. Participants received either printed questionnaires or a secure online survey link and returned completed forms for analysis. Hospital staffing records indicated approximately 500 nurses were actively employed at the time of data collection. The minimum sample size to represent this population with approximately 95% confidence (5% margin of error) was estimated at 218 participants. For the study, ethics approval was obtained from the Non-invasive Clinical Research Ethics Committee of Dr. Abdurrahman Yurtaslan Ankara Oncology Training and Research Hospital (14 September 2023; code 2023-09/88).

The study was carried out between 1–30 December 2023 at Dr. Abdurrahman Yurtaslan Ankara Oncology Training and Research Hospital. Inclusion criteria were: being a nurse employed at this oncology hospital and agreeing to participate in the study. Participants were excluded if they did not wish to participate or withdrew after initially agreeing. Questionnaires were distributed either as printed copies during shift hours or as online survey forms. Participation was voluntary and anonymous. Of the 265 questionnaires distributed, 230 were completed in full and included in the analysis, corresponding to a response rate of 86.79%.

Measurement instruments

In this study, we used two validated instruments—the Basic Financial Literacy Survey and the Financial Distress Scale - to quantify the core constructs. Scale scoring followed published guidelines, and internal consistency for the present sample is reported in the Results.

The questions measuring basic financial literacy in Van Rooij et al. (2011) were used. This five-item set assesses participants' basic financial literacy, covering interest rates and compounding, inflation, discounting, and nominal versus real values. Each correct response receives one point (total range 0–5). Turkish versions were taken from Şahin and Barış (2017), and a Turkish validity–reliability study was reported by Ceyhan and Tosun (2023). In the present sample, Cronbach's α was 0.69, which is typical for brief, few-item knowledge tests (Gignac & Ooi, 2022; Kılıç, 2016).

The Financial Distress/Financial Well-Being scale developed by Prawitz et al. (2006) was used. This eight-item instrument measures difficulties in money management on a 10-point Likert-type scale, yielding total scores from 8 to 80 (higher scores indicate greater financial distress). The Turkish validity and reliability study was conducted by Aydıner Boylu (2014). Cronbach's α in this study was 0.84.

First, the study's descriptive statistics on financial literacy and financial distress scores were obtained; second, reliability analyses of the financial literacy questions and financial distress scale were conducted; and third, the relationship between financial literacy and sociodemographic traits was examined using bivariate

correlations. Finally, path analysis of the specified model was conducted. This model-based statistical technique, commonly used in quantitative research including economic and financial studies, examines direct and indirect associations among variables along hypothesized directional paths. Path analysis, a subset of structural equation modeling, assesses patterns of relationships and decomposes correlations via specified directional paths (Columbia, 2025).

Results

This section summarizes the empirical findings, including overall descriptive statistics, group comparisons (Table 1, Panel A–B), and the results of correlation and path analyses examining the hypothesized associations.

Descriptive statistics for financial literacy and financial distress scores

Overall (N = 230), financial literacy scores ranged from 0 to 5 (mean = 3.20, SE = 0.08, SD = 1.23, variance = 1.51). Financial distress scores ranged from 24 to 75 (mean = 51.77, SE = 0.74, SD = 11.21, variance = 125.60), indicating greater variability in financial distress than in financial literacy.

Regarding sociodemographic characteristics (see Table 1), most nurses were women (84.78%), married (57.39%), aged 18 - 30 years (47.39%), and university graduates (80.00%). Additionally, 46.52% had ≤5 years of total work experience, and 56.96% had ≤5 years of oncology experience.

Associations of sociodemographic factors with financial literacy and financial distress

Financial literacy was significantly higher among married nurses rather than single nurses (3.34 vs 3.01; F = 4.14, p = 0.04) and increased with education (associate 2.58, bachelor's 3.26, graduate 3.41; F = 3.62, p = 0.03), as summarised in Table 1, Panel A. By contrast, financial distress did not differ across gender, age, marital status, education level, total work experience, or oncology work experience (all p ≥ 0.35), as shown in Table 1, Panel B.

