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Understanding the Financial Knowledge Gap: A New Dimension of Inequality in Later Life

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ABSTRACT

To understand individuals' financial behaviors, it is important to understand the financial knowledge gap – the distance between one's objective and subjective financial knowledge. Overestimating one's financial knowledge can lead to risky financial behaviors. To date, limited empirical work has examined how financial knowledge gap varies across age groups. We analyze the size and nature of the financial knowledge gap and its variation across age groups. Using nationally representative data, we find robust evidence that older adults overestimate their financial knowledge. Social workers can assess the financial knowledge gap and educate their clients to protect from financial fraud, exploitation, and abuse.

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In recent years, social workers have focused on financial capability and asset building approaches to help individuals and families who experience increasing disparities of income and wealth (Birkenmaier, Kunz, Sander, & Horwitz, 2013). The financial capability framework includes both financial knowledge and financial inclusion—in other words, the ability to act, and the opportunity to act (Sherraden, 2013a). Contemporary families—and especially those with low-income—must simultaneously cope with declining incomes and wealth and increasingly complex financial landscapes (Sherraden, 2013b). The rapid expansion of financial technologies, the proliferation of complicated products and services (Policy Research Institute, Canada, 2006), the shift away from defined benefit to defined contribution pension plans (Bucher-Koenen & Lusardi, 2011), and the mounting reliance on consumer credit means that households must make increasingly sophisticated calculations and decisions to manage their financial lives (Lusardi & Mitchell, 2014; Sherraden, 2013b). As a result, social workers have sought effective approaches to building financial capability and assets in households. Moreover, building financial capability for all and reducing extreme

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economic inequality have been identified as two of the twelve grand challenges for social work in the twenty-first century (Uehara et al., 2014).

Financial knowledge is important because it influences financial behaviors and practices. For example, high levels of financial knowledge are associated with better financial behaviors and practices, whereas low levels of financial knowledge place individuals at risk of financial insecurity and poverty (Collins, 2013; Grinstein-Weiss, Guo, Reinertson, & Russell, 2015; Hui, Nguyen, Palameta, & Gyarmati, 2016; Xiao, Chen, & Chen, 2014). Important for gerontological social workers, evidence suggests that older adults have lower levels of financial knowledge than other age groups (Finke, Howe, & Huston, 2011; Lusardi & Mitchell, 2011a, 2011b; Lusardi, Mitchell, & Curto, 2012) making them particularly vulnerable to financial fraud, exploitation, and abuse (Lusardi, 2012). Financial education programs and workshops on retirement planning are some proposed interventions to increase financial knowledge among older adults (McCallion, Ferretti, & Park, 2013). While these efforts are important, only a self-selecting group of older adults are likely to take advantage of such interventions.

In this study, we investigated people's financial knowledge from a broader perspective of knowledge and perception. Because people's perception mediates the relationship between their knowledge and actions (Bandura, 1982), it is equally important to understand how much a person knows about financial matters, as well as how a person perceives the extent of their own knowledge. Given the tendency for cognition to change with age (Horn & Cattell, 1967), the gap between actual knowledge and perception might vary for different age groups. Understanding the nature of this gap and its variation across age groups will help to identify how and when to intervene to improve the quality of older adults' financial lives.

Financial vulnerability among older adults

Financial vulnerability—exposure to financial risk, stress, and the threat of financial fraud, exploitation and abuse—is a rising concern in older age (Sherraden & Morrow-Howell, 2015). To increase older adults' financial well-being, it is vital to understand the nature and extent of this vulnerability and to identify risk factors that may be unique to this population.

There are both individual and structural factors to consider. At the individual level, previous research has identified a number of risk factors for financial vulnerability among older adults. For example, in a conceptual study, Rabiner, O' Keeffe, and Brown (2004) suggested that cognitive decline, limitations surrounding activities of daily living, and recent experience of the loss of a loved one might be associated with financial vulnerability.

At the structural level, financial markets and products have become increasingly complex, and older adults are required to be increasingly self-sufficient regarding the planning and management of their financial lives.

