

A Conceptual and Operational Review of the Negative Financial Health Terminology and Constructs

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Abstract

Financial (di)stress is widespread and an important topic for research by a variety of organizations and disciplines. However, different terms are being used in different disciplines in academia, by organizations, and by consumers. This paper illustrates various terms used to describe negative financial health, provides their incidence in several academic databases and Google searches, provides definitions used in studies, identifies scales of measurement, assesses if new scales are being developed and if they have validity, and identifies if measures of negative financial health constructs include objective, subjective, or both measures. The study ends with specific recommendations for researchers from academia and practitioners worldwide. This article reviews financial negative health terminology and constructs, and attempts to shed light on similarities and differences among the terms, to allow for better knowledge translation and integration.

Keywords: economic hardship, financial distress, economic deprivation, financial strain, financial stress

1. Introduction

More than one-third of adults in the USA, Canada, Australia and New Zealand are struggling financially and experience heightened levels of material hardship (Muir et al., 2016; Seymour Management Consulting Inc., 2017). Increasingly, more people are expected to experience financial stress in the future (American Psychological Association [APA], 2017). In addition, measures taken in countries to slow the spread of COVID-19 have also exacerbated individual negative financial health and its consequences (e.g., Mann, Krueger, & Vohs, 2020; Turcotte & Hango, 2020; Witteveen, 2020). Financial (di)stress has damaging consequences for individuals and their families ranging from declining health to divorce and unsecured debt (Cismaru & Wuth, 2019) prompting academics and organizations to study and try to eliminate this problem.

Due to the impact financial (di)stress has on individuals and society, personal negative financial health is studied across disciplines (e.g., finance, psychology, economics, sociology, marketing) (APA, 2017; Athreya, Mustre-del-Río, & Sánchez, 2017; Australian Psychological Society [APS], 2015; Park, Heo, Ruiz-Menjivar, & Grable, 2017) and by a mixture of organizations (universities, governments and financial institutions) (i.e., Consumer Financial Protection Bureau [CFPB], 2015; Gallup Inc., 2018a; Muir et al., 2016; O'Neill, Prawitz, Sorhaindo, Kim, & Garman, 2006; Seymour Management Consulting Inc., 2017). Various government organizations such as the National Australia Bank have taken interest in their citizens' financial health, examining the prevalence of financial stressors and financial resilience, and are working toward advancing financial resiliency in their clients (e.g., CFPB, 2015; Muir et al., 2016). Similarly, findings from the Seymour Management Consulting Inc. (2017) report suggest Canadians want their financial institutions to provide more financial resources and play a larger role in helping them with their financial health, hence more banks in Canada taking an active role toward promoting financial well-being. This high level of involvement by numerous institutions and organizations is reflected also in the numerous social marketing initiatives run by both government and financial institutions with the declared aimed of promoting financial well-being in their citizens or clients (see Cismaru & Wuth, 2019 for a review).

With several disciplines and organizations working on tackling financial stress, a variety of terms have been used, i.e., financial stress, financial distress, financial strain, financial pressure, economic hardship, economic

deprivation, income inadequacy. Some of these terms mean exactly the same thing, some terms are similar but not identical, and some terms overlap in some respects and are different in other respects, creating confusion and making knowledge translation difficult. Indeed, different terminology is used across disciplines as well as by researchers and industrial practitioners. Financial terminology has been redefined and new scales have been constructed, e.g., *financial well-being* (CFPB, 2015), *financial control* (Gallup Inc. 2018a), *financial wellness* and *financial resilience* (Seymour Management Consulting Inc., 2017). However, authors from one discipline might not consult research specific to another discipline, or even look at reports from industry, which themselves may not build on studies from the academic field. Industrial reports may not be available through academic databases, may not be peer-reviewed, and may not refer to scientific terms and/or specify whether a new developed scale was validated (e.g., Gallup Inc., 2018b). These facts are problematic, as a variety of terms and measures are used or introduced, creating confusion for someone attempting to integrate knowledge.

Therefore, this paper fills the need for a review of negative financial health terminology and constructs to shed light on similarities and differences among the terms and measurements, and allow for better knowledge translation and integration across academic disciplines, and between academia and government and industry. Recent articles indicate a need for a more dynamic knowledge translation, especially between academics and practitioners (see Levit & Cismaru, 2020).

2. Literature Review

Conceptual definitions provide the basis for operational definitions and determination of how to empirically assess constructs (Bernard, 2012). While research studies diligently report what questionnaires were used (operational definition), many studies fail to concurrently provide an understanding of what is being assessed (conceptual definition). Conceptual terms are used to clarify specific, scientific terms, and ensure readers understand the term in the same way that the authors did (Dumont & Wilson, 1967; Lester & Lester Jr., 2015; Newman, Ridenour, Weis, & McNeil, 1997). However, understanding of definitions is further confounded by the inconsistent use of specialized terminology, proxy terms, and unspecified synonyms (Bernard, 2012). Using unspecified synonyms is problematic when there is no scientific thesaurus readily available or the author understands a specific construct differently from their audience. In order to develop a single conceptual framework, that bridges disciplinary boundaries, it is vital that the same terms are used to discuss concepts (Simon, 2014). It is therefore necessary to further clarify terminology associated with individual experiences of negative financial health.

Indeed, analogous relationships exist between financial stress, financial strain, financial hardship, economic deprivation, economic pressure, and perceived income inadequacy (Kim & Garman, 2003; Sinclair & Cheung, 2016). Financial distress, economic stress, and economic strain have also been defined similarly within the literature (e.g., Mills, Grasmick, Morgan, & Wenk, 1992; Voydanoff, 1990). However, scientific and non-scientific terms are vastly different.

