Challenges to the Conceptualization and Measurement of Resilience in HIV Research

By

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CERTIFICATE OF APPROVAL

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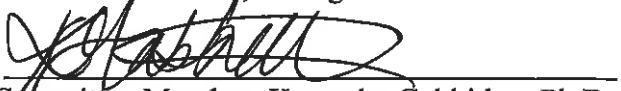

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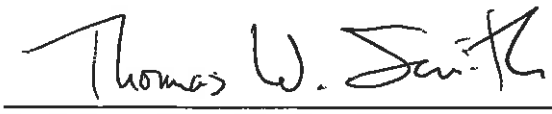

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Abstract

The purpose of this study was to evaluate the conceptualization and measurement of resilience in HIV research. Google Scholar, PsycINFO, and PubMed were searched using terms related to resilience and HIV to identify peer-reviewed research articles. Of the 156 articles identified, only 49 were included in the current analyses. Articles were excluded when they did not include a measure of resilience and/or were not relevant to resilience in the context of HIV. Applied thematic analysis was used to analyze the definitions and measurement of resilience in HIV research. Articles were reviewed independently by two raters to establish inter-rater reliability. Six recurring themes were identified in the definitions of resilience in HIV research: adaptation, positive mental health symptoms, the absence of negative mental health symptoms, hardiness, coping, and the ability to "bounce back." The majority of definitions included adaption. Among the articles examined, 14 different measures were used to assess resilience. Half of these were direct measures of resilience and half were indirect measures. These findings have important implications for interpreting the available literature on resilience and HIV and for future research in this area.

Chapter 1

Statement of the Problem

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As focus on resilience has increased in recent years, it has become a construct of interest in health research. Resilience is used and discussed in a number of ways across a wide-span of academic disciplines. Given the diverse contexts in which it can be applied, it is understandable that resilience varies in its definition and measurement, yet even in the context of psychological research, the term is often flexible and inconsistent. The manner in which resilience is defined and conceptualized changes from study to study. The most common definitions of resilience identify it as a critical component of adaptation and positive mental health outcomes, particularly in response to hardships and significant adversity. While similarities and common themes exist, discrepancies in the definitions and conceptualizations of resilience can lead to much confusion, as well as error in measurement. Even where commonalities of resilience can be identified, many researchers still fail to address the mechanisms through which the process of resilience actually occurs (Garcia-Dia, DiNapoli, Garcia-Ona, Jakubowksi, & O'Flaherty, 2013).

Resilience is an increasingly common focus in HIV research. People living with or affected by HIV disproportionately suffer from a number of health and mental health disparities (Whetten, Reif, Whetten, & Murphy-McMillan, 2008). Resilience can serve as a buffer to negative mental health outcomes, and researchers strive to learn more about its role in promoting the health and mental health of people living with or affected by HIV. Unfortunately, like in other areas, there are challenges to the conceptualization and measurement of resilience in HIV research. Some HIV research studies define and conceptualize resilience as a single trait, while

others break it down into individual components such as hardiness, effective coping, and positive adaptation (e.g., Kobasa, 1979; Tugade & Frederikson, 2004; Kurtz, Buttram, Surratt, & Stall 2012). Furthermore, in an annual review of research on mental health and resilience in children with HIV or AIDS, many studies used resilience measures considered to be of low quality (Betancourt, Meyers-Ohki, Charrow, & Hansen, 2013). Understanding how resilience is defined and measured is important for interpreting the findings published in the literature and for moving toward the creation of a standardized definition of resilience and best practices in its measurement.

Purpose of Study

The purpose of this study was to identify challenges to the conceptualization and measurement of resilience in HIV research. Specifically, this exploratory study sought to answer the following questions: (1) How is resilience defined in the existing HIV literature? and (2) How is resilience measured in the existing HIV literature?

Chapter 2

Review of the Literature

HIV Incidence and Prevalence

Much progress has been made in the prevention and treatment of HIV, yet it is still prevalent worldwide. According to the Joint United Nations Programme on HIV/AIDS (2017), approximately 37 million people were living with HIV in 2016. UNAIDS (2017) also reported that, while the rate of new infections have been in significant decline worldwide (47% decrease in new cases of HIV affected children; 11% decrease in new cases of HIV affected adults since 2010), the rate of new infections is still immense, with 1.8 million new cases of HIV in 2016 alone (UNAIDS, 2017).