The general shift from defined benefit to defined contribution retirement plans has made financial planning more complicated (Lusardi, 2012; McCallion et al., 2013). Furthermore, older adults are likely to be at the peak of asset accumulation, yet have low financial knowledge, making them particularly susceptible to financial fraud, exploitation, and abuse (Lusardi, 2012; McCallion et al., 2013). Because of barriers to re-entry into the workforce, such as stereotyping by age, race, and disability; disparities in education, skills and training; and deficits in community resources, older adults have limited means to recover from financial losses that result from fraud, exploitation, and abuse (Anderson, Richardson, Fields, & Harootyan, 2013). Building financial knowledge and awareness of financial fraud, exploitation, and abuse among older adults and facilitating risk assessment by professionals working with older adults can serve as protective factors against financial vulnerability in older age (McCallion et al., 2013).

Financial knowledge

Financial knowledge is one's understanding of financial matters. Individuals need to be aware of the micro- and macroeconomic environment and understand basic issues of everyday finance such as saving, investment, credit, interest rates, inflation, and pricing of consumer products, among others. As such, financial knowledge is a form of literacy about financial issues. In this area of research, the term financial knowledge is sometimes used interchangeably with financial literacy. For example, Kempson, Collard, and Moore (2005) define financial literacy as individuals' ability to obtain, understand, and evaluate financial information. In other cases, financial knowledge is understood as one component of financial literacy. For example, various authors have conceptualized financial literacy as being comprised of financial knowledge, skills, and attitudes, all of which influence people's financial behaviors (Lusardi, 2011; Lusardi & Mitchell, 2013; Xiao et al., 2014).

Both subjective and objective assessments are used to measure financial knowledge. Objective financial knowledge is measured by assessing people's level of understanding of various components of financial markets and products, such as assets, debts, savings, and investments (Leskinen & Raijas, 2006). Xiao et al. (2014) measured objective financial knowledge using a knowledge quiz or a numeracy test on a specific domain. Lusardi and Mitchell (2014) identified three basic areas to measure objective financial knowledge: (i) numeracy and capacity to do calculations related to interest rates, (ii) understanding of inflation, and (iii) understanding of risk diversification. For simplicity, we use the term "objective financial knowledge" in this study.

Subjective financial knowledge is understood as individuals' self-assessment of their levels of financial knowledge. Both the National Financial Capability Survey (NFCS) in the US and the Canadian Financial Capability Survey (CFCS) used a number of questions to assess the subjective financial

knowledge of the respondents (FINRA Investor Education Foundation, 2009; Statistics Canada, 2009). To measure subjective financial knowledge, Xiao et al. (2014) used a single item from the NFCS that asked on a one to seven scale: "how would you assess your overall financial knowledge?".

Both subjective and objective financial knowledge matter because of their relationship to financial decision-making and behavior. How much people know about finances (i.e., objective knowledge) has a positive relationship with financial behaviors (Hilgert, Hogarth, & Beverly, 2003; Xiao et al., 2014). However, objective financial knowledge does not fully explain why people choose to save or not, take on credit, or pay down bills. Recent evidence suggests that other factors such as subjective financial knowledge play a role. Subjective financial knowledge has been shown to mediate the effect of objective financial knowledge on financial behaviors such as emergency savings (Lown, Kim, Gutter, & Hunt, 2014; Rothwell, Khan, & Cherney, 2016). Overall, it seems that objective financial knowledge is necessary but not sufficient to explain financial decisions and behaviors.

The relationship between one's objective and subjective financial knowledge has not been studied, but may be important to advance our understanding of financial capability. As described below, we focus on the distance between the two constructs: the financial knowledge gap (FKG).

Financial knowledge gap

Given the distinct nature of the objective and subjective knowledge, there is a plausible disconnect between individual's subjective and objective financial knowledge. A few possibilities of this disconnect include the following: First, some have perceptions that exceed their objective financial knowledge; second, the reverse, some may have perceptions that fall below their objective financial knowledge; and, third, some may have more-or-less alignment. The literature suggests that most people have low financial knowledge but are unaware of this, and, thus, overestimate their financial knowledge (Lusardi, 2011). Lusardi and Tufano (2009) measured objective and subjective financial knowledge and found that older adults had lower levels of objective financial knowledge than subjective financial knowledge. Although Lusardi and Tufano (2009) did not examine the distance between subjective and objective financial knowledge, the descriptive statistics indicated a measurable gap between them. Consistency in findings across countries suggested that the low levels of objective financial knowledge amongst older adults were independent of country-specific economic trends, financial markets and products, and culture (Lusardi, 2012).