Non-scientific terms are widely available in dictionaries and thesauruses. The definitions and synonyms provided by one publisher are similar to those provided by another publisher. In contrast, scientific terms are jargon, and their definitions are spread across various locations. They are often created by researchers to explain latent constructs, and the term being used to describe a concept may differ from the concept that a tool was designed to assess. This poses a problem for researchers: how do you effectively communicate your findings in a manner that anyone from any background can understand the results? How do you bridge the systematic barrier of construct proliferation?

This paper will identify negative financial health terminology, present its use in various databases and on Google by both academics and general public, look for definitions of these terms in academic studies, identify scales used in studies and if new developed scales had validity, and also, if the measures include both subjective and objective components. Ultimately this study could provide an initial lexicon for understanding the breadth of terminology involved in studying negative financial health.

Financial health can be broadly described through positive terms, i.e., financial well-being, and negative terms, i.e., financial stress, financial di(stress), financial strain, financial hardship, etc. Recent definitions of financial well-being include a current and a future component but also refer to individuals considering their objective financial situation as being adequate for their needs and wants and their perception of being able to maintain their current financial situations and actualize desired financial states (subjective financial situation) (Brüggen, Hogreve, Holmlund, Kabadayi, & Löffgren, 2017; CFPB, 2015; Kempson, Finney, and Poppe 2017; Netemeyer, Warmath, Fernandes, & Lynch Jr., 2017). Hence an objective and a subjective component (measures) focus on the positive terms has emerged in the financial health literature.

In contrast, the negative terminology literature is not so advanced. For example, one of the newest definitions of financial distress refers to it as an accumulation of financial stressors that limits one's objective situation and ability to maintain current and future financial needs and wants (Brüggen et al., 2017; Lajuni, Bujang, Karia, & Yacob, 2017). This definition does not appear to include a subjective component. This could create a discrepancy between positive and negative financial terminology which can be problematic as the influx of new terms, definitions, and measures of the positive financial terms may obscure overall understanding of the negative one. As more articles expand negative financial terminology, given the importance of increasing financial resiliency through the transdisciplinary objective of understanding negative financial health constructs, construct proliferation is a wide-spread problem and a clarification of the terminology associated with negative financial health is needed. Hence the focus of this paper on clarifying negative terms such as financial (di)stress.

However, despite differences in the conceptualization of personal negative financial health terms, we seek to identify similarities and trends in how these terms are operationalized, that parallel the operationalization of financial well-being terms (e.g., Kempson et al., 2017). For example, like financial well-being, financial distress may be operationalized through objective assessments, subjective assessments, or both. Objective assessments refer to items that are verifiable and based on fact such as amount of monthly savings or total savings, and amount of debt (Muckler & Seven, 1992). Objective assessments are less susceptible to differences in perception, cognition, and experience because they are values individuals should be able to calculate. Alternatively, subjective assessments are distorted by perceptions, cognitions, and experiences unique to the individual (Muckler & Seven, 1992). In the context of financial distress, subjective assessments may acknowledge that two individuals with the same debts and credits can report different levels of financial distress because of their perception of the financial resources they want and those which they currently have (e.g., O'Neill et al., 2006). Subjective assessment recognizes personal insight and the need to accommodate for individual differences since perceived financial distress may differ from an objective assessment of financial distress (Muckler & Seven, 1992). Objective and subjective measures consequently assess different aspects of one's financial situation, and provide different sources of information.

Previous work in this area includes a conceptual review of negative financial health terms conducted by Sinclair and Cheung (2016) and a conceptual review of financial stress conducted by Davis and Mantler (2004). Sinclair and Cheung focus on providing measurement recommendations and highlighting the need for more research within the field of occupational health psychology. Davis and Mantler (2004) also include a conceptual review of financial stress, differentiate between financial stress and economic hardship, and discuss the effects of financial stress on people, families, and society. They also provide an excellent starting point for understanding financial stress and similar concepts; however, many relevant constructs were not discussed in their paper and the field has expended substantially since the early 2000s.

Although many negative financial health constructs exist, throughout this paper we will generally refer to this collection of constructs as personal or individual negative financial health. Individual negative financial health is broadly defined as any state wherein individuals perceive themselves as experiencing one or several negative financial events, financial issues, or financial stressors, which makes them unable to maintain their current or achieve a desired financial state (e.g., Joo, 1998; Kim & Garman 2003; Lim, Heckman, Montalto, & Letkiewicz, 2014; O'Neill et al., 2005; O'Neill et al., 2006). This broad label subsumes economic-, financial-, and income-based terms, such as economic hardship, financial distress, and economic deprivation.

3. Method

3.1 Terminology Identification and Selection

Keyword literature searches for articles with negative health terminology were inspired by Sinclair and Cheung (2016) and were conducted in the following databases: Google Scholar, JStor, ProQuest, PsycInfo, PubMed, Sage, Science Direct and Wiley Online Library. Keywords used include *economic hardship*, *financial distress*, *economic deprivation*, *financial strain*, *financial stress*, *financial issues*, *financial hardship*, *economic pressure*, *economic stress*, *financial pressure*, and *financial strain*. New financial terms were added throughout the literature review process. Counts from 27,642 articles were conducted to determine the prevalence of each negative financial term, by database (see Table 1).

In order to gain greater understanding of how the general public engages with negative financial health terms, keywords identified from the literature search were also analysed with Google Trends (Google, 2021). Google Trends allows researchers to compare the relative interest in different search terms across time and geographic region. The relative popularity of a single search term is calculated by dividing a geographic total by the total searches conducted in that geographic area within a given timeframe. The relative popularity score of each term

is then scaled from 0 to 100 to indicate interest in the search term over time (Google, 2021). Google Trends have been widely utilized in academic research to forecast behavior and provide unique insights into social phenomenon (reviewed in Jun, Yoo, & Choi 2018). In this paper, global non-real time Google search data was reviewed for a five-year time period (January 2016 to January 2021). The keywords identified from the literature searches were compared from the most to least popular academic terms. Since there is a five-term limit for comparisons, the top term from each search (i.e., financial hardship, financial stress, and financial distress) was included in a subsequent comparison to determine which term was most popular in English speaking countries.