Table 1: Financial literacy differentiation with sociodemographic characteristics
Panel A: Financial Literacy - Values are Mean (SD) with 95% CIs. One-way ANOVA for group differences

Variable		N	Mean	S.D.	95% CI (LB–UB)
Gender	Female	195	3.18	1.25	3.00 - 3.36
	Male	35	3.31	1.13	2.93 - 3.70
	ANOVA: F = 0.36, p = 0.55				
Age	18-30	109	3.02	1.35	2.76 - 3.28
	31-40	35	3.26	1.15	2.86 - 3.65
	41-50	76	3.39	1.08	3.15 - 3.64
	51+	10	3.50	0.85	2.89 - 4.11
	ANOVA: F = 1.67, p = 0.17				
Marital Status	Single	98	3.01	1.26	2.76 - 3.26
	Married	132	3.34	1.18	3.14 - 3.54
	ANOVA: F = 4.14, p = 0.04**				
Education Level	Associate	24	2.58	1.10	2.12 - 3.05
	Bachelor's	184	3.26	1.26	3.07 - 3.44
	Graduate Degree	22	3.41	0.85	3.03 - 3.79
	ANOVA: F = 3.62, p = 0.03**				
Work experience	0-5 years	107	3.04	1.37	2.77 - 3.30
	6-10 years	14	3.07	0.83	2.59 - 3.55
	11-15 years	13	3.08	1.26	2.32 - 3.84
	16-21 years	26	3.19	1.23	2.69 - 3.69
	21+ years	70	3.50	1.00	3.26 - 3.74
	ANOVA: F = 1.60, p = 0.17				
Oncology work experience	0-5 years	131	3.08	1.31	2.86 - 3.31
	6-10 years	31	3.26	1.18	2.82 - 3.69
	11-15 years	28	3.43	1.14	2.99 - 3.87
	16-21 years	20	3.35	1.04	2.86 - 3.84
	21+ years	20	3.40	1.05	2.91 - 3.89
	ANOVA: F = 0.76, p = 0.55				

Panel B: Financial Distress - Values are Mean (SD) with 95% CIs. One-way ANOVA for group differences

Variable		N	Mean	S.D.	95% CI (LB–UB)
Gender	Female	195	3.18	1.25	3.00 - 3.36
	Male	35	3.31	1.13	2.93 - 3.70
	ANOVA: F = 0.72, p = 0.40				
Age	18-30	109	3.02	1.35	2.76 - 3.28
	31-40	35	3.26	1.15	2.86 - 3.65
	41-50	76	3.39	1.08	3.15 - 3.64
	51+	10	3.50	0.85	2.89 - 4.11
	ANOVA: F = 1.09, p = 0.35				
Marital Status	Single	98	52.49	11.06	50.27 - 54.71
	Married	132	51.23	11.33	49.28 - 53.19
	ANOVA: F = 0.70, p = 0.40				
Education Level	Associate	24	53.92	9.77	49.79 - 58.04
	Bachelor's	184	51.57	11.41	49.91 - 53.23
	Graduate Degree	22	51.09	11.18	46.13 - 56.05
	ANOVA: F = 0.51, p = 0.60				
Work experience	0-5 years	107	52.81	11.16	50.67 - 54.95
	6-10 years	14	49.50	10.59	43.39 - 55.61
	11-15 years	13	53.15	10.05	47.08 - 59.23
	16-21 years	26	52.23	11.82	47.46 - 57.00
	21+ years	70	50.20	11.42	47.48 - 52.92
	ANOVA: F = 0.78, p = 0.54				
Oncology work experience	0-5 years	131	52.38	11.17	50.45 - 54.31
	6-10 years	31	50.48	12.01	46.08 - 54.89
	11-15 years	28	51.21	11.95	46.58 - 55.85
	16-21 years	20	50.60	11.24	45.34 - 55.86
	21+ years	20	51.70	9.76	47.13 - 56.27
	ANOVA: F = 0.27, p = 0.90				

Note: Values are Mean (SD); Lower Bound (LB) and Upper Bound (UB) are 95% CIs for the mean. One-way ANOVA reports F and p for group differences. Financial Literacy (0-5; higher = greater), Financial Distress (8-80; higher = greater) Significance: * p < .05; ** p < .01; *** p < .001

Source: Author's own work.