The distance between one's subjective and objective financial knowledge is considered the financial knowledge gap (FKG). The gap can go in either direction: An individual's subjective financial knowledge is greater than their objective financial knowledge (overestimation), or their subjective financial

knowledge is lower than their objective financial knowledge (underestimation). Understanding the FKG distribution, and its variation across age groups, provides important insight into one dimension of financial vulnerability. Both underestimation and overestimation may adversely affect one's financial behaviors. However, a low levels of objective financial knowledge combined with a relatively high level of subjective financial knowledge can lead to greater risk of financial vulnerability amongst older adults, which is an important cause for concern (Sherraden & Morrow-Howell, 2015).

Overestimated valuation of financial knowledge has unique implications for older adults. Individuals who overestimate their financial knowledge may be more likely to engage in risky financial practices at a life stage that requires more conservative decisions (Sherraden & Morrow-Howell, 2015). In turn, although there is no evidence in the literature, a high likelihood of engaging in risky practices may invite financial predation in the form of fraud and exploitation (Lusardi, 2012). For example, a person with limited knowledge about markets and interest rates, but relatively high confidence in their ability to manage money might be easily misled by a stockbroker. Sherraden and Morrow-Howell (2015) warned that despite high levels of financial confidence (i.e., subjective knowledge), many older adults lack plans for managing financial affairs. The authors emphasized the importance of financial knowledge in old age because of the threat of financial abuse.

Research questions

There has been much research on financial knowledge, in general, and in relation to financial behaviors and practices. Some studies have examined individuals' subjective financial knowledge to see its influence on financial behaviors (Robb & Woodyard, 2011; Xiao et al., 2014). Others have reported descriptive statistics such as mean and proportions of both objective and subjective financial knowledge, and observed differences in gender, ethnicity, and age groups (Lusardi, 2011; Lusardi & Tufano, 2009). However, to our knowledge, no studies have examined the construct of the FKG, defined as the observed distance between subjective and objective financial knowledge. Analyzing the gap, as we do below, provides insight into financial knowledge in ways that previous research cannot. For example, the gap analysis allows us to understand the magnitude of the gap, the nature of the gap (i.e., overestimation or underestimation of financial knowledge), variation of the gap across age groups, and how this variation is related to other demographic and socio-economic factors.

There are at least two major implications of understanding the FKG. First, knowledge of the gap will help identify the age groups who are overconfident in their financial knowledge, which is a risk factor for financial fraud, exploitation, and abuse. Second, knowledge of the gap will help inform prevention and treatment interventions such as financial education and

counseling programs. For example, older adults who may be more likely to overestimate their financial knowledge might need financial education to minimize the FKG as protection form financial fraud, exploitation, and abuse. In this study, we investigated the following research questions:

(1) What is the size and nature of the financial knowledge gap?
(2) How is age related to the financial knowledge gap?

Method

Data

The study is cross-sectional and used data from the 2009 to 2014 Canadian Financial Capability Survey (CFCS). Combined, these two cross-sectional surveys sampled 22,204 adult Canadians through a two-phase stratified random sample administered with computer-assisted telephone interviewing (Statistics Canada, 2009, 2014). In the first phase, households were selected using Random digit dialing (RDD), and in the second phase, one individual from each household was selected. The sampling frame excluded individuals living in institutional settings and individuals residing in Yukon, Northwest Territories, and Nunavut. By definition, then, the survey and our findings are only representative for the 10 provinces of Canada. The survey provided weights for adjustment of nonresponse, bias for selecting one individual in the household, and inconsistency in province-age-sex ratio with population estimates projected in the Census. Hence, the findings we presented are nationally representative. We pooled/stacked data from both years.

Measures

Subjective financial knowledge

Subjective financial knowledge is each person's self-rated level of knowledge of financial matters. In both years, one item in the CFCS asked: "How would you rate your level of financial knowledge?" Responses ranged from one to four with one corresponding to "very good" and four corresponding to "not very good". The item was reverse scored so that a higher score indicated higher financial knowledge. We standardized the scale for comparison.

Objective financial knowledge

Objective financial knowledge was measured as the summary score of the 14-item financial literacy quiz. Each item was scored correct or incorrect. These questions covered a wide range of concepts on financial knowledge that included inflation, interest rate calculation, stock market, and financial products of savings, credit,

and insurance. A sample question reads, "If the inflation rate is 5% and the interest rate you get on your savings is 3%, will your savings have at least as much buying power in a year's time?" The summary score was also standardized.