Table 1. Key term search of financial distress and related concepts, citations through October 2018

Database	JStor	ProQue st	PsycInfo/Ov id	PubMe d	Sage *	Science Direct**	Wiley Online Library*	Sum	Percentag es
Economic Hardship	240	1753	764	676	140	231	206	4010	14.54%
Financial Distress	310	1777	215	222	64	634	391	3613	13.10%
Economic Deprivation	147	1111	483	654	103	184	182	2864	10.38%
Financial Strain	68	786	735	750	92	160	143	2734	9.91%
Financial Stress	90	1033	546	516	86	269	185	2725	9.88%
Financial Issues	61	1013	423	606	80	215	147	2545	9.23%
Financial Hardship	59	718	414	612	81	131	122	2137	7.75%
Economic Pressure	111	738	201	306	47	370	89	1862	6.75%
Economic Stress	109	727	382	285	68	138	125	1834	6.65%
Financial Pressure	46	379	90	235	41	208	52	1051	3.81%
Economic Distress	85	444	128	83	47	55	52	894	3.24%
Economic Strain	30	315	187	125	33	43	48	781	2.83%
Economic Adversity	25	184	99	90	19	32	26	475	1.72%
Income Inadequacy	2	18	18	15	1	2	5	61	0.22%
								2758	
Total	1383	10996	4685	5175	902	2672	1773	6	
	5.01			18.76	3.27				
Percentages	%	39.86%	16.98%	%	%	9.69%	6.43%		

Notes: * = Key terms only in abstract. ** = Key terms in title, abstract, or keywords.

3.2 Article Identification and Selection

For the analysis of conceptual and operations definitions, following the methodology of Cismaru and Wuth (2019) and Sinclair and Cheung (2016), the top 50-100 results generated by each database and search engine were considered for inclusion. We then established several inclusion and exclusion criteria. Articles were included if they were peer-reviewed research or review papers published in academic journals. Published working papers were also considered for inclusion. Articles were excluded if a key financial term was not present in the abstract, title or keywords; they were not peer-reviewed; they were not published in a journal; or published in English. A final sample of 37 articles were included for analysis of conceptual and operational definitions.

4. Results

4.1 Negative Financial Health Terminology

4.1.1 Incidence

Within academic spheres, as shown in Table 1, 27586 incidences of negative financial terms were identified. In terms of the presence of negative financial health terms in the specific databases, almost 40% were found in ProQuest, followed by 19% in PubMed, 17% in PsychInfo/Ovid, approximately 10% in Science Direct, and in Wiley Online library, JStor and Sage with about 6.5%, 5% and 3% respectively.

A total of 14 negative financial health terms were identified and counted: *economic hardship* (4010 times), *financial distress* (3613 times), *economic deprivation* (2864 times), *financial strain* (2734 times), *financial stress* (2725 times), *financial issues* (2545 times), *financial hardship* (2137 times), *economic pressure* (1862 times), *economic stress* (1834 times), *economic distress* (894 times), *economic strain* (781 times), *economic adversity* (475 times) and *income inadequacy* (61 times). Three terms, *economic hardship*, *financial distress* and *economic deprivation* appeared more frequently than other negative financial health constructs, reaching 14.54%, 13.10% and 10.38% respectively of the total number of times all terms were used. All three terms were favored across

multiple databases.

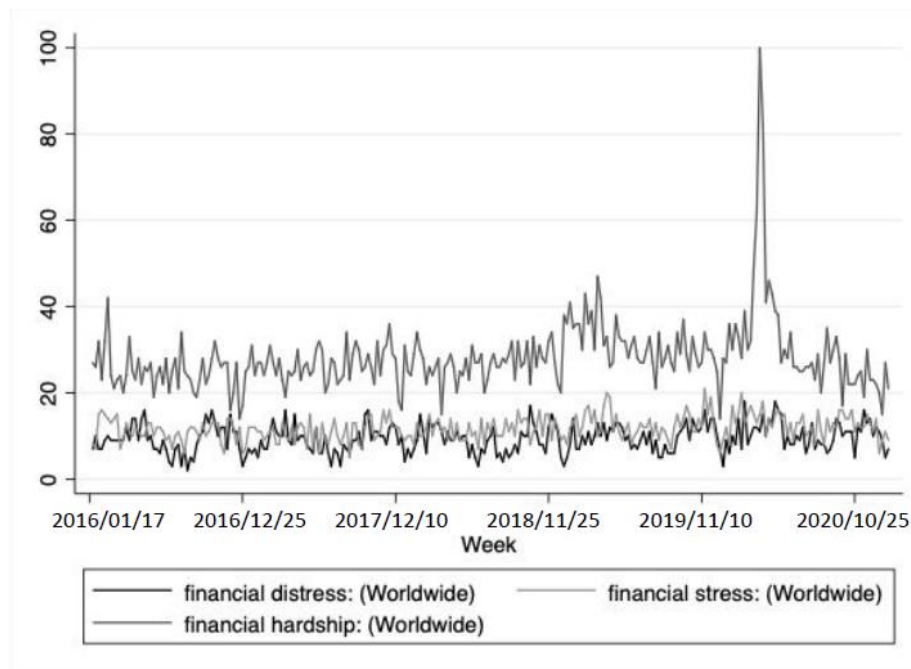
Economic hardship was the most commonly used term across PsycInfo/Ovid and Sage databases, while *financial distress* was the most commonly used term within JStor, ProQuest, Science Direct, and Wiley Online Publishing. *Economic hardship* was the second most commonly used term across four other databases, while *financial distress* was either most commonly used or moderately used (i.e., ranked eighth or tenth). Two other terms, *financial strain* and *financial stress*, were used in almost 10% of cases, whereas *financial issues* and *financial hardship* were used in about 9% of cases, respectively 8% of cases. Five terms, *financial pressure*, *economic distress*, *economic strain*, *economic adversity*, and *income adequacy*, reached less than 5% each out of the total number of uses among the 14 identified terms. *Income inadequacy* was the least commonly used term across all databases with only 0.22%.