Correlation analysis

Table 2 displays Pearson correlations among the study variables. Financial literacy was negatively correlated with financial distress (r = −0.30, p < 0.01). Financial literacy also showed small positive correlations with age (r = 0.15, p = 0.03), education level (r = 0.15, p = 0.02), and total work experience (r = 0.16, p = 0.02), but not with oncology work experience (r = 0.10, p = 0.12). Financial distress was not significantly correlated with any sociodemographic variable. These bivariate patterns informed the subsequent path analysis. Consistent with our a priori, parsimonious model, we did not carry every statistically significant bivariate correlation forward into the SEM; only theoretically motivated paths (education and work experience → financial literacy; financial literacy → financial distress) were specified.

Table 2: Correlation Analysis of Financial Literacy and Financial Distress Scores

Variable		Financial Literacy	Financial Distress	Age	Education Level	Work Experience	Oncological Work Experience
Financial Literacy	Pearson Correlation	1.00	-0.30	0.15	0.15	0.16	0.10
	Sig. (2-tailed)		0.00*	0.03**	0.02**	0.02**	0.12
	N	230.00	230.00	230.00	230.00	230.00	230.00
Financial Distress	Pearson Correlation	-0.30	1.00	-0.09	-0.06	-0.09	-0.04
	Sig. (2-tailed)	0.00*		0.20	0.38	0.19	0.52
	N	230.00	230.00	230.00	230.00	230.00	230.00

* p <0.01. ** p < 0.05.

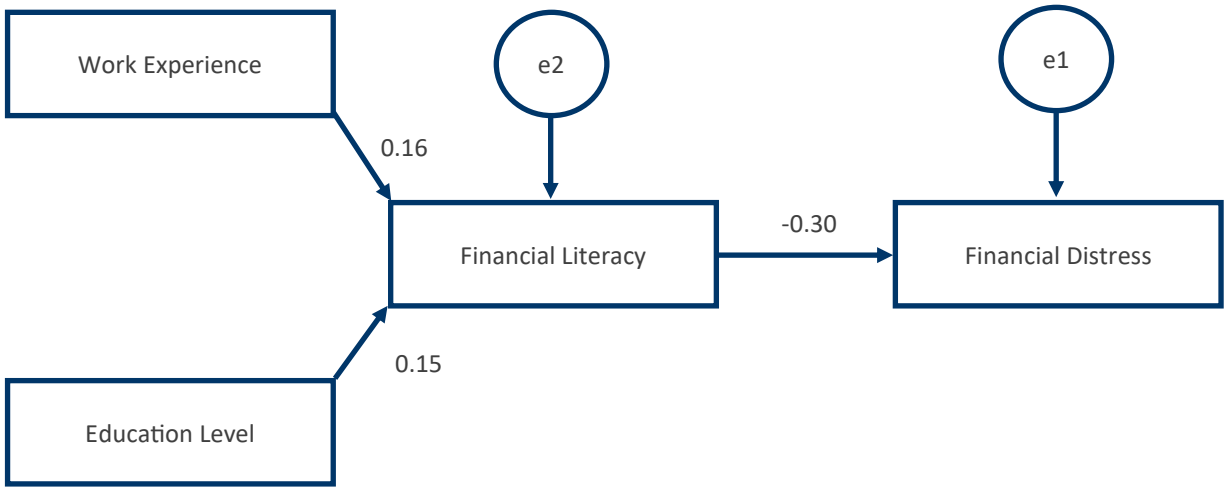
Source: Author's own work.

Path analysis

To further examine the hypothesized direct and indirect associations among financial literacy, financial distress, and relevant predictors, a path analysis was conducted. Using a structural equation modeling (SEM) framework, we simultaneously estimated the associations of education level and work experience with financial literacy, and the association of financial literacy with financial distress. Figure 1 depicts the SEM path diagram showing the specified directional paths among these observed variables.

In the diagram, rectangles represent observed variables (Education Level, Work Experience, Financial Literacy, Financial Distress). Single-headed arrows indicate hypothesized directional associations (predictor → outcome). Standardized regression weights (β) are displayed on the arrows and indicate the strength and direction of associations (β > 0 positive; β < 0 inverse). Circles (e1, e2) denote error terms capturing unexplained variance in the endogenous variables. No double-headed arrows (covariances) are specified in this model.