Financial knowledge gap. We defined FKG as the distance between subjective financial knowledge and objective financial knowledge. The FKG score was generated by subtracting the standardized objective financial knowledge scores from the standardized subjective financial knowledge scores. As such, a negative score indicates underestimation of financial knowledge, and a positive score suggests an overestimation of financial knowledge.

Age

We measured chronological age position in six ordered groups. The categories ranged from 18 years to 65 years and above (1 = 18–24; 2 = 25–34; 3 = 35–44; 4 = 45–54; 5 = 55–64; 6 = 65 and above). The older group (aged 65 and above) is the focus of this study. The age 65 cutoff is important as it signifies access to public and private pension systems (National Institute on Aging, 2011). Persons aged 65 and over tend to have additional access to gerontological human and social services.

Demographic variables

Demographic variables included gender, family structure, number of children, and immigration status. We created a variable of family structure by recoding marital status into three categories (1 = married, 2 = common law, 3 = single, divorced or separated, and widow or widower). We recoded the variable of the number of children in the household into two categories (0 = no children, 1 = children). We used gender and First Nations status as dichotomous variables. We also coded immigration status with two categories (1 = born in Canada; 2 = immigrant).

Socioeconomic variables

Socioeconomic variables included education level, employment status, income level, and home ownership. We coded level of education with three categories (1 = high school diploma or less; 2 = some college and college; 3 = university degree or above).[1] A variable for employment status was coded with four categories (1 = employed; 2 = unpaid work; 3 = unemployed; 4 = retired). We coded income with five categories (1 = less than $32,001; 2 = $32,001– $54,999; 3 = $55,000–$79,999; 4 = $80,000–$119,999; 5 = $120,000 and over). We coded home ownership as a dichotomous variable (0 = renter or other housing status;

[1]In contrast to the US, in Canada, there is a distinction between college and university. The college experience in Canada is roughly comparable to community or junior college in the US. Colleges typically offer career-oriented training and certification, while universities offer undergraduate degrees such as Bachelors of Arts/Sciences and graduate degrees.

1 = home owner). We created a variable of account ownership (Friedline & West, 2016) with two categories (0 = unbanked; 1 = banked).[2]

Analysis plan

As a starting point, we analyzed the distribution of the FKG for the entire sample. Next, we compared means of FKG scores between age groups. Then, we ran multivariate regression models predicting the FKG. The focus of the analysis was on how age was related to FKG score. In the first model, we regressed FKG on age only. In the second model, we controlled for demographic variables along with age position. In the final model, in addition to demographics, we controlled for socioeconomic variables. All regressions in the pooled sample included a year dummy variable. Comparing both model coefficients and model fit statistics across models allowed us to test the research questions. Last, to illustrate the regression findings, we simulated FKG scores. The simulations were calculated as the predicted FKG among older adults. In all analyses, survey weights were used.

Results

The sample is presented in Table 1. The age distribution showed that 18% of the respondents were older adults (65 and over). The largest age group was respondents aged 45–55 years, and the smallest age group was respondents aged 18–25 years (each group making up 19 and 12% of the sample, respectively). Females made up 51% of the sample. The proportion of the respondents who were married was 51%, 11% were living in common-law union, and the rest was living single, separated, divorced, or widowed. Most respondents reported that they did not have any children (68%) living in their households. Respondents born in Canada made up 79%, and 21% respondents migrated to Canada. The respondents with First Nations status made up 3% of the sample. The proportion of respondents that had a university degree was 26%, while 42% had a high school degree or less. More than half of the respondents (52%) were employed, while 12% were unemployed, and another 21% were retired. Almost all respondents owned bank accounts (99%). The income distribution showed that 18% of the respondents were living with an annual income of $32,000 or less, while 21% had an annual income of $120,000 and over. Most of the respondents reported owning a home (74%).

The unstandardized mean scores of subjective and objective financial knowledge were 2.24 (*SD* = .84) and 8.01 (*SD* = 3.55), respectively. After standardization, subjective and objective financial knowledge scores ranged

[2]Here, banked status included owning a personal or joint savings or checking account.

Table 1. Description of sample.