Outside of academia, worldwide, general members of the public are more likely to use *financial hardship*, *financial stress*, or *financial distress* when conducting Google searches for information on negative financial health (Google 2021; see Figure 1). When compared with *financial stress* and *distress*, *financial hardship* was the preferred search term used by people in all the English speaking countries as follows: New Zealand (100%), Australia (92%), Canada (64%), the United States (63%), and the United Kingdom (52%; see Table 2).

Table 2. Relative proportion of preferred negative financial health Google search term by region (January 2016 – January 2021)

Country	Financial Hardship	Financial Stress	Financial Distress
Australia	.92	.06	.02
Canada	.64	.25	.11
New Zealand	1.00	.00	.00
United Kingdom	.54	.29	.17
United States	.63	.28	.09

Notes: 1.00 = 100% of searches.



Notes: The maximum interest in the search term *financial hardship* coincides with the initial implementation of many COVID-19 state of emergency and lock-down protocols.

Figure 1. Relative interest in global negative financial health Google search term (January 2016 – January 2021)

4.1.2 Definitions

As shown in Table 3, in 15 out of 37 studies, no definition of the negative financial health terms is provided by the authors.

Reference	Term	Conceptual Definition		New Scale Developed	Operational Definition		
		Examples	Scale		Scale Validity	Objective	Subjective
Aldana and Liljenquist, 1998	financial strain	"Composed of the cognitive, emotional, and behavioral response to the experience of financial hardship" (p. 11)	Financial Strain Survey	Yes	Convergent validity measured with principle component analysis (PCA)	roughly 20% of items	roughly 80% of items
Åslund, Larm, Starrin and Nilsson, 2014	financial stress	"The persistent inability to afford the basic necessities of life" (p. 1)	Adapted Finances-Shame Model (from Starrin, Åslund and Nilsson, 2009)	Adapted from previous scale	Face validity	100% of items	X
Athreya, Mustre-del-Río and Sanchez, 2017	financial distress	"Situations in which the household remains susceptible to any deviation of income from its ex-ante expectation" (p. 3)	Equifax data (no scale)	Not applicable	Not applicable	100% of items	X
Barrera, Caples, and Tein, 2001	economic hardship	"Cognitive appraisal that income is insufficient to provide necessities for living, behaviors that reflect efforts to adjust to inadequate income, and affect that takes the form of despair and hopelessness that one's economic future will be bright" (p. 495)	Scale development: three scales from Conger and Elder (1994), and scale from Vinokur et al. (1996).	Adapted from previous scales	Previously validated scales used	Vinokur et al. (1996) scale	Conger and Elder (1994) scales
Berg, Kiviruusu, Karvonen, Rahkonen, and Huurre, 2017	economic adversity	No conceptual definition provided by authors	Used three items to obtain score.	Yes	Face validity	33% of items	66% of items
Bhargava, Palmer, Chatterjee, and Stebbins, 2018	financial distress	No conceptual definition provided by authors	Adapted Zagorsky 2007 measure as one item	Adapted from previous scale	Face validity	100% of items	X
Bradshaw and Ellison, 2010	financial hardship	No conceptual definition provided by authors	Personal income and perceived income.	Yes	Face validity	Personal income items	Perceived income items
Braveman, Heck, Egerter, Rinki, Marchi, and Curtis, 2018	economic hardship/ adversity	No conceptual definition provided by authors	Assessed difficulty meeting basic needs (i.e., hunger and rent/mortgage problems) during childhood; and frequency of difficulty.	Yes	Face validity	100% of items	X
Britt, Canale, Fernatt, Stutz, and Tibbetts, 2015	financial stress	"the inability to meet one's economic responsibilities" (p. 173)	The amount of stress the respondent felt in relation to their personal finances	Similar questions used elsewhere	Face validity	X	All items
Bultena, Lasley and Geller, 1986	financial distress	No conceptual definition provided by authors	Debt to asset ratio (e.g., Jolly et al., 1985; Melichar, 1984)	Note similar methods used by other economists	Face validity	100% of items	X
Del Río and Young, 2005	financial distress	"The extent to which households consider unsecured debt to be a burden"	Part of the British Household Panel Survey (BHPS)	Not applicable	Not applicable	X	100% of items
Glei, Goldman, and Weinstein, 2018	economic distress financial strain	Reference Voydanoff (1990)'s definition of economic distress as comprised of objective indicators (employment instability and economic deprivation) and subjective indicators (financial strain and unemployment uncertainty). Economic deprivation was related to low income and assets, whereas financial strain was described as perceived financial inadequacy.	4 subjective measures: five-item index of current financial strain, intergenerational financial disadvantage question, current and expected work situations.	Yes	Face Validity	All 4 subjective measures	Relative SES measure
Grossi, Perski, Lundberg, and Soares, 2001	financial strain	"Subjective experience of his/her financial situation" (p. 208)	Adapted from Pearlin et al. (1981) Economic Strain Model; used via Brenner et al. (1988)	Adapted from previous scale	Not indicated by Pearlin et al., 1981	100% of items	X
Gutman, McLoyd, and Tokoyawa, 2005	financial strain	No conceptual definition provided by authors	"(a) difficulties in paying bills, (b) not having enough money to make ends meet, and (c) worrying about not	Yes	Face validity	100% of items	X