Beyond the physical health concerns associated with HIV, there are a wide range of adverse mental health outcomes and implications. A bi-directional relationship has been found between HIV and mental health concerns, whereby poor mental health is often associated with the experience of living with HIV, and poor mental health contributes to maladaptive behavioral patterns that result in an increased risk for HIV (Betancourt et al., 2013). A clear understanding of what resilience is and how it is achieved, particularly as it concerns people living with HIV, might assist with both HIV prevention and the promotion of positive mental health outcomes (Munro & Edward, 2008).

Resilience

Resilience in mental health research. When the term resilience is used in the context of mental health research, it most often refers to psychological resilience as opposed to more biological conceptualizations. Research suggests there are number of factors, both internal and external, that influence resilience. Historically, studies of resilience focused their attention on the

"cumulative factors approach" (Garcia-Dia et al., 2013), which emphasized individual characteristics, the environmental context, and underlying processes to explain positive adaptation in response to adversity (De Santis, Florom-Smith, Vermeesch, Barroso, & DeLeon, 2013). More recent research on resilience suggests that a better alternative might be the process approach (Ungar, 2011). The process approach is derived from a person-environment perspective (De Santis et al., 2013) and proposes that resilience research should focus more on social and physical ecology (Ungar, 2011). In a summary of the Project Competence Longitudinal Study which contributed a number of important findings to resilience research, Masten and Tellegen (2012) reported that socioeconomic resources, social support (both within and outside the family unit), motivation, cognitive capacity, flexibility of mindset, and self-esteem were critical factors that influence the development of resilience. Social support has also been associated with reduced delinquent behavior, fewer symptoms of PTSD in trauma victims, and lower rates of other negative mental health outcomes (Zhao et al., 2011; Cluver, Fincham, and Seedat, 2009).

Resilience in HIV research. Although definitions vary, in its most basic conceptualization, resilience is defined in the HIV literature as positive adaptation to adversity (e.g., de Araujo, Teva, Quero, Reyes, & de la Paz Bermudez, 2017; Fang et al., 2015; Emlet, Tozay, & Ravels, 2011). In a literature review conducted by Betancourt et al. (2013) examining the concept or resilience in children affected by HIV, three distinct factors related to resilience emerged: individual factors, family factors, and community/cultural factors. Listed among the most critical individual factors of resilience were coping self-efficacy as opposed to passive coping, the latter of which is correlated with heightened rates of depression and other negative mental health outcomes self-esteem (Orban et al., 2010), and hope for the future (Betancourt et al., 2013). At the family level, high parental monitoring, positive attachment, and positive family

functioning were associated with higher rates of resilience (Betancourt et al., 2013). The analysis of factors at the community/cultural level identified access to education/information and protective social supports at the community, family, and peer levels as critical components of resilience (Betancourt et al., 2013). These findings are consistent with the Project Competence Longitudinal Study described above (Masten & Tellegen, 2012).

Resilience and its underlying mechanisms are particularly relevant to people living with HIV. The advanced treatment options for people living with HIV have made it a much more manageable disease. Despite the advanced treatment and better health outcomes, people living with HIV still face many adversities that often negatively affect their mental and physical health. For instance, HIV-related stigma is a well-known contributor to negative mental health outcomes (Vanable, Carey, Blair, & Littlewood, 2006). People living with HIV may suffer from both projected and internalized stigma, which can affect HIV disclosure to others as well as medication adherence and retention in care. Failure to disclose an HIV diagnosis often interferes with the ability to access educational, health, and mental health resources that are vital to overall health, including mental health (Betancourt et al., 2013; Daniel et al., 2007).

Resilience in the context of HIV research is made even more relevant when its syndemic and intersectional nature is considered. HIV disproportionately affects marginalized populations such as people who abuse substances, men who have sex with men (MSM), and Black men (El-Sadr, Mayer, & Hodder, 2010). For instance, some urban areas of the United States have an HIV prevalence rate as high as 30% among MSM populations (El-Sadr et al., 2010). Perhaps the most concerning disparity is the prevalence of HIV among economically disadvantaged Black men, who are not only more likely to have HIV than their White counterparts but are also less likely to know it (El-Sadr et al., 2010). The implications of such disparities are exacerbated by the fact

that often times the most vulnerable populations do not have access to programs and resources that serve as protective barriers and treatments (Earnshaw, Bogart, Dovidio, & Williams, 2013).