Variables	Proportion/M(SD) N = 22,204
Gender	
Female	51
Family type	
Married	52
Living common law	11
Living single	37
Children	
Have children	32
Immigration status	
Born in Canadian	79
First Nations status	
First Nations	3
Education	
High school and less	42
Some college and college	32
University	26
Employment status	
Employed	52
Unpaid work	16
Unemployed	11
Retired	21
Income	
Less than 32,001	18
32,001–54,999	20
55,000–79,999	21
80,000–119,999	21
120,000 and over	20
Home ownership	
Own home	74
Account ownership	
Unbanked	<1
Age	
18–24	12
25–34	18
35–44	17
45–54	19
55–64	16
65 and over	18
Objective financial knowledge	8.01 (3.55)
Subjective financial knowledge	2.24 (.84)
Financial knowledge gap	–.16 (1.24)

from −1.52 to 2.06, and −2.32 to 1.70, respectively, with mean scores of 0 and standard deviations of 1.

The FKG score ranged between −3.22 and 4.39 with a mean of –.16 points (*SD* = 1.24). In results not shown but available by request, the FKG scores varied significantly across age groups at $p = .05$ level [F (5, 20904) = 126.52, $p < .001$]. Young adults (18 to 24) underestimated their financial knowledge with a mean of–.41 points (*SD* = 1.18). On the other hand, older adults (65 and over) overestimated their financial knowledge by .28 points (*SD* = 1.29). Other age groups also underestimated their level of financial knowledge.

Table 2. Regression results predicting the financial knowledge gap.

	Model 1	Model 2	Model 3
Variables	*β(SE)*	*β(SE)*	*β(SE)*
Age			
18–24	−.16(.06)*	−.18(.07)*	−.21(.07)**
25–34	−.02(.05)	−.05(.05)	−.03(.05)
35–44 (ref)			
45–54	.03(.05)	.07(.04)	.03(.04)
55–64	.07(.05)	.15(.05)**	.03(.05)
65 and over	.53(.05)***	.60(.05)***	.35(.06)***
Gender			
Male		.10(.03)***	.11(.03)***
Family structure			
Married (ref)			
Living common law		.07(.05)	.04(.05)
Living single		.12(.03)***	.04(.04)
Children			
Have children		.01(.04)	.01(.04)
Immigration status			
Immigrant		.24(.04)***	.25(.04)***
First Nations status			
First Nation		.29(.09)***	.19(.09)***
Education			
High school and less			.28(.04)***
Some college and college			.10(.04)**
University (ref)			
Employment status			
Employed (ref)			
Unpaid work			−.04(.04)
Unemployed			.12(.06)
Retired			.18(.05)***
Income			
Less than 32,001			.14(.06)*
32,001–54,999			.07(.05)
55,000–79,999			.04(.05)
80,000–119,999			−.04(.04)
120,000 and over (ref)			
Home ownership			
Do not own home			.02(.04)
Account ownership			
Unbanked			.23(.15)
Model R^2	.03	.04	.06

Note. Reference categories are female for gender, no children for children, born in Canada for immigration status, not First Nations for First Nations status, own home for home ownership, and banked for account ownership.*$p < .05$, **$p < .01$, ***$p < .001$.

Next, we turned to the regression results (see Table 2). The bivariate regression (Model 1) showed two findings with implications for gerontological social work. First, older adults (65 and over) with reference to middle age adults (35–44) significantly overestimated their financial knowledge by .53 points ($\beta = .53$; $p < .001$). On the other hand, younger adults (18–24) significantly underestimated their financial knowledge by .16 points ($\beta = -.16$; $p < .05$). Variation of the financial knowledge gap was not

statistically significant for other age groups. This model explained 3% of the variation of FKG across age groups.

After we entered demographic variables in the regression model (Model 2), the coefficient for older adults increased and remained statistically significant (overestimated the level of financial knowledge by .60 points; $\beta = .60$; $p < .001$). Younger adults significantly underestimated the level of financial knowledge by .18 points ($\beta = -.18$; $p < .05$). In relation to middle age, other age groups except for the age group 55 to 64 were not statistically significantly different. The age group 55 to 64 significantly overestimated the level of financial knowledge ($\beta = .15$; $p < .01$). Among the demographic variables, males were more likely than females to overestimate their financial knowledge by a difference of .10 points ($\beta = .10$; $p < .01$), and immigrants were more likely than Canadian-born to overestimate their financial knowledge by a difference of .33 points ($\beta = .33$; $p < .001$). Respondents with First Nations status were more likely to overestimate their financial knowledge ($\beta = .29$; $p < .001$). The explanatory power of this model increased to 4%.