			having enough money"				
Hamid and Abdullah, 2009	financial distress	"A reaction, such as mental or physical discomfort, to stress about one's state of general financial well being" (p. 395)	Satisfaction on Their Financial Situation and Causes of Financial Problems	Yes	Face validity	causes of financial problems scale	satisfaction on their financial situation scale
Joo, 1998	financial stress	"The stress that is caused by financial situations including personal, family, and other financial circumstances" (p.9)	Financial Stressors Scale and Financial Stressor Index	Yes	Face validity	100% of items	X
Kahn and Pearlin, 2006	financial strain	No conceptual definition provided.	Household income. Financial strain measure adapted from Pearlin et al. (1981)	No	Face validity	X	100% of items
Kalkhoran, Berkowitz, Rigotti, and Baggett, 2018	financial strain/ financial stress	"Difficulty meeting financial needs and obligations" (p. 81)	Assessed whether a shortage of money resulted in bills not being paid on time	Reportedly, similar to other measures	Face validity	100% of item	X
Kiely, Leach, Olesen and Butterworth, 2015	financial hardship	"Differentiate between two aspects of financial hardship: cash flow problems and deprivation. Specifically, cash-flow problems are relatively commonly reported and define circumstances in which regular bills may not be paid on time, or occasions when financial assistance is sought from family members . . . deprivation refers to less common events whereby people are unable to provide the essentials of life and cannot meet the basic standards of living accepted in society" (p. 910)	Measure of financial hardship adapted from Bray (2001) and Butterworth and Crosier (2006)	No	Criterion validity previously established	100% of items	X
Kim and Garman, 2003	financial stress/ economic stress	"Subjective perception of one's personal finances" (p. 35)	Adapted financial stress scales used in Joo (1998) and Bagwell (2000)	No	Face validity	X	100% of items
Latsou and Geitona, 2018	economic distress	No conceptual definition provided by authors	Index of personal economic distress (IPED; Madianos, Economou, Alexiou, and Stefanis, 2011)	No	Content validity measured against socioeconomic	roughly 62.5% of items	roughly 37.5% of items
status (SES)							
Lim, Heckman, Letkiewicz, and Montalto, 2014	financial stress	No conceptual definition provided by authors	Used six items to obtain scores	Yes	Face validity	X	100% of items
McCarthy, 2011	financial distress/ financial difficulty	"A situation where individuals report that they are having some degree of difficulty keeping up with their bills and credit commitments" (p. 11)	Financial Capability Survey	No	Pilot studies conducted, but no scale validation	100% of items	X
Mills, Grasmick, Morgan, and Wenk, 1992	economic strain	Voydanoff's (1990) definition as "an individual's perception of financial inadequacy as well as her/his concerns and worries" (p. 440)	Used four items to obtain score.	Yes	Face validity	X	100% of items
O'Neill, Xiao, Sorhaingo, and Garman, 2005	financial stress/ negative financial events	No conceptual definition provided by authors	Used one item to obtain a financial stress score, and 12 items to obtain a negative financial event score	Yes	Face validity	negative financial items	financial stress items
Park, Heo, Ruiz-Menjivar, and Grable, 2017	financial hardship	"An individual's disadvantageous financial condition" (p. 323)	Used three items to obtain score.	Yes	Face validity	100% of items	X
Pearlin, Lieberman, Menaghan, and Mullin, 1981	economic strain	Difficulties meeting basic needs, and difficulties acquiring non-necessary, but desired items.	Economic strain model	Yes	Face validity	X	100% of items
Perry, Hoerger, Seibert, Gerhart, O'Mahony, and Duberstein, 2019	financial strain	"Lacking the financial resources necessary to meet basic needs" (p. 454)	Scale developed by Friedman, Conwell, and Delavan (2007)	No	Face validity	X	100% of items
Perry-Rivers, 2014	economic adversity	No conceptual definition provided by authors	Coded as recession and non-recession years	No	Face validity	X	Single recession item
Prawitz et al., 2006	financial distress	"The construct encompassing perceptions about financial well-being and stress about one's financial condition" (p. 36)	IFDFW	Yes	Established construct and criterion validity	X	100% of items
Price, Choi, and Vinokur, 2002	financial strain	No conceptual definition provided by authors	Scale developed by Vinokur and Caplan (1987)	No	Face validity	X	100% of items

Starrin, Åslund, Nilsson, 2009	financial stress/ hardship/ strain/ vulnerability/ deprivation	"Problems that arise when a person is faced with the threat of a shortage of money in combination with a lack of cash reserves and difficulties making ends meet" (p. 285)	Finances-Shame Model	Yes	Face validity	financial stress items	financial shame items
Tormos, 2019	economic hardship	No conceptual definition provided by authors	Used five items to assess conditions, consequences, and distress caused by economic hardship	Yes	Face validity	100% of items	X
Vinokur and Caplan, 1987	economic hardship	No conceptual definition provided by authors	Used three items to obtain score.	Yes	Face validity	X	100% of items
Viseu, Leal, Neves de Jesus, Pinto, Pechorro, and Greenglass, 2018	economic hardship/ economic stress factors	Economic stress factors described as economic hardship, financial threat, and financial well-being. No further conceptual definitions provided by authors.	Economic hardship questionnaire (EHQ; Leal et al., 2014) and financial threat scale (FTS; Marjanovic et al., 2013).	No		X	100% of items
Wharton, 2007	financial stress	No conceptual definition provided by author	Financial Wellness Survey	Yes	Criterion validity measured with PCA	roughly 65% of items	roughly 35% of items
Zagorsky, 2007	financial distress	"Living beyond one's means" (p. 492)	Used three items to obtain score.	Yes	Face validity	100% of items	X
Zheng, Xu, Xu, Yang, Gu, and Wang, 2019	financial strain/ financial difficulties/ economic hardship	Defined financial strain as "lack of financial resources to meet family needs, due to low income, job loss, temporary or chronic unemployment" (p. 5, cited Glei, Goldman, and Weinstein, 2018). Defined perceived financial strain as "self-assessed or perceived financial difficulties and unemployment circumstances" (p. 7, cited Glei et al., 2018).	Perceived financial strain assessed through seven items about lack of funds and high cost of living. Financial strain assessed with two items about income and unemployment.	Yes	Face validity	Financial strain items	Perceived financial strain items