An important precursor of resilience not often considered in the research is the way in which the onset of the adverse conditions, in this case, the onset of HIV, occur. There are two ways in which HIV is acquired: perinatally (mother-to-child) and behaviorally (e.g., risky sexual behavior, injection drug use). HIV infection is most often acquired through risky sexual behavior and/or substance use—the unique characteristics inherent to the acquisition of HIV infection makes this disease more susceptible to social stigma and may present more challenges to the development of resilience than what is common among other diseases (De Santis et al., 2013). This seems to suggest that the experience and manifestations of many factors critical to the development of resilience, such as stigma, internalized stigma, and perceived social support may differ depending on the mode of HIV acquisition (De Santis et al., 2013) The failure to properly acknowledge the difference between conditions of acquisition, combined with an underdeveloped understanding of whether the underlying mechanisms of resilience differ depending on the person's experience of onset, threatens the opportunity for the development and promotion of resilience in populations that are responding to different types of adverse conditions.

Challenges in Resilience Conceptualization and Measurement

While adaptation to adverse conditions is a common thread among the varying definitions of resilience, many definitions provided in the research have unclear wording and/or add additional qualifying components that can make it difficult to compare resilience findings among studies. For instance, many studies also include coping (Yu et al., 2009), hardiness (Farber, Schwartz, Schaper, Moonen, & McDaniel, 2000), "ability to bounce back" (Ebersöhn & Ferreira,

2011; Lyons & Heywood, 2016), the presence of positive mental health outcomes (Ebersöhn, Eloff, Finestone, Van Dullemen, Sikkema, & Forsyth, 2012), and/or the absence of negative mental health outcomes (Wells, 2009) in their definitions of resilience. Due to the fact that existing definitions fail to address the underlying mechanisms through which the process of resilience occurs, it is hard to compare the construct of resilience from study to study.

Additionally, most of the research on resilience has been conducted in samples of children, leading to the application of results being generalized to adult populations. The process by which resilience is cultivated as well as the manner in which resilience manifests itself likely differs between children and adults. The level at which resilience is investigated also contributes to potential problems: older studies focus on resilience at an individual and environmental level, whereas newer studies are conceptualizing resilience as a more integrative process—some are even beginning to utilize new technologies and include neuroplasticity in the discussion of resilience (Garcia-Dia et al., 2013).

The differences in the way resilience is defined leads to equally, if not more problematic, issues concerning differences in the way it is measured. Researchers who define resilience as a list of factors also tend to measure resilience with several different measures, each testing for an individual component of resilience. Researchers who define resilience in a more straightforward manner tend to use instruments designed specifically to measure resilience. Whether resilience is measured directly or indirectly, there are a number of different instruments that are used, leaving much room for error when interpreting and comparing findings between studies.

Chapter 3

Methods

Procedure

Journal articles focused on resilience in HIV research were located by searching the following terms in Google Scholar, PsycINFO, and PubMed: "HIV" combined with "Resilience Scale," "Resilience Questionnaire," "Resilience Measure," and "Resilience Survey." No publication date restrictions were applied. The first 50 articles that appeared under each database for each set of search terms were reviewed. Duplicate articles were eliminated. Articles that described how resilience was defined or measured were included. Articles were excluded if they did not include a clear measure of resilience, did not look at resilience in the context of HIV research, or could not be accessed due to university library restrictions.

Data Analysis

Applied thematic analysis (Guest, MacQueen, & Namey, 2011) was used to identify themes when examining the definitions of resilience identified in the literature. Specifically, terms that were listed most frequently in the definitions of resilience were identified as themes. The six themes identified included: "adaptation," "positive mental health," "absence of negative mental health," "hardiness," "coping," and "the ability to bounce back." To establish interrater reliability and ensure the validity of coding results, all articles were reviewed by two independent raters. Where inconsistencies existed, consensus was achieved through review and discussion with a third independent rater. Percentage agreement between raters was 92.3%, which is higher than the 70% threshold recommended by Multon (2010). A similar process was used to examine measures of resilience using two themes: "indirect measures of resilience" and "direct measures of resilience."

Chapter 4

Results

Literature Search

A total of 156 articles were identified using the search terms described above. Of the 156 total articles, only 49 were included in the analysis (see Table 1).

Resilience Definitions

Of the 49 articles examined, nine were excluded from the analysis because they did not include a specific definition of resilience, and two were excluded because they had definitions that did not fit within any of the themes identified. Of the 38 remaining, 31 included adaptation in the definition, 5 included positive mental health symptoms, 2 included the absence of negative mental health symptoms, 1 included hardiness, 8 included coping, and 7 included the ability to "bounce back" (See Table 2).