In the final regression model (Model 3), we entered socioeconomic variables. When we controlled for all the demographic and socioeconomic variables, the coefficient for older adults decreased from .53 to .35 (34%) of the magnitude from Model 2 ($\beta = .35$; $p < .001$). Younger adults underestimated their financial knowledge by .21 points ($\beta = -.21$; $p < .01$). Again, the results for other age groups were not statistically significant. Of note, the coefficient for older adults was reduced while controlling for socioeconomic variables. Gender, immigration, and First Nations status were still significant with similar magnitude and direction. Education was related to the FKG. Compared to those with a university degree, respondents with a high school degree or less overestimated their financial knowledge by .28 points ($\beta = .28$; $p < .001$). Retired respondents compared to employed respondents overestimated their financial knowledge by .18 points ($\beta = .18$; $p < .001$). With reference to respondents with higher incomes ($120,000 and over), those with low incomes (less than $32,001) overestimated their financial knowledge

Table 3. Predicted financial knowledge gap of older adults.

Family structure	Men	Women
Married, high school degree or less	.25***	.14**
Living common law, high school degree or less	.28***	.17**
Single, high school degree or less	.28***	.17**
Married, some college or a college degree	.07	−.04
Living common law, some college or a college degree	.10	−.01
Single, some college or a college degree	.10	−.01
Married, university degree	−.03	−.14**
Living common law, university degree	.01	−.11
Single, university degree	.01	−.11

Note. Predicted knowledge gap score estimated from the survey-weighted regression reported in Table 2 model 3. The predicted gap scores presented control for children, immigration status, First Nations status, employment status, income, home ownership, and account ownership. **$p < .01$, ***$p < .001$.

by .14 points (β = .14; p < .05). This regression model (Model 3) explained 6% of the variation of the FKG across age groups, which is double the explanatory power of the bivariate regression model (Model 1).

Last, we calculated the predicted FKG of older adults in a series of scenarios that varied family structure, gender, and level of education (see Table 3).

The postestimation test results showed that the predicted FKG varies significantly across education levels. Male older adults with high a school degree or less, regardless of their marital status, overestimated their financial knowledge. For example, married older males who had a high school degree or less overestimated their financial knowledge by .25 points. Holding other demographic characteristics constant, for male older adults who were single, the predicted FKG was .28 points. However, the predicted FKG scores for male older adults with college education and above were not significantly different from the financial knowledge alignment. For female older adults, a similar decreasing-with-education pattern was found. Female older adults with high levels of education did not overestimate their financial knowledge (i.e., predicted gap score was negative). Married female older adults who had a high school degree overestimated their financial knowledge by .14 points. Holding other characteristics constant, the predicted FKG for female older adults with a university degree was –.14.

Discussion

Demographic change is altering the landscape of the most vulnerable in society. As people live longer and financial options become more complex, financial exploitation of older adults is an emerging social welfare concern. We use nationally representative survey data on financial capability collected by Statistics Canada in 2009 and 2014 to understand the FKG across age groups. We define the FKG as the distance between subjective financial knowledge and objective financial knowledge. As such, the FKG can go in either direction; people can either underestimate or overestimate their financial knowledge.

The size of the FKG at the population level is not large, but the nature of the gap is surprising. Whereas others report that, on average, individuals tend to overestimate their financial knowledge (Lusardi, 2011), we find that Canadian adults underestimate their financial knowledge. Although not entirely, this pattern of underestimation of financial knowledge is contrary to the existing literature, and perhaps unique to the Canadian population. When we look at the variation of the FKG across age groups, we find more significant and important findings that have implications for individuals' financial lives, especially for older adults.

Important for gerontological social workers, we find that there is significant variation of the FKG for older adults. Specifically, older Canadian

adults overestimate their financial knowledge. This pattern was robust to controlling for a range of demographic and socioeconomic factors. Demographic factors such as gender and immigration status predict one's FKG in expected directions, but do not account for much change in the magnitude of the regression coefficients. Socioeconomic characteristics—particularly education and income levels—were more influential than demographics and moderated the relationship between age and FKG. However, beyond the influence of gender, education, and income, the FKG was still higher among older adults. Future research is needed to better understand how the FKG is related to financial behaviors and outcomes, such as retirement security.