Economic hardship, for example, was discussed in 5 studies out of 37, but only one provided a definition as follows: "Cognitive appraisal that income is insufficient to provide necessities for living, behaviors that reflect efforts to adjust to inadequate income, and affect that takes the form of despair and hopelessness that one's economic future will be bright" (Barrera, Caples, & Tein, 2001). *Financial distress*, was discussed in 8 studies with 7 of these providing the following definitions: "Situations in which the household remains susceptible to any deviation of income from its ex-ante expectation" (Athreya et al., 2017); "The extent to which households consider unsecured debt to be a burden" (Del R ó & Young, 2005); "A reaction, such as mental or physical discomfort, to stress about one's state of general financial well being" (Hamid & Abdullah, 2009); "A situation where individuals report that they are having some degree of difficulty keeping up with their bills and credit commitments" (McCarthy, 2011), etc. *Economic deprivation* was not defined in any of the 37 selected articles.

Financial strain was discussed in 11 studies out of 37 and definitions were provided in 7 studies out of 11. Definitions ranged from "Composed of the cognitive, emotional, and behavioral response to the experience of financial hardship" (Aldana & Liljenquist 1998); "Subjective experience of his/her financial situation" (Grossi, Perski, Lundberg, & Soares, 2001); "perceived financial inadequacy" (Glei, Goldman, and Weinstein, 2018); "Difficulty meeting financial needs and obligations" (Kalkhoran, Berkowitz, Rigotti, & Baggett, 2018); "Lacking the financial resources necessary to meet basic needs" (Perry et al., 2019); and "self-assessed or perceived financial difficulties and unemployment circumstances" (Zheng et al., 2019).

Economic strain was mentioned in two studies and both provided definitions as follows: "Difficulties meeting basic needs, and difficulties acquiring non-necessary, but desired items" (Pearlin, Lieberman, Menaghan, & Mullin, 1981) and "an individual's perception of financial inadequacy as well as her/his concerns and worries" (Mills et al., 1992 citing Voydanoff, 1990).

4.2 Scales

We observed a large variety of scales used in our sample. For example, two studies developed new scales for *economic hardship* based on previous scales (Barrera et al., 2001; Vinokur & Caplan, 1987). Another assessed difficulty meeting basic needs (i.e., hunger and rent/mortgage problems) during childhood and frequency of difficulty (Braveman et al., 2018); another used five items to assess conditions, consequences, and distress caused by economic hardship (Tormos 2019), and yet another used the economic hardship questionnaire (EHQ; by Leal et al., 2014) (Viseu et al., 2018). For *financial distress*, studies used Equifax data (no scale) (Athreya et al., 2017); one study used measures adapted from a previous scale (Bhargava et al., 2018; Zagorsky, 2007); one used debt to asset ratio (Bultena, Lasley, & Geller, 1986); and several used various scales such as the Part of the British Household Panel Survey (BHPS) (Del R ó & Young, 2005), Satisfaction on Their Financial Situation and

Causes of Financial Problems (Hamid & Abdullah, 2009), or the Financial Capability Survey (McCarthy, 2011). In total, 20 new scales were developed, whereas seven were measures adapted from previous studies.

4.3 Validation of Assessment Tools for Personal Negative Financial Health

Most self-reporting measures of personal negative financial health demonstrate face validity: scales appear to measure the latent negative financial construct they are being used to measure (Kaplan & Saccuzzo, 2017). However, face validity does not empirically support assertions that a scale is useful or meaningful to the underlying construct. Of the 37 papers included for analysis of their conceptual and operational definitions, only six demonstrated an additional validity test (see Table 3; i.e., Aldana & Liljenquist, 1998; Barrera et al., 2001; Kiely, Leach, Olesen, & Butterworth, 2015; Latsou & Geitona, 2018; Prawitz et al., 2006; Wharton, 2007). Of those studies, four provided empirical evidence of validity, through construct and/or criterion validity. One study indicated that the assessment tool was previously validated, and the final study provided supplementary non-empirical evidence of validity by correlating measures scores with socioeconomic status (Latsou & Geitona, 2018). Although discriminant validity is heralded as the best way to prevent construct proliferation (Shaffer, DeGeest, & Li, 2016), none of the articles that tested validity reported discriminant validity.

4.4 Assessing and Conceptualizing Personal Negative Financial Health Terms

In the following, objective and subjective measures are further reviewed, with an emphasis on how negative financial health terms have been objectively and subjectively measured and validated.

4.4.1 Objective Measures

Objective measures of financial distress describe financial behaviors wherein people have difficulty maintaining their financial obligations, as evidenced by an accumulation of credit arrears or running out of money (McCarthy, 2011). Financial stress has similarly been conceptualized as one's chronic inability to maintain a basic standard of living (Åslund, Larm, Starrin, & Nilsson, 2014), or problems arising from one's lack of funds to meet financial obligations and their failure to save additional funds (Starrin, Åslund, & Nilsson, 2009). Starrin et al. (2009) operationalized financial stress as one's frequency of difficulty in meeting monthly financial obligations during the past three months; one's frequency of raising additional funds through (a) borrowing money, (b) pawning items, (c) selling items, or (d) applying for welfare during the past three months; one's frequency of limiting or refraining from extraneous purchases of (a) food, (b) clothing, or (c) vacations; and one's inability to accrue additional emergency funds. Financial stress has been similarly operationalized by participants indicating which personal stressors (e.g., job change, wage decrease, injury), family events (e.g., divorce, marriage, birth of a child), and financial stress circumstances (e.g., house foreclosure, vehicle repossession, excessive consumer debt) contributed to their experience of financial stress (Wharton, 2007). Debt-to-asset ratios may also be used to operationalize financial distress (Bultena et al., 1986). For example, someone who experiences cash flow problems, or consistently has greater debts than assets, would be more likely to experience financial distress. Through comparison of objective measures and the conceptual definitions provided for financial distress and financial stress, it is evident that these terms have been similarly described in scholarly literature.