Resilience Measurement

Of the 49 articles examined, resilience was measured in 48 (98%), and a total of 14 measures were identified. Of these, 7 (50%) qualified as direct measures of resilience and 7 (50%) qualified as indirect measures of resilience. Examples of direct measures of resilience included the Connor-Davidson Resilience Scale and the Dispositional Resilience Scale. Examples of indirect measures of resilience included the Brief COPE Scale and the Coping Self-Efficacy Scale. See Table 4 for a complete list of resilience measures.

Chapter 5

Discussion

The primary goal of this exploratory study was to identify and better understand the measurement and conceptualization of resilience within HIV research. Findings revealed variations in how resilience is defined and measured in HIV research, which poses problems for interpreting and making use of the available research in this area.

Challenges in the Definition of Resilience in HIV Research

Results from this study provide evidence of varying definitions of resilience in HIV research. Most of the articles reviewed in this study included adaptation in their definition of resilience. However, others also included mental health symptoms (positive or negative), hardiness, coping, and the ability to "bounce back" in their definitions. It is important to note that some of the terminology used within the definitions were also ambiguous. For instance, the terms positive mental health and the ability to "bounce back" both have varying definitions and/or implications in psychological research. Beyond inconsistency in definitions, discussions of resilience in the literature are often muddied with other terminology that makes it difficult to clearly separate one term from another (e.g., "adaptation" versus "positive adaptation" or "the ability to bounce back"). Worse yet, some articles that discuss resilience or aspects of the construct fail to define it at all (e.g., Farber et al., 2000). Finally, while most definitions of resilience include the fact that a response to "hardship" or "adverse life experiences" are a primary component, they fail to take into account if and how different kinds of hardships affect the process. These inconsistencies make it difficult to make sense of findings related to resilience in HIV research.

Challenges in the Measurement of Resilience in HIV Research

Current findings reveal wide variations in how resilience is measured in the HIV literature. In this study, 14 different measures were used, either alone or combined with one another, to measure resilience. Additionally, this study found that only 50% of the measures directly measured resilience, while the other 50% measured resilience indirectly. Given the varying definitions of resilience, it is hard to say whether the method of measurement used in one study can be compared to the method of measurement in another. If the methods and scales of measurement cannot be appropriately compared, neither can findings. This can lead to much unnecessary confusion, confound our understanding of resilience in HIV research, and ultimately obstruct the development of programs that would help promote resilience in vulnerable populations.

Although there are serious inconsistencies in the manner in which resilience is measured from study to study, perhaps more important is the reliability and consistency of the measures being used. After reviewing nineteen resilience scales in their study, Windle, Bennett, and Noyes (2011) identified the Resilience Scale for Adults, the Brief Resilience Scale, and the Connor-Davidson Resilience Scale as having the strongest psychometric ratings. In the current study, the Connor-Davidson Resilience Scale was used as a measure of resilience 23 times, the Resilience Scale for Adults was used three times, and the Brief Resilience Scale was used once, which accounts for 53% of the total number of measures used.

Conclusions

Current findings reveal challenges to the conceptualization and measurement of resilience in HIV research. In addition to concerns about how resilience is defined and measured, much of the literature focusing on resilience in HIV research has been conducted using child and

adolescent populations. Research also is needed to examine resilience in adult populations living with HIV. While HIV widely affects youth, most people living with HIV are adults (Centers for Disease Control and Prevention [CDC], 2017). Additionally, the construct of resilience, and the theoretical frameworks through which it is understood, is based on research that is somewhat dated. Many studies in the existing literature suggest a reconceptualization of resilience may be needed and beneficial for the creation of a more thoroughly defined, understood, and agreed upon construct.

Limitations

The existing literature may be more comprehensive than what is accounted for in this analysis. In this study, only the first 50 results that appeared for each set of search terms was examined. Additionally, only HIV, and not AIDS, was included in the search terms. This may have resulted in the omission of relevant journal articles. Applied thematic analysis is a qualitative method, and one weakness of qualitative methods is subjectivity. Although inter-rater reliability was computed in an effort to account for this limitation, it is possible that the identification of themes and coding rubrics was biased in some way.

Future Directions

It is important for researchers to be aware of the ambiguity that exists around the definition and measurement of the construct of resilience in HIV research. Explicit descriptions of how resilience is operationalized and measured should be included in HIV studies assessing this construct. Similarly, consumers of HIV resilience research should attend to the ways in which resilience is defined and measured when interpreting and attempting to use the existing literature. Future research is needed to examine the underlying mechanisms of how resilience develops, particularly in HIV research.