Our results further illuminate within-group risk of overestimation among older adults. The predicted FKG varies significantly across family structures in combination with gender and level of education. Male older adults with a high school degree or less are more likely than other groups to overestimate their financial knowledge. Low educated older men are likely to have experienced cumulative and compounding disadvantage that place them at greater risk for economic uncertainty. Social workers and policy advocates might target vulnerable groups, and adopt practice and policy measures to protect them from the risks associated with financial vulnerability.

Practice implications

Building financial knowledge among older adults requires assessment of individuals' levels of financial knowledge and confidence; raising awareness of the FKG and other risk factors for financial fraud, exploitation, and abuse; and encouraging participation in knowledge-building interventions. Because of their close involvement and concern with their clients' financial well-being, social workers are well positioned to take part in this process.

Intervention can occur at the community level. Social workers can offer informational seminars, workshops, and financial planning and counseling sessions. These interventions should target the specific needs of older adults. Given the increasing presence of digital technologies in the financial product and services sector, an emphasis on helping older adults develop skills to make use of these technologies is particularly important. Further, because the focus at this stage of the life course is on maintaining, rather than building wealth, there should be an emphasis on budgeting, planning and consumer safety.

Older adults who are overconfident may not be motivated to participate in financial knowledge-building interventions. As such, making clients aware of the knowledge gap and its relationship to financial vulnerability is vital for stimulating participation. Further, social workers can advocate for the financial rights of their clients and help bridge the gap between individuals and

financial institutions. Together, these action-oriented approaches can help protect older adults from financial fraud, exploitation, and abuse.

Policy implications

The pattern of overconfidence in financial knowledge among older adults requires a policy response. Governments in the United States and Canada have launched national strategies to promote financial capability with a special focus on financial literacy (FCAC, 2013; U.S. Department of the Treasury, 2014). Community organizations have joined this initiative to promote financial knowledge among low-income and other vulnerable populations, including older adults. Our findings on the FKG should encourage policymakers, community organizers, and financial institutions to address inequalities across age groups. While not tested here, the life course perspective may be a useful approach. This perspective considers individual trajectories within a broader social and historical context and emphasizes the role of social structures and inequalities in shaping people's lives (McDaniel & Bernard, 2011).

Governments can require financial institutions to take special measures when servicing older adults in order to protect this vulnerable population from financial fraud and exploitation. For example, Siddiqi, Zdenek, and Gorman (2015) have proposed "age-friendly" banking that includes helping older adults obtain financial education, financial counseling, protection from fraud and abuse, and assistance with aging in place. Financial institutions can offer customized financial products and services that would build capacity and reduce vulnerability in old age. Further, financial institutions can take measures to safeguard older adults' financial assets. For example, institutions might send notification to older adults if any unusual transactions take place in their accounts.

We also suggest that governments consider supporting public, private, nonprofit, and community-based initiatives that provide financial information, education, and training. Further integrating financial capability interventions in the wider network of health and social services already used by older adults can make them more accessible to this population. However, financial education interventions vary considerably in their observed impact (Fernandes, Lynch, & Netemeyer, 2014). More evidence based approaches are needed to improve the effectiveness of interventions for building awareness and promoting financial knowledge among older adults (McCallion et al., 2013).

Limitations

This study used a cross-sectional design, which does not claim to establish causality of the FKG. We acknowledge that such a design was not able to disentangle age effects, from period and cohort effects (Glenn, 2005). Longitudinal data on these constructs, not yet available, would be necessary

to properly identify these potential alternate explanations. A summary score for the objective financial knowledge scale and a single item for subjective financial knowledge were used for measurement. A latent variable approach such as Item Response Theory could be an alternative method for constructing the objective financial knowledge scale. Substantively, the pattern of overestimation of financial knowledge among older adults and underestimation among younger adults can be accounted for by cognitive and psychological aging. However, this was beyond the scope of this study.

Conclusion

Financial vulnerability is a rising concern. Social workers are now actively engaged in building financial capability. This study uses a novel analysis of the FKG to establish a new need for interventions to focus on older adults. Social workers can create equitable economic conditions and enhance financial well-being in old age by building financial knowledge and awareness of the FKG.

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