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When and How to use Multiple Informants to Improve Clinical Assessments

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Abstract Multiple informants - compared to single informants - better inform the clinical assessment and the diagnosis of psychopathology. The Operations Triad Model (OTM; De Los Reyes et al. 2013a) provides researchers with a conceptual framework for integrating information from multiple informants into research settings. We simplified this model by: 1) identifying context and insight as the critical factors necessary for determining if multiple informants improve diagnostic accuracy and 2) providing decision-making heuristics for determining when and how to use multiple informants in clinical research and practice. We focused on how symptoms can vary across situations (i.e., context) and how individuals can lack the awareness to accurately report symptoms (i.e., insight) to improve interpretations of informant discrepancies.

Keywords Multiple informants · Self-report · Discrepancy · Adult assessment

An elderly woman presents at a local clinic with self-reported symptoms of depression. According to her report, the symptoms often become worse when she is alone, at night, in her house (i.e., context sensitive). She cannot recall much of her medical history but admits that she frequently forgets to take her insulin (i.e., poor insight). The woman's daughter is concerned about her mental health and takes the woman to see a psychologist. In this instance, symptom reports from multiple informants would most likely be collected during the assessment process. Unfortunately, there is no clear consensus on

how to best integrate this information. One method recently proposed - the Operations Triad Model (OTM; De Los Reyes et al. 2013a) - provides some guidance; however, the model is complex and perhaps too cumbersome for application. The current paper provides: 1) a synthesis of existing empirical support supporting context and insight as two critical factors to consider when deciding if multiple informants improve diagnostic accuracy and 2) an alternative framework that simplifies the decision-making process for determining when and how to use multiple informants in clinical research and practice.

Relationships between informant sources correlate moderately, leaving room for meaningful discrepancies (Achenbach 2006, 2011). Evidence is accumulating for the benefits of multiple informant-reports and their discrepancies for the assessment of psychopathology (Grucza and Goldberg 2007; Lieberman et al. 2016). Relatively recent meta-analytic means of the correlations between informant sources of adults were .42 for internalizing symptoms, .44 for externalizing symptoms, and .68 for substance use (Achenbach et al. 2005). Additionally, correlations in individual studies ranged between .29 and .56 across the personality disorders and between .29 and .57 for attention-deficit/hyperactivity disorder (Achenbach et al. 2005; Belendiuk et al. 2007; Klonsky et al. 2002). If informants provided the same information, there would be strong correlations (i.e., greater than .70) between the two sources - making informant information redundant and unnecessary (De Los Reyes et al. 2013b; Kraemer et al. 2003). The moderate correlations between multiple informants suggest discrepancies exist between informants and these discrepancies may contain meaningful information. Multiple informants routinely provide incremental validity beyond single report sources (Carlson et al. 2013; Jorm 1996; Klonsky et al. 2002; Samuel 2015; Samuel et al. 2013; Uher et al. 2012; Vazire and Carlson 2011). For example, self-report, informant-report, and clinician interview measures of

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personality pathology each independently predict lifetime episodes of major depressive disorder (Galione and Oltmanns 2013).

Some clinical assessments require multiple informants rather than a single source simply due to the nature of the question (e.g., child abuse) or when poor insight is a part of the clinical syndrome (e.g., dementia or psychosis). Thus, these multiple informants, whether necessary or not, provide more information compared to single sources. Consider the example that opened this paper. An elderly woman whose depressive symptoms vary by time of day or location may be detectable only when multiple informants (i.e., sources) provide contradictory evidence. The contradictory evidence exists because the sources are exposed to the elderly woman's varying behaviors across different contexts.

Our primary aim is to provide a framework that streamlines the decision making process when collecting data from multiple informants - increasing the ease and likelihood of the model being successfully implemented in both research and clinical settings. We present a simplified 2×2 matrix to determine when to use multiple informants based upon the relevance of context and insight to the assessment process. We then present a decision tree that outlines how to interpret multiple informant-reports in regards to context and insight.