Objective measures typically favor the terminology *financial distress* and *financial stress* when describing negative financial behaviors; however, *financial hardship* and *financial strain* have also been used as substitutes. For example, financial hardship may be indicated by unemployment, cutting back expenses, being without meals, and asking for financial help (reviewed in Park et al., 2017). Economic hardship may also be operationalized through high debt-to-asset ratios, large reductions in family income, or income below the poverty line (Davis & Mantler, 2004). Although financial strain and financial hardship are defined analogously to financial stress and distress, they are more commonly assessed through subjective assessments rather than objective measures (e.g., Aldana & Liljenquist, 1998; Gutman, McLoyd, & Tokoyawa, 2005; Vinokur & Caplan, 1987).

4.4.2 Subjective Assessments

When referring to negative financial health behaviors, subjective measures are used more frequently than objective measures. The predisposition to use subjective assessments stems from a greater ability to gauge perceived financial needs, and the standardization of subjective measures (Barrera et al., 2001). Subjective assessments typically recognize that two people may experience different reactions to potential financial stressors; therefore, it may be more important to ask participants about the amount of distress they felt than the quantity of possible financial stressors they experienced. Subjective measures have also been favored because they address whether financial stress arises from a disparity between one's financial needs and their financial resources (Barrera et al., 2001).

Subjective assessments inquire about experiences of perceived financial stress. For example, financial distress is

operationalized as the magnitude of burden, or the amount of distress one experiences because of their unsecured debt (Del-Río & Young, 2005). Moreover, since diverse financial conditions only produce financial distress under certain circumstances (Joo, 1998), it is possible for certain negative financial situations may not produce financial distress for certain people. Different opinions also exist on whether financial distress arises after long-term exposure to financial stressors (Prawitz et al., 2006) and whether it can be experienced both briefly or persistently (O'Neill et al., 2006). Depending on the circumstances encountered, and measurement items used, it is possible for someone to objectively appear to be financially distressed in the absence of subjective financial distress. Similarly, it is possible for someone to be subjectively financially distressed while not objectively appearing to be financially distressed.

While objective definitions of financial hardship and financial strain are analogous with financial distress, subjective operationalizations appear more disparate. Most definitions of financial distress and financial stress focus on the present and present circumstances, financial hardship and financial strain may refer to more transient experiences that are currently experienced, or may be experienced in the future (e.g., Hamid & Abdullah, 2009; O'Neill et al., 2006; Price, Choi, & Vinokur 2002). Financial strain has been conceptualized as an inability to manage income and maintain savings, pay bills, repay debt, and have excess finances to cover desired expenditures (Hamid & Abdullah, 2009; O'Neill et al., 2006). Financial strain has also been operationalized as one's perception of current and future difficulties in using personal income to meet financial responsibilities (Price et al., 2002). However, aside from temporal differences between definitions of financial distress and financial strain, differences in the subjective assessments of financial distress terminology appear negligible.

4.4.3 Objective and Subjective Assessments

The combination of both objective and subjective assessments should result in a more comprehensive understanding of financial distress, than either assessment type provides alone. For example, Åslund and colleagues (2014) reduced and modified Starrin and colleagues' (2009) operationalization of financial stress. The new conceptualization referred to financial stress as the degree of difficulty in meeting monthly financial obligations during the previous year, and an inability to accrue additional emergency funds. Financial distress was also operationalized as perceptions of current and previous experiences of financial stress, and whether respondents had a history of bankruptcy (Zagorsky, 2007). Similarly, financial strain was operationalized as the inability to afford a suitable home, furnishings, car, food, medical care, clothing, and recreational activities; the degree of difficulty in meeting financial obligations; and the financial resources available after paying monthly financial expenses (Grossi et al., 2001). These examples of combined objective and subjective assessments analyze objective factors of how often something occurred, in conjunction with the perceived extent or degree of difficulty the individual felt.

Other conceptualizations of financial distress describe objective assessments of income or debts, and perceptions of income deprivation or worry. For example, one study utilized the lowest personal income quartile in conjunction with assessments of perceived income deprivation (Bradshaw & Ellison, 2010). Another study defined financial hardship as one's perceived difficulty paying monthly bills, the amount of debt they accrued when trying to pay monthly bills, and whether they received government assistance (Park et al., 2017). Financial hardship was also conceptualized as the combination of cash flow deficits and perceptions of financial deprivation (Kiely et al., 2015). Thus, the combination of objective and subjective measures enables researchers to differentiate between groups of people with different levels of financial resources and different levels of severity (e.g., Kiely et al., 2015).

5. Discussion

Financial behaviors are studied by disparate disciplines, posing potential problems and benefits to academics and practitioners. Collaboration and integration between academic disciplines and practitioners has been prompted by the need for practical problem-solving (Hadorn, Pohl, & Bammer, 2010). Given that different perspectives increase understanding and resolution of complex problems, interdisciplinary and transdisciplinary research are increasingly popularized as solutions to integration problems (Klein, 1990; 1996; 2010). The largest obstacle to integrated research is construct proliferation (Klein, 1990; 1996). Although multidisciplinary juxtaposes theoretical and conceptual practices between disciplines, it does not prescribe a course of best action (Klein, 2010). Moreover, because of the disparity between negative financial health terminology, integration is needed to clarify and unify existing concepts. We recommend the following for researchers, practitioners, and individuals conducting transdisciplinary work.