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Table 1. Search Term Results

Search Terms	Number of articles identified	Number of articles included	Number of articles excluded
"HIV" + "Resilience Scale"	91	44	47
"HIV" + "Resilience Questionnaire"	57	19	38
"HIV" + "Resilience Measure"	56	19	37
"HIV" + "Resilience Survey"	52	16	36
Total	**256**	**98**	**158**

Note. Of the 256 search term hits, 102 were duplicates, and 105 were excluded resulting in a N of 49 for data analysis.

Table 2. Articles used for definition and measurement analyses

Author (Year) n = 49	**Used in definition Analysis** n = 40	**Used in measurement Analysis** n = 48
Asante, Meyer-Weitz, & Petersen (2015)		X
Blais et al., (2014)		X
Blais et al., (2015)		X
Chaudhury et al., (2016)		X
Chi et al., (2015)	X	X
Chi et al., (2016)	X	X
Dageid & Gronlie (2015a)	X	X
Dageid & Grønlie (2015b)	X	X
Dale et al., (2014a)	X	X
Dale et al., (2014b)	X	X
Dale et al., (2015)	X	X
de Araújo, Teva, Quero, Reyes, & de la Paz Bermúdez (2017)	X	X
De Santis, Florom-Smith, Vermeesch, Barroso, & DeLeon 2013)	X	

Author (Year) n = 49	**Used in definition Analysis** n = 40	**Used in measurement Analysis** n = 48
Dutra et al., (2000)	X	X
Ebersöhn & Ferreira (2011)	X	X
Ebersöhn et al., (2012)	X	X
Eloff et al., (2014)	X	X
Emlet, Shiu, Kim, & Fredriksen-Goldsen (2017)	X	X
Emlet, Tozay, & Ravels (2011)	X	X
Fang, et al., (2015)	X	X
Farber, Schwartz, Schaper, Moonen, & McDaniel (2000)	X	X
Garrido-Hernansaiz, & Alonso-Tapia (2017)	X	X
Grønlie & Dageid (2017)	X	X
Harper et al., (2013)		X
Hussen et al., (2017)	X	X
Kelly et al., (2013)		X
King & Orel (2012)	X	X

Author (Year) n = 49	**Used in definition Analysis** n = 40	**Used in measurement Analysis** n = 48
Kurtz, Buttram, Surratt, & Stall (2012)	X	X
Li, Harrison, Fairchild, Chi, Zhao & Zhao (2017)	X	X
Lyons & Heywood (2016)	X	X
Lyons, Heywood, & Rozbroj (2016)	X	X
Mo, Lau, Yu, & Gu (2014)	X	X
Moore et al., (2013)		X
Murphy & Hevey (2013)	X	X
Nombo & Niehof (2008)	X	X
O'Leary, Jemmott, Stevens, Rutledge, & Icard (2014)		X
Peterson et al., (2014)	X	X
Quinn et al., (2015)	X	X
Rzeszutek, Oniszczenko, & Firląg-Burkacka (2017)	X	X

Author (Year) n = 49	**Used in definition Analysis** n = 40	**Used in measurement Analysis** n = 48
Sauceda, Wiebe, & Simoni (2016)	X	X
Spies & Seedat (2014)	X	X
Wells (2009)	X	X
Wild, Flisher, & Robertson (2013)	X	X
Yu et al., (2009)	X	X
Yu, Chan, Zhang, & Stewart (2016)		X
Yu, Lau, Mak, Cheng, Lv, & Zhang (2014)	X	X
Yu, Zhang, Chow, Chan, & Chan (2017)	X	X
Zhang et al., (2015)	X	X
Zhao, Chi, Li, Tam, & Zhao (2014)	X	X

Table 3. Definitions of Resilience

Author (year) n = 49	**Adaptiveness** n = 31	**Positive mental health symptoms** n = 5	**Absence of negative mental health symptoms** n = 3	**Hardiness** n = 1	**Coping** n = 8	**Ability to "bounce back"** n = 7
Asante, Meyer-Weitz, & Petersen (2015)						
Blais et al., (2014)						
Blais et al., (2015)						
Chaudhury et al., (2016)						
Chi et al., (2015)	X					
Chi et al., (2016)	X				X	
Dageid & Gronlie (2015a)	X					X
Dageid & Gronlie (2015b)	X	X				
Dale et al., (2014a)	X				X	
Dale et al., (2014b)		X				
Dale et al., (2015)	X				X	