Context and Insight

A review of the child assessment literature indicated context and insight may be the driving forces behind the discrepancies between multiple informant-reports (e.g. Smith 2007). Both context and insight are examples of "Diverging Operations" according to the OTM (De Los Reyes et al. 2013a, b) because they create differences between multiple informant-reports that can be meaningfully interpreted by researchers and clinicians. In contrast, "Compensating Operations" are differences between multiple informants attributed to measurement error.

Understanding how context and insight create meaningful differences between report sources requires a clear definition of these terms. Context includes: 1) the physical environment, 2) social environment, and 3) temporal period when behaviors occur. The physical environment is the setting in which behaviors occur, such as home or work. The social environment refers to who is present in a setting and what activities are being performed (e.g. an individual may behave differently than usual at home if their work supervisor is present). Finally, behaviors may be expressed and interpreted differently by individuals depending on the time of day when they occur. For example, an individual may express more irritability in the morning directly after waking. The individual's spouse may exclude the early-morning irritability from the assessments of their partner's overall daily mood. Insight refers to the cognitive availability of the information being

asked of the individual, regardless of whether the individual is self-reporting or reporting on another person. Although many other factors exist, we believe most can be subsumed under context and insight. Consider each factor detailed below.

Context People act differently both between and within different contexts (Clark and Watson 1988; Mischel 1968). A number of competing theoretical models identify different mechanisms of action explaining variability in human behavior. For example, Shoda et al. (1994) proposed that individuals exhibit unique *behavioral signatures* as a result of idiosyncratic *if... then* contingencies, where *if* situation X occurs, *then* the individual will exhibit a specific behavior. In contrast, Fleeson (2001) asserted that – when averaged across different situations – an individual's behaviors form density distributions that represent the within-person expression of underlying personality traits. The density distributions are created by assessing state-dependent behaviors in a variety of different settings. These distributions represent both an individual's average level of a specific behavior and how characteristic that average level is of all the individual's behaviors. The common theme in these theories is the notion that personally meaningful contextual cues – such as the physical environment, social environment, or even time of day – can have a profound influence on behavior (Fleeson 2001; Mischel et al. 2002; Mischel and Shoda 1998; Shoda et al. 1994). For instance, one daily diary study with repeated observations allowed for the individual-level assessment of the relationship between 24 different contextual cues and reported symptoms of stress (Shoda et al. 2013). During this study, the mean stress level for all participants was 6.42 ($SD = 2.38$) on an 11-point scale (0 = "Not at all stressful," 10 = "Extremely stressful"). One participant had a mean stress level of 3.57; indicating below average levels of stress when compared to the other individuals in the study. However, this participant reported above-average levels of stress in situations where she felt excluded or inferior.

Identifying behavioral variability between and within different contexts cannot be achieved using traditional single informant measures such as the Beck Depression Inventory-II (BDI-II; Beck et al. 1996). Single informant measures assess consistency in symptom reports over time. Instructions for the BDI-II require individuals to report on their average levels of symptoms over the previous two weeks across all contexts.

When informants provide information about the same person from different vantage points - because each informant observes the person in a limited number of contexts - the correlation between report sources is often small. In the child literature, Achenbach et al. (1987) found that the average correlation between different informants of the same child (e.g. parents, teachers, trained observers, and clinicians) hovered around .28. Those same correlations improved substantially

when at least two adults observed the same child in the same context ($r = .60$). For example, the average correlation between pairs of teachers was .64, and the correlation between parents rating the same child averaged .59. The higher correlation between informants who interact with a child in similar contexts suggest children express behaviors differently based on their social environment (Achenbach et al. 1987). Similar findings can be found in the adult literature, suggesting that two informants who evaluate the same adult will converge if their observations occur in the same type of situation (De Los Reyes et al. 2013a, b).