Recommendation 1. Where possible, authors should provide consistent conceptual and operational definitions of

negative financial health constructs. They should seek to identify and clearly communicate relevant synonyms in their research, especially when researchers prefer a negative financial health term that differs from the term used in their operational definition. Merely providing information on the operationalization of the term or the measure that researchers will use is insufficient for communicating their understanding of the term (e.g., Dumont & Wilson, 1967; Hempel, 1965; Lester & Lester Jr., 2015).

Recommendation 2. Researchers should provide synonymous terms as keywords when publishing research on negative financial constructs. Evidence in biological studies suggests that the use of synonymous terms, such as an organism's scientific and common names, substantially increase the yield of extant scientific information (e.g., Guala, 2016). In their study, Guala (2016) found the yield substantially increased with the inclusion of one additional synonym. Based on their prevalence across databases, we recommend including *economic hardship* and *financial strain* as keywords. Researchers may also choose to utilize related discipline-specific keywords instead.

Recommendation 3. Researchers developing new measures of negative financial health constructs should assess and report discriminant validity. Scale validity is an important aspect of communicating how a measurement instrument accurately assesses financial health (Kimberlin & Winterstein, 2008). Reporting measures of validity, especially discriminant validity, serve to increase scientific rigour and reduce construct proliferation (Kimberlin & Winterstein, 2008; Shaffer et al., 2016). Scale developers should strive for and report more rigorous indicators of validity than face validity. Moreover, when researchers use measurement instruments to study new populations, scale validation should be replicated to ensure the scale is a valid measure of negative financial health within the new population.

Recommendation 4. Researchers, practitioners, and knowledge-mobilizers should communicate information about negative financial health to the public using *financial hardship*, *financial stress*, or *financial distress*. In order to better communicate with the general public, researchers and practitioners should utilize the search terms that members of the public prefer. Within the last five years, an increasing proportion of the global population has searched for information using *financial hardship*, *financial stress*, and/or *financial distress* (Google, 2021). In order to increase the likelihood of connecting with the public in online publications—including open-source journal articles—and social marketing campaigns, researchers, practitioners, and knowledge-mobilizers need to speak the same language and use the same terms that people are engaging with. Based on geographic region, different negative financial health terms would be required to best communicate with the target audience. Practitioners and knowledge-mobilizers should also consider reviewing real time Google Trends data for the relative interest in search terms within their specific target region, as there may be slight regional variations. When optimizing Google ads, practitioners should also consider using these preferred terms to reach a larger audience.

Recommendation 5. Researchers should consider utilizing both objective and subjective indicators of negative financial health. Analysis of negative financial health terminology supports the use of both objective and subjective assessments of personal negative financial health. Utilizing both objective and subjective definitions and measurements affords unique information that is not captured by a one-dimensional conceptualization of negative financial health. It also may enable better understanding of how people perceive the financial health of those around them, in comparison with their own financial health. Through better understanding of the mechanisms which lead to divergent negative financial health assessments and determining whether and how to reconcile maladaptive assessments of negative financial health, it is possible to thoroughly comprehend the subjective nature of the financial problems people are facing, create financial well-being programs that are more equipped to meet their financial needs, and empirically evaluate the success of such programs.

By reducing or excluding objective measures, it is impossible to segment people and provide specific recommendations based on one's financial situations and how they feel about their financial situation (e.g., Cismaru & Wuth, 2019). This makes it difficult to provide useful knowledge to community partners interested in creating interventions and programming to reduce financial distress. However, since people can experience financial well-being one moment, and poor financial health the next, it is fundamental to understand subjective experiences of negative financial health. People can experience negative financial health even at the highest income levels (e.g., Camerer, 1998), but how they experience negative financial health and the strategies they use to try and improve their financial health may differ based on individual differences. Therefore, when the scope of a study is directly related to the lived experience of negative financial health, researchers should attempt to utilize a combination of objective and subjective indicators of financial distress, and focus on the differential experiences that observe when none, one, or both indicators are present. If it is unfeasible to include both objective and subjective measures, researchers should favor subjective measures of financial distress, which

would capture one's perception of their financial situation rather than just the resources that they do or do not have. The combination of objective and subjective indicators of financial distress will enable various community partners to determine effective interventions and treatments.

6. Limitations and Future Research Directions

Taken together, extant literature and big data suggest many different terms are ascribed to individual experiences of negative financial health. The terms preferred by academics and the public differ substantially, which poses problems for knowledge mobilization. Review of the use of academic terms also suggest that there were historical differences between select negative financial health constructs but these differences have disappeared over time. The results of this study have direct implications for how researchers and practitioners relay information to the general public. The results also suggest discriminant validity is required to determine whether inter-related negative financial health constructs differ substantially at an empirical level and to quantify the extent to which each construct is empirically unique. We look forward to future work that continues to bridge the gap between negative financial health knowledge development and application. Indeed, the present paper has several limitations. Only a limited number of databases were searched and only 14 negative financial health terms were considered. Searches were time-limited to 2019. Further studies could expand the analysis to include other databases such as ABI/INFORM Collection, Academic Search Complete, ArticleFirst and Emerald Fulltext, resulting in new keywords and newer articles. Further analysis of Google search data might also be of interest. For example, when customers purchase ads via Google, they have access to increased search data that shows figures of actual searches conducted for a specific term. Applying this to the success of campaigns to determine whether social marketing campaigns that utilize preferred financial terms are received better than social marketing campaigns that use less common terms could help optimize the information.

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