Author (year) n = 49	**Adaptiveness** n = 31	**Positive mental health symptoms** n = 5	**Absence of negative mental health symptoms** n = 3	**Hardiness** n = 1	**Coping** n = 8	**Ability to "bounce back"** n = 7
de Araújo, Teva, Quero, Reyes, & de la Paz Bermúdez (2017)	X					
De Santis, Florom-Smith, Vermeesch, Barroso, & DeLeon 2013)	X					
Dutra et al., (2000)	X					
Ebersöhn & Ferreira (2011)						X
Ebersöhn et al., (2012)	X	X				
Eloff et al., (2014)	X					
Emlet, Shiu, Kim, & Fredriksen-Goldsen (2017)	X					
Emlet, Tozay, & Ravels (2011)	X				X	
Fang et al., (2013)	X					
Farber, Schwartz, Schaper, Moonen, & McDaniel (2000)				X	X	

Author (year) n = 49	**Adaptiveness** n = 31	**Positive mental health symptoms** n = 5	**Absence of negative mental health symptoms** n = 3	**Hardiness** n = 1	**Coping** n = 8	**Ability to "bounce back"** n = 7
Garrido-Hernansaiz, & Alonso-Tapia (2017)	X					
Grønlie & Dageid (2017)	X					
Harper et al., (2013)						
Hussen et al., (2017)	X					
Kelly et al., (2013)						
King & Orel (2012)	X					
Kurtz, Buttram, Surratt, & Stall (2012)	X					
Li, Harrison, Fairchild, Chi, Zhao & Zhao (2017)	X					
Lyons & Heywood (2016)						X
Lyons, Heywood, & Rozbroj (2016)	X					X
Mo, Lau, Yu, & Gu (2014)						X
Moore et al., (2013)						

Author (year) n = 49	**Adaptiveness** n = 31	**Positive mental health symptoms** n = 5	**Absence of negative mental health symptoms** n = 3	**Hardiness** n = 1	**Coping** n = 8	**Ability to "bounce back"** n = 7
Murphy & Hevey (2013)		X				
Nombo & Niehof (2008)						X
O'Leary, Jemmott, Stevens, Rutledge, & Icard (2014)						
Peterson et al., (2014)	X		X			
Quinn et al., (2015)	X					
Rzeszutek, Oniszczenko, & Firląg-Burkacka (2017)	X	X				
Sauceda, Wiebe, & Simoni (2016)	X					
Spies & Seedat (2014)	X					X
Wells (2009)	X		X			
Wild, Flisher, & Robertson (2013)						
Yu et al., (2009)	X				X	
Yu, Chan, Zhang, & Stewart (2016)						

Author (year) n = 49	**Adaptiveness** n = 31	**Positive mental health symptoms** n = 5	**Absence of negative mental health symptoms** n = 3	**Hardiness** n = 1	**Coping** n = 8	**Ability to "bounce back"** n = 7
Yu, Lau, Mak, Cheng, Lv, & Zhang (2014)	X				X	
Yu, Zhang, Chow, Chan, & Chan (2017)	X					
Zhang et al., (2015)	X				X	
Zhao, Chi, Li, Tam, & Zhao (2014)						

Note. Nine articles of 49 were excluded because they did not cite a definition of resilience. Two articles were excluded because the definition of resilience provided did not match any of the terms that were coded for. A total of 11 articles out of 49 total articles were not included in the analysis of resilience definitions.

Table 4. Analysis of resilience measurement

Measure	Articles using this measure	Direct Measure	Indirect Measure
Connor-Davidson Resilience Scale (CD-RISC)	23	X	
Composite Measure	7		X
Wagnild & Young Resilience Scale	5	X	
Open-Ended Interview	4		X
Resilience Scale for Adults (RSA)	3	X	
Situated Subjective Resilience Questionnaire for Adults	1	X	
Resiliency Assessment Scale (SPP-25)	1	X	
Brief Resilience Scale	1	X	
Kinetic Family Drawing	1		X
Vineland Adaptive Behavioral Scale (VABS)	1		X
Brief COPE Scale	1		X
Coping Self-Efficacy Scale (CSES)	1		X

Measure	Articles using this measure	Direct Measure	Indirect Measure
Social Engagement Scale	1		X
Dispositional Resilience Scale (DRS)	1	X	

Note. Composite measure is defined here as an amalgamation of factors of resilience that have been measured via a number of different surveys, scales, questionnaires, or individual items form different surveys, scales, and questionnaires.