The selection of effective informants is critical to enhance the utility of information from multiple informants. Multiple informants can be analogous to satellites orbiting the Earth (Kraemer et al. 2003). Each satellite has a different, but potentially fruitful, perspective; no one satellite can objectively and accurately view the entire Earth. In this manner, multiple satellites are needed to compose a complete picture of the Earth - just as multiple informants are needed to compose a complete picture of an individual. The most accurate triangulation of a specific location on the surface of the Earth is produced by satellites with maximum possible distance between their locations. Thus, when related to context, multiple informants who each observe an individual in different settings would be preferable to multiple informants who observe an individual in similar settings.

Insight Insight is the second critical factor necessary to determine if multiple informants improve diagnostic accuracy. The validity of any single report source relies on an individual's insight into their own or someone else's behavior. Previously, the limited insight associated with specific types of psychopathology made incorporating multiple informant information into clinical assessments a routine practice (Connelly and Ones 2010). For example, when assessing dementia or certain personality disorders, information from multiple informants is used to counteract limitations in symptom reports that result from poor insight. Accurate symptom reporting requires a host of cognitive tasks that include attending to stimuli in the environment, coding information in the brain, recalling memories, evaluating symptoms, and translating judgments into questionnaire responses. Adults with dementia have cognitive limitations that reduce the validity of their self-report, including impaired self-knowledge, memory deficits, and the inability to inhibit inappropriate responses (Hutchinson and Mathias 2007; Mangone et al. 1991; Metzler-Baddeley 2007; Mullen et al. 1996).

Psychopathology may affect insight in ways similar to cognitive impairment with dementia. Individuals with personality disorders may have limited insight due to difficulties viewing themselves realistically (Klonsky et al. 2002; Lukowitsky and Pincus 2013). In particular, individuals with avoidant personality disorder (APD) may have limited awareness (i.e. inaccurate meta-perceptions) about how others perceive their

behaviors during social interactions. APD shares several common diagnostic and theoretical features with generalized social anxiety disorder (Cox et al. 2009; Eikenaes et al. 2013). Similar to individuals with social anxiety disorder (Gilovich and Savitsky 1999; Foa et al. 1996), individuals with APD overestimate the extent to which their internal mental process and external behaviors are noticed by others. Research by Rodebaugh and colleagues (2011) demonstrated that self-reported interpersonal difficulties made by individuals with APD are biased by self-critical appraisals. Individuals with APD rate their social interactions from their own perspective - focusing on their own negative feelings regarding social interactions. In contrast, informant ratings of individuals with APD are heavily influenced by distant and nonassertive behaviors. This example highlights the differences in perceptions that may contribute to discrepancies between self- and informant-reports for individuals with APD.

In contrast to individuals with APD, research suggests that individuals with other personality disorders can reframe their behavior and perspective; as a result of reframing, these people may offer more valid reports of their symptoms. The correlation between self- and informant-reports, for example, increases when individuals with personality disorders are asked to rate their symptoms according to how others view them (Klonsky et al. 2002). This ability to alter self-report ratings to be more congruent with informant-reports indicates that individuals with certain personality disorder may have accurate meta-perceptions about how others view their behaviors. For example, individuals with narcissistic personality disorder may be aware that others view themselves less favorably than their own self-views and their positive first impressions deteriorate over time (Carlson et al. 2011). Further, self-report research indicates that individuals with psychopathic personality traits may not be prone to under-reporting their symptoms (Ray et al. 2013; Watts et al. 2016). However, other research indicates that for individuals with above-average levels of psychopathic personality traits, the correlations between self- and informant-reported symptom severity levels were high and even higher than the correlations between psychopathic symptom severity and the harm they perpetrate (Jones and Miller 2012). The evidence indicates that people with certain personality disorders may be aware that their perception differs from others' opinions, but unaware of the harm created by the differences.

Other emotional and cognitive symptoms can influence the presentation or perception of problems to individuals and outsiders who are observing them. First, the validity of self-report may be affected by the changes in an individual's general distress or mood (Clark and Watson 1991). Individuals affected by psychopathology may be overly sensitive to stressors, may report greater severity of symptoms due to this sensitivity, or may over report symptom severity to obtain help. Second, someone with psychopathology can behave in a

way that alters the perspective and, as a result, the validity of informants observing him or her. Coyne (1976), for example, described depression as an overt and persistent set of behaviors that pushes others away. Evidence suggests that clinically depressed individuals act in a manner that solicits negative feedback from surrounding people (an element of self-verification theory; Giesler et al. 1996; Kwang and Swann 2010; Swann et al. 1992). Psychopathology, therefore, creates a more reactive situation for the person and the observer that affects the correspondence of their reports.

When Clinical Assessments May Benefit from Using Multiple Informants

While the prior two sections provide evidence for the prominent role of context and insight in multiple informant assessments, our review moves forward to provide practical guidelines as to *when* multiple informants should be collected. To begin, researchers and clinicians may use actuarial methods to determine if information should be collected from multiple informants. Comparing a sample or individual's relevant demographic characteristics to normative distributions can help determine symptom base rates (Meehl 1954) and the likelihood that information should be collected from different sources. At the nomothetic (research) level, many studies target specific populations such as individuals with intellectual disability. The diagnosis of intellectual disability requires an individual to have intellectual and adaptive deficits that interfere with daily activities (APA 2013). An intellectual deficit is demonstrated when an individual has a standardized intelligence test score that falls at, or below, the 2nd percentile - approximately two standard deviations below average- when compared to their same aged peers. Researchers may decide to collect information on adaptive functioning from multiple informants because individuals with impaired intellectual abilities have limited awareness of the frequency and generalizability of their symptoms (Finlay and Lyons 2001). At the idiographic (clinical) level, knowing only an individual's age and gender - information that may be collected via telephone

prior to the first appointment - may substantially influence the decision to collect information from multiple informants. Referring back to our elderly woman, a clinician may adjust their assessment routine before meeting her for the first time based on her age. The prevalence rates for dementia in 71 year-old females is 4.76% versus 27.84% in 81 year-old females (Plassman et al. 2007). Thus, as the elderly woman's age increases, so does the likelihood that multiple informants will be used in her assessment. Base rate estimates, when available, may be used to guide these decisions well in advance of assessment.

Only in situations where either context or insight is relevant to a person's symptoms are the extra time and effort of obtaining multiple informants warranted. The following 2×2 matrix (see Table 1) outlines when to use multiple informants to determine the generalizability or validity of symptom reports. Although we provide examples from a broad range of psychopathology to demonstrate use of the 2×2 matrix in a variety of nomothetic (research) and idiographic (clinical) situations, it is important to note the examples are only a small sample of the many possible assessment situations that may benefit from using multiple informants.

Relevant Context/Relevant Insight Multiple informants may provide unique information in assessments where both context and insight are relevant. In these circumstances, context is relevant because an individual's symptoms vary considerably across settings (i.e. demonstrate low generalizability). Insight is relevant because the individuals have limited self-awareness into their own symptoms or psychopathology. For example, high functioning masculine depression may typify situations where context and insight are relevant. In this situation, men may express their depression in the form of anger outbursts in a strategic attempt to present themselves in a more favorable light - such as in workplace settings (e.g., Addis 2008; Addis and Cohane 2005). Compared with women who are depressed, men who are depressed are less able to accurately recognize, and therefore report, their emotional states - a symptom that interferes with their insight into

Table 1 Matrix outlining when clinical assessments may benefit from collecting information from multiple informant sources

		CONTEXT	
		Relevant (symptoms differ across contexts)	Irrelevant (symptoms do not differ across context)
INSIGHT	Relevant (lacks insight)	Multiple informants necessary to determine contextual specificity and as a validity check. - Example: Relatively high functioning while depressed.	Multiple informants not necessary to determine contextual specificity, but necessary to serve as a validity check. - Example: Populations with compromised cognitive capabilities (i.e. severe psychosis).
	Irrelevant (has insight)	Multiple informants necessary to determine contextual specificity, but not necessary for validity check. - Example: Adult ADHD.	Multiple informants not necessary to determine contextual specificity or as a validity check. - Example: Subtypes of obsessive-compulsive disorder.

their depression (Carpenter and Addis 2000). Collecting information from multiple informants can help determine the contextual specificity of their symptoms and serve as a validity check for poor emotional insight.

Irrelevant Context/Relevant Insight Multiple informants may also be useful in research and clinical situations where only insight is relevant to the assessment process. During these situations, context is irrelevant because an individual's symptoms are relatively stable across settings. Insight is relevant because the individual lacks awareness of their symptoms - as is typified in adults with limited cognitive capacity (e.g. individuals with dementia, personality disorders, or severe psychopathology). Individuals with chronic psychosis exhibit symptoms and subsequent functional impairment across many settings in their life. Psychosis substantially limits an individual's ability to engage in socially appropriate conversations, form close relationships, and achieve social goals (Bellack et al. 2007; Couture et al. 2006). Even when psychotic symptoms are in remission, individuals have difficulty engaging in socially appropriate interactions at home (e.g. spouse or parent), work (e.g. manager or employee), and in the community (Bellack et al. 2007). In addition to affecting behavior across a wide variety of contexts, psychosis limits the validity of symptom reports by reducing insight (Amador et al. 2005, 1994; Beck et al. 2004). Psychosis limits insight because it creates a generalized cognitive impairment with associated disorganized thought patterns, memory deficits, inattention, poor emotion regulation, and inability to monitor and control ongoing mental activities (David et al. 2012; Fioravanti et al. 2005; Quee et al. 2010). In this situation, multiple informants can be useful to serve as a validity check for symptoms.

Relevant Context/Irrelevant Insight Multiple informants may also be useful for assessments where only context is relevant. In these situations, an individual's symptoms do not generalize across situations, but there is insight into the variability and nature of these symptoms. An individual who has adult attention-deficit/hyperactivity disorder (ADHD) may be one example of an assessment situation where context is relevant but insight is irrelevant. As is the case with many children with ADHD (Zametkin and Ernst 1999), adults may experience fewer symptoms in highly structured or novel, engaging situations. Therefore, the individuals show symptoms of ADHD in one context, but not another. For instance, the individual may exhibit more symptoms when at home with her or his family, as opposed to when she or he presents for a clinical assessment with a psychologist. In this scenario, multiple report sources may provide researchers with information on the generalizability of her or his symptoms. As mentioned earlier, many common self-report measures are designed to measure symptoms across time, not settings - a lack of

sensitivity that can be reduced in research settings by using information from multiple informants.

Irrelevant Context/Irrelevant Insight Collecting multiple informant information is not necessary when both context and insight are irrelevant to the assessment process. In these situations, an individual's symptoms are similar across settings and there is adequate insight into the generalizability and severity of these symptoms. Multiple informants would be redundant because they would demonstrate a high level of consistency with one another. For example, an individual with obsessive-compulsive disorder (OCD) may represent one example of when context and insight may be irrelevant to the assessment process. An individual has intrusive obsessions and compulsions across a variety of different contexts (Barlow 2008; Steketee 1993). They experience intense obsessive thoughts or "not just right experiences" related to control, symmetry, contamination, and safety (Bloch et al. 2008; Coles et al. 2003, 2005; Leckman et al. 1997). Their obsessions are manifested as a group of heterogeneous ordering, cleaning, and checking behaviors that are present across a wide variety of settings (Bloch et al. 2008) - making context largely irrelevant to the assessment process. Insight is also irrelevant for the individual suffering from OCD as there is awareness of the severity and nature of the symptoms. Research indicates that up to 85% of individuals with OCD have the insight necessary to produce accurate assessments of their own symptoms (Alonso et al. 2008) - indicating that using multiple informants would rarely be needed as a validity check for self-report.