Figure 1: Structural equation model (SEM) path diagram



Note: Rectangles = observed variables; circles = error terms; single-headed arrows = hypothesized directional associations; numbers on arrows = β = standardized regression weight. Positive β values represent positive associations; negative β values represent inverse associations.

Source: Author's own work.

Education level and work experience were positively associated with financial literacy (β = 0.15, p = 0.02 and β = 0.16, p = 0.02, respectively), with small effect sizes. Financial literacy was negatively associated with financial distress (β = −0.30, p < 0.001), indicating that higher financial literacy relates to lower financial distress in this sample. This inverse association is the study's central empirical finding.

The model exhibited excellent global fit (Schermelleh-Engel et al., 2003): $\chi^2(3) = 0.48$, $\chi^2/df = 0.16$, p = 0.92; SRMR = 0.01; RMSEA = 0.00, 95% CI [0.00, 0.06], PCLOSE = 0.97; CFI = 1.00; NFI = 0.99; GFI = 1.00; AGFI = 1.00 (N = 230). These indices indicate that the specified paths adequately reproduce the observed covariances. Given the small degrees of freedom, near-perfect indices are not unexpected; therefore, we report the RMSEA confidence interval for precision. For transparency, the explained variance of the endogenous constructs was Financial Literacy $R^2 = 0.05$ and Financial Distress $R^2 = 0.09$, indicating modest explanatory power despite excellent global fit.

Discussion

This study provides empirical insights into the relationship between financial literacy and financial distress within a critical professional group, oncology hospital nurses. The findings support the role of financial literacy as a key factor in financial well-being and add to the literature on personal finance, behavioral economics, and workforce productivity.

Our results are consistent with a statistically significant negative association between financial literacy and financial distress. This finding is consistent with thestudies by Afif and Sulhan (2022), Gerzon and Lopena (2023), Idris et al. (2013), Karakara et al. (2022), McCarthy (2011), and Nguyen and Scott (2017), but it contrasts with the findings of Maidani et al. (2023) and Awallia and Dewi (2019). The evidence generally indicates an inverse association between financial literacy and financial distress. This supports the conceptualization of financial literacy as a potential protective correlate against financial difficulties at the individual level.

To our knowledge, this is the first empirical study to examine the link between financial literacy and financial distress specifically among oncology nurses - a professional group exposed to unique occupational stressors and financial challenges. Integrating behavioral finance into occupational health, this study shows that higher financial literacy is associated with lower distress, after accounting for sociodemographic factors.

Theoretical implications

In addition, education level and work experience both exhibit positive associations with financial literacy. Higher education and work experience are linked to greater financial literacy and a lower likelihood of distress. These findings are aligned with the broader conceptualization of financial literacy as a critical life skill influencing not only individual financial well-being but also wider economic and social outcomes (Lusardi and Mitchell, 2023; OECD, 2023). From a human capital perspective, this suggests that investments in education and professional development may be associated with enhanced financial literacy and lower financial distress.

Financial literacy scores are higher among married participants compared to those of unmarried ones. Studies by Aguiar-Díaz and Zagalaz-Jiménez (2022), Jayanthi and Rau (2019), and Taft et al. (2013) support this finding, indicating that being married or in a relationship may be associated with improved financial literacy. Participants with higher education levels have higher financial literacy scores compared to those with lower education levels. The finding that financial literacy rises with educational level is similar to that of Karakurum-Özdemir et al. (2019), Taft et al. (2013), and Yıldırım et al. (2017). The evaluation indicates that financial distress does not vary according to the sociodemographic factors studied, which differs from the results of Taft et al. (2013), who found that financial well-being (the opposite of financial distress) was positively related to age and education.

This research contributes to theory by framing financial literacy not only as an economic skill set but also as an occupational resilience factor - a novel conceptual link between behavioral finance and occupational health.

Practical implications

Oncology nurses have high levels of stress since they play significant roles in cancer treatment and related processes (Erami & Taghadosi, 2023; Ko, 2016; Soheili et al., 2021). Furthermore, Aziz et al. (2021), Bayram et al. (2022), and Raftery et al. (2022) assert the significance of finance-based competencies for nurses. Through financial training, nurses can enhance their financial skills. Our results suggest that such skills are not merely beneficial for personal financial management but may also be associated with buffering work-related psychological strain.

Strengthening job-related competencies may help reduce distress. In practice, financial education is generally associated with increases in financial literacy, and higher financial literacy is often associated with lower financial distress. Therefore, implementing structured financial education programs within healthcare institutions may serve as a dual-purpose intervention - improving personal financial skills while potentially reducing occupational stress, which is consistent with international calls to integrate financial literacy into workforce development policies (Lusardi and Mitchell, 2023; OECD, 2023). Increasing financial literacy among healthcare professionals may be associated with lower distress, improved well-being and job performance, and support for sustainable healthcare services.

Conclusions

This study documents a statistically significant negative association between financial literacy and financial distress among oncology hospital nurses. The findings position financial literacy as a key correlate of financial well-being in this professional group and contribute evidence from an under-explored occupational context with implications for workforce stability and productivity.

Although cross-sectional, the results suggest that supporting nurses' financial capabilities - for example, through voluntary, low-burden education or counseling that covers budgeting, saving, debt management, and basic investing - may be associated with lower financial distress, improved well-being, and, by extension, more sustainable service delivery. Strengthening working conditions and social protection may complement such initiatives by reducing background financial stressors.

Financial distress is associated with poorer health, lower job satisfaction, and difficulties concentrating on patient care. By enhancing financial literacy, nurses may experience less stress and better focus at work. As part of holistic cancer care - addressing physical, psychological, social, and economic needs - oncology nurses can, where appropriate, use standardized tools to screen patients' financial concerns (e.g., income, debt, insurance) and provide or refer to financial information resources for patients and families.

In sum, while focused on a specific professional group within the healthcare sector, this study adds empirical evidence on the financial literacy-financial distress relationship and points to organizational strategies that may be linked to improved well-being and more resilient healthcare workforces.

Limitations and future research

The principal strength of this study is its implementation in a well-established tertiary oncology hospital in

Türkiye that conducts both education and research. Nevertheless, several limitations warrant consideration. First, the single-institution setting may limit generalizability, as institutional culture, patient mix, and working conditions may differ from those in other oncology or general hospitals. Second, reliance on self-reported data introduces potential recall and social desirability biases. Third, because the research was conducted in Türkiye, cultural factors - such as financial norms, attitudes toward debt, and features of the healthcare system - may affect applicability to other contexts. Fourth, financial literacy was measured solely as knowledge; attitude and behavior dimensions were not assessed. Finally, the cross-sectional design precludes causal inference.

To address these limitations, future research could include multiple oncology hospitals and adopt multi-center or cross-country designs to test whether the observed associations hold across diverse settings. Expanding measurement to include attitudes and behaviors would provide a more comprehensive assessment of financial literacy, and examining other healthcare professional groups would inform broader workforce implications. Additional work might analyze how financial distress relates to specific financial behaviors (e.g., saving, investing, debt management) and quantify the economic costs of financial distress in professional workforces. Intervention studies - for example, evaluating financial-literacy training for nurses and other healthcare professionals with pre-post assessments of financial distress, job performance, and stress - would offer valuable evidence on effectiveness and cost-effectiveness/return on investment.

References

Afif, M.Y. & Sulhan, M. (2022). Analysis of Behavioral Finance, Financial Literacy and Their Impact on Financial Distress. REVITALISASI: Jurnal Ilmu Manajemen, 11(1), 1-9. https://dx.doi.org/10.32503/revitalisasi.v11i1.2359.

Aguiar-Díaz, I. & Zagalaz-Jiménez, J.R. (2022). Women and financial literacy in Spain. Does marital status matter? Journal of Women & Aging, 34(6), 785-799. https://dx.doi.org/10.1080/08952841.2021.1991194.

Aiken, L.H., Clarke, S.P., Sloane, D.M., Sochalski, A. & Spetz, J. (2002). Hospital nurse staffing levels and patient mortality. Journal of the American Medical Association, 288(16), 1987-1993. https://dx.doi.org/10.1001/jama.288.16.1987.

Awallia, A.F. & Dewi, A.S. (2019). Analisis Hubungan Antara Financial Literacy dan Financial Distress (Studi Pada Dewasa Muda di Kota Bandung). Jurnal Wawasan dan Riset Akuntansi, 6(2), 64-73. http://dx.doi.org/10.25157/jwr.v6i2.1721.

Aydıner Boylu, A. (2014). Tek Ebeveynli Ailelerde Finansal Sikinti Ve Fonksiyonlar Arasindaki İlişkinin İncelenmesi. Hacettepe Üniversitesi İktisadi Ve İdari Bilimler Fakültesi Dergisi, 32(1), 55-72. https://dx.doi.org/10.17065/huiibf.34906.

Aziz, A.S.A., Ismail, N., Farleena, N., Hamid, R. & Rahim, A.A.A. (2021). Determinants of Financial Well-Being Among Nurses at Private Hospital in Kelantan. Global Business & Management Research, 13(4), 152-166.

Bayram, A., Pokorná, A., Ličen, S., Beharková, N., Saibertová, S., Wilhelmová, R., Prosen, M., Karnjus, I., Buchtová, B. & Palese, A. (2022). Financial competencies as investigated in the nursing field: Findings of a scoping review. Journal of Nursing Management, 30(7), 2801-2810. https://dx.doi.org/10.1111/jonm.13671.

Buckingham, M. & Coffman, C. (2009). First, break all the rules: What the world's greatest managers do differently. Simon & Schuster, New York.

Ceyhan, İ.F. & Tosun, S. (2023). Finansal okuryazarlık ile tasarruf davranışları ilişkisi üzerine ampirik bir çalışma. Alanya Akademik Bakış, 7(3), 1081-1103. https://dx.doi.org/10.29023/alanyaakademik.1209199.

Columbia University. (2025). Path Analysis. Columbia University Mailman School of Public Health. https://www.publichealth.columbia.edu/research/population-health-methods/path-analysis#:~:text=Path%20analysis%2C%20a%20precursor%20to,outcome%20via%20multiple%20causal%20pathways (Accessed: 14.01.2025).

Erami, E. & Taghadosi, M. (2023). Factors contributing to grief experience among oncology nurses: A qualitative study. Seminars in Oncology Nursing, 39(5), 151-472. https://dx.doi.org/10.1016/j.soncn.2023.151472.

Financial Therapy Association. (2021). What is financial therapy? https://financialtherapyassociation.org/about/ (Accessed: 14.01.2025).

Gerzon, R.A. & Lopena, G.L. (2023). Financial Literacy and Financial Well-Being of Public Health Nurses in a First Class Province in the Philippines. Philippine Social Science Journal, 6(2), 64-71. https://dx.doi.org/10.52006/main.v6i2.752.

Gignac, G.E. & Ooi, M.L. (2022). Measurement error in research on financial literacy: How much error is there and how does it influence effect size estimates? Journal of Consumer Affairs, 56(2), 938-956. https://dx.doi.org/10.1111/joca.12417.

Haghpanah, S., Zareifar, S., Beigipour, Z., Hosseini, S., Molavi, M.A. & Naderi, M. (2017). Job satisfaction and stress levels of nurses working in oncology wards; a multicenter study. Galen Medical Journal, 6(2), 722-752. https://dx.doi.org/10.31661/gmj.v6i2.722.

Idris, F.H., Krishnan, K.S.D. & Azmi, N. (2013). Relationship between financial literacy and financial distress among youths in Malaysia-An empirical study. Geografia, 9(4), 1-17.

Jayanthi, M. & Rau, S.S. (2019). Determinants of rural household financial literacy: Evidence from south India. Statistical Journal of the IAOS, 35(2), 299-304. https://dx.doi.org/10.3233/SJI-180438.

Karakara, A.A.W., Sebu, J. & Dasmani, I. (2022). Financial literacy, financial distress and socioeconomic characteristics of individuals in Ghana. African Journal of Economic and Management Studies, 13(1), 29-48. https://dx.doi.org/10.1108/AJEMS-03-2021-0101.

Karakurum-Ozdemir, K., Kokkizil, M. & Uysal, G. (2019). Financial literacy in developing countries. Social Indicators Research, 143, 325-353. https://dx.doi.org/10.1007/s11205-018-1952-x.

Kılıç. S. (2016). Cronbach's alpha reliability coefficient. Psychiatry and Behavioral Sciences, 6(1), 47-63. http://dx.doi.org/10.5455/jmood.20160307122823.

Ko, W. (2016). Stress levels of nurses in oncology outpatient units. Clinical Journal of Oncology Nursing (CJON), 20(2), 158-164. https://dx.doi.org/10.1188/16.CJON.158-164.

Lusardi, A. (2023) Financial literacy and the need for financial education: Evidence and implications. Journal of Economic Literature, 61(3), 755-801. https://dx.doi.org/10.1186/s41937-019-0027-5.

Lusardi, A. & Mitchelli, O.S. (2007). Financial literacy and retirement preparedness: Evidence and implications for financial education: The problems are serious, and remedies are not simple. Business Economics, 42, 35-44. https://dx.doi.org/10.2145/20070104.

Maidani, R. & Rianto, M. (2023). The Influence of Financial Literacy, Financial Behavior, Religiosity and Risk on Financial Distress: Case of Millennial Generation During the Covid-19. East Asian Journal of Multidisciplinary Research, 2(1), 271-280. https://dx.doi.org/10.55927/eajmr.v2i1.2595.

Maslach, C. & Jackson, S.E. (1981). The measurement of burnout. Journal of Occupational Behavior, 2(2), 99-113. https://dx.doi.org/10.1002/job.4030020205.

Matthews, G. (2016). Distress. Stress: Concepts, cognition, emotion, and behavior. San Diego: Academic Press., San Diego. https://dx.doi.org/10.1016/B978-0-12-800951-2.00026-1.

McCarthy, Y. (2011). Behavioural Characteristics and Financial Distress. ECB Working Paper No. 1303. https://ssrn.com/abstract=1761570 (Accessed: 14.01.2025).

Mirowsky, J. & Ross, C.E. (1986). Social patterns of distress. Annual Review of Sociology, 12(1), 23-45. https://dx.doi.org/10.1146/annurev.so.12.080186.000323.

Murray R.B. & Huelskoetter M.M.W. (1983) Psychiatric Mental Health Nursing: Giving Emotional Care. Prentice Hall Inc., Englewood Cliffs.

Nguyen Vu, N. & Scott, J. (2017). Financial capability: Literacy, behavior, and distress. https://ssrn.com/abstract=3178367 (Accessed: 14.01.2025).

OECD. (2023). OECD/INFE 2023 International Survey of Adult Financial Literacy, OECD Business and Finance Policy Papers, No. 39. OECD Publishing, Paris. https://dx.doi.org/10.1787/56003a32-en.

Prawitz, A., Garman, E.T., Sorhaindo, B., O'Neill, B., Kim, J. & Drentea, P. (2006). InCharge financial distress/financial well-being scale: Development, administration, and score interpretation. Journal of Financial Counseling and Planning, 17(1), 28-43.

Raftery, C., Sassenberg, A.M. & Bamford-Wade, A. (2022). Business acumen for nursing leaders: A scoping review. Journal of Nursing Management, 30(4), 926-935. https://dx.doi.org/10.1111/jonm.13593.

Rishel, C.J. (2014). Financial savvy: the value of business acumen in oncology nursing. Oncology Nursing Forum, 41(3), 1-23. https://dx.doi.org/10.1188/14.ONF.324-326.

Şahin, M. & Barış, S. (2017). Finansal okuryazarlık ve tasarruf davranışları: Kamu çalışanları üzerine bir inceleme. Çankırı Karatekin Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 7(2), 77-103.

Schermelleh-Engel, K., Moosbrugger, H. & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. Methods of Psychological Research Online, 8(2), 23-74.

Schneiderman, N., Ironson, G. & Siegel, S.D. (2005). Stress and health: Psychological, behavioral, and biological determinants. Annual Review of Clinical Psychology, 1(1), 607-628. https://dx.doi.org/10.1146/annurev.clinpsy.1.102803.144141.

Selye, H. (1976). Stress in Health and Disease. Butterworths: Boston, London.

Selye, H. (1974). Stress without distress. Psychopathology of Human Adaptation. Springer US, Boston. https://dx.doi.org/10.1007/978-1-4684-2238-2_9.

Soheili, M., Taleghani, F., Jokar, F., Eghbali-Babadi, M. & Sharifi, M. (2021). Occupational stressors in oncology nurses: A qualitative descriptive study. Journal of Clinical Nursing, 30(22), 3171-3181. https://dx.doi.org/10.1111/jocn.15816.

Taft, M., Hosein, Z., Mehrizi, S. & Roshan, A. (2013). The Relation between Financial Literacy, Financial Wellbeing and Financial Concerns. International Journal of Business and Management, 8(11), 63-75. https://dx.doi.org/10.5539/ijbm.v8n11p63.

Van Rooij, M., Lusardi, A. & Alessie, R. (2011). Financial literacy and stock market participation. Journal of Financial Economics, 101(2), 449-472. https://dx.doi.org/10.1016/j.jfineco.2011.03.006.

Viertiö, S., Kiviruusu, O., Piirtola, M., Kaprio, J., Korhonen, T., Marttunen, M. & Suvisaari, J. (2021). Factors contributing to psychological distress in the working population, with a special reference to gender difference. BMC Public Health, 21, 611-632. https://dx.doi.org/10.1186/s12889-021-10560-y.

Yıldırım, M., Bayram, F., Oğuz, A. & Günay, G. (2017). Financial literacy level of individuals and its relationships to demographic variables. Mediterranean Journal of Social Sciences, 8(3), 19-42. https://dx.doi.org/10.5901/mjss.2017.v8n3p19.

Usage of AI statement

During the preparation of this manuscript, artificial intelligence tools were used only for language editing, grammar checking, and improving the clarity of the text. The authors reviewed and edited all AI-assisted outputs and take full responsibility for the content of the manuscript.

Appendinx: Survey

SECTION I - Sociodemographic Characteristics of the Participant

Please write your answer for each item below. Do not leave any questions blank!		
1	What is your gender?	
2	What is your age?	
3	What is your marital status?	
4	What is your education level?	
5	How many years have you been working as a nurse?	
6	How many years have you been working in an oncology hospital?	

SECTION II - Basic Financial Literacy

The 5-item question set below aims to assess basic financial literacy. Please read the following questions carefully and select the option that best applies to you. Do not leave any questions blank!	
1	Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow? (i) More than $102; (ii) Exactly $102; (iii) Less than $102; (iv) Do not know; (v) Refusal.
2	Suppose you had $100 in a savings account and the interest rate is 20% per year and you never withdraw money or interest payments. After 5 years, how much would you have on this account in total? (i) More than $200; (ii) Exactly $200; (iii) Less than $200; (iv) Do not know; (v) Refusal.
3	Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account? (i) More than today; (ii) Exactly the same; (iii) Less than today; (iv) Do not know; (v) Refusal.
4	Assume a friend inherits $10,000 today and his sibling inherits $10,000 3 years from now. Who is richer because of the inheritance? (i) My friend; (ii) His sibling; (iii) They are equally rich; (iv) Do not know; (v) Refusal.
5	Suppose that next year, your income doubles and the prices of all goods double as well. Compared with today, how much will you be able to buy with your income next year? (i) More than today; (ii) The same as today; (iii) Less than today; (iv) Do not know; (v) Refusal.

SECTION III - Financial Distress

This scale aims to measure whether individuals experience difficulties in money management and financial matters. Please read the following statements carefully and write the response that best applies to you on the scale provided next to each statement. Do not leave any questions blank!	
1	What do you feel is the level of your financial stress today? (1. No Stress - 10. Extremely Stressed)
2	How satisfied are you with your present financial situation? The '1' represents complete dissatisfaction, and the '10' represents complete satisfaction. (1. Not satisfied at all - 10. Extremely satisfied)
3	How do you feel about your current financial situation? (1. I feel overwhelmed - 10. I feel completely comfortable)
4	How often do you worry about being able to meet normal monthly living expenses? (1. Not Worried at All - 10. Always Worried)
5	How confident are you that you could find the money to pay for a financial emergency that costs about $1,000? (1. No Confidence - 10. Very Confident)
6	How often does this happen to you? You want to go out to eat, go to a movie or do something else and don't go because you can't afford to? (1. Never - 10. Always)
7	How frequently do you find yourself just getting by financially and living paycheck to paycheck? (1. Never - 10. Always)
8	How stressed do you feel about your personal finances in general? (1. No Stress - 10. Extremely Stressed)