How to Integrate Multiple Informants into Clinical Assessments

One of the primary obstacles to using multiple informants is determining *how* to best integrate their information into clinical research and practice (Hunsley and Mash 2005). At first glance, it may appear difficult to make sense of conflicting reports from different sources. We suggest a simple algorithm, or decision tree, for incorporating multiple informants into the assessment of psychopathology (see Fig. 1) - with the ultimate purpose of better understanding people and reducing diagnostic uncertainty.

The first and second steps in the decision tree require clinical researchers or practitioners to determine if either context or insight (respectively) is relevant to the assessment process. We recommend using multiple informants when either context or insight is relevant. Similar to the OTM, our model begins with determining the relevance of context and insight by reviewing normative research on an individual's symptoms or disorder(s). For example, an individual may self-report narcissistic symptoms that are subthreshold for clinical diagnosis.

obvious areas that may benefit from using multiple informants in the future. Unfortunately, there is relatively little empirical evidence to support or refute the practice of using multiple informants for many mental disorders, especially in adult populations. Further, empirical research rarely points in a unified direction - leading to confusion surrounding best assessment practices. In these cases, researching the relevant behavioral, social, and cognitive variables associated with a specific population may provide enough related evidence to make an informed decision about the use of multiple informants.

In the third step, informants should be chosen to maximize the differences between single and multiple information sources. When context is relevant, the primary assessment concern may involve an individual's symptoms in specific settings (e.g. at work or school). Therefore, the greatest utility comes from selecting informants who observe the individual in the relevant and targeted settings. When insight is relevant, using multiple informants serve as validity checks to counteract the biases that affect single sources. Ideally, the informant ought to have access to information about an individual's thoughts and feelings by social exchanges and inferences of these unobservable cognitive states are associated with behavioral outcomes. For example, most depressive disorders are characterized by internalizing symptoms that may include depressed mood, guilt, and worthlessness (APA 2013). Informants such as teachers or coworkers may not be able to observe these symptoms as readily as a spouse or close friend. In addition, leading depression theories such as emotion context insensitivity assert that individuals with depression may experience attenuated reactions to positive and negative cues in the environment - leading to flattened behavioral responses across a variety of contexts (Rottenberg and Johnson 2007; Rottenberg et al. 2005). Individuals who are less familiar with an individual may not be able to discern attenuated behavioral responses because they do not have enough experience to know an individual's "baseline" behavior levels. Without knowing an individual's baseline behavior levels, it is difficult to make a valid comparison supporting the attenuated emotional reactivity that occurs in individuals with depression. In contrast, informants who are familiar with the person's reported feelings may fail to report externalizing symptoms because of attribution biases - making informants who are less familiar with an individual better reporters of externalizing symptoms. Thus, familiarity cuts both ways and ought to be carefully reviewed before selecting informants.

The fourth step in the decision tree requires clinical researchers and practitioners to determine the extent to which multiple informants agree with one another. High agreement between multiple informants may produce an unexpected consistency indicating that the additional sources provided little new information beyond single informants. What can it mean when multiple informant-reports are unexpectedly consistent? There are several possible explanations for unexpected

consistency between multiple informant sources. Consider two of the more insidious reasons: 1) inaccurate clinical judgment, and 2) related or redundant constructs. First, the researchers or practitioners may have inaccurately determined if context or insight were relevant to their assessment process. The decision to use multiple informants should be guided by existing research. Unfortunately, existing research may be partial or conflicting - leaving researchers and practitioners unable to draw accurate conclusions about the potential benefits of using multiple report sources. Second, unexpected consistency between report sources can be the result of interference from constructs that are related to, but different from, the primary construct of interest. For example, researchers may be interested in conducting a study on individuals with anxiety, a disorder that is closely related to, but distinct from depression (e.g., McKnight et al. 2015; McKnight and Kashdan 2009). Anxiety and depression share a number of symptoms that include irritability, sleep disturbance, social withdrawal, relationship difficulties, and impaired performance at school or work. The researchers may be surprised if they collected information from multiple informants in different contexts where it was expected the symptoms would remain relatively invariant. However, the measures being used may be insensitive to distinguishing between anxious and depressive symptoms. Thus, unexpected consistency between informants could be caused by the measurement and rating of depression instead of anxiety.

If context and/or insight are relevant to the assessment process, an effective informant is chosen, and discrepant scores are found between informants, the question remains: How are multiple informants best integrated into clinical research and practice? The differences between clinical research and practice require that separate approaches be adopted to incorporate informant information in a meaningful and productive manner in both situations.

Using Multiple Informants in Research Settings

There are two broad approaches to research using multiple informants. One involves assessing and utilizing the agreement between informant reports, while the other emphasizes the disagreement between informant reports. A majority of previous research on multiple informants focused on determining the agreement (i.e. Converging Operations; De Los Reyes et al. 2013a, b) between different sources of information. The agreement is frequently assessed by either: 1) correlating self and informant reports with one another, or 2) using structural equation modeling (SEM) to represent the agreement as a latent variable or factor. Emphasizing the agreement between report sources sends an implicit message affirming the robustness of research methods and results. Researchers may be more confident they recruited a sample of individuals

with antisocial personality disorder if the sample contained people with multiple reports of significant antisocial symptoms. Contrast those multiple reports with a researcher who relied upon a single source reporting similar significant symptoms. While important for research, a singular focus on the agreement between information sources fails to provide practical guidance on how to interpret potential discrepancies between informant reports.

A growing body of research aims to provide researchers with more information to use when interpreting disagreements between informant reports. Similar to research focusing on the agreement between report sources, research focusing on the disagreement between report sources is divided into two primary methodologies. In the first method, researchers treat each informant report as a separate independent variable predicting clinical outcomes. Uher et al. (2012) used self- and clinician-reported depressive symptoms to predict future depressive symptoms one year later. Both sources of information provided additional predictive validity beyond one another. In the second method, the discrepancies between reports can be used as predictors or outcomes in a study (see De Los Reyes and Kazdin 2004 for a more comprehensive review). Research using discrepancy scores may guide practitioners on how to interpret differences between informant-reports. Interpreting discrepancy scores places more emphasis on the difference between reports values than the degree of symptom severity reported. High discrepancies may be indicative of better or worse functioning, malleability to intervention, or other factors. For example, De Los Reyes et al. (2010) found that, when compared to the overall levels of problematic behaviors reported by either adolescents or parents, the discrepancies between adolescent- and parent-reports of problematic behaviors was a better predictor of future adolescent problematic behavior.

Using Multiple Informants in Clinical Practice

Our framework identifies situations in which the diagnostic accuracy of adult psychopathology assessment may be improved by using multiple informants. Improving diagnostic accuracy by collecting information from multiple informants is already a routine practice when assessing childhood populations. Multiple informants are much less frequently used when assessing adults even though the benefits of collecting information from different sources are applicable to both child and adult populations. Consider a subtle but important distinction that highlights this similar applicability. Assessment guidelines for an adolescent two months from turning 18 suggests collecting information from multiple informants and yet two months later, the assessment would almost certainly rely solely on self-report. As a minor, the context and insight factors relevant to the assessment are most likely very similar to what the adolescent would experience two months later as an

adult. However, these standard assessment guidelines and associated procedures change dramatically as the individual transitions from adolescence to adulthood. The logic in that assessment change does not match the logic underlying multiple assessments.

Using information from multiple informants ought to improve both the reliability and validity of clinical treatment evaluation. Accurate clinical assessments are directly related to accurate research conclusions. Research conclusions that are based on limited information from one source may contribute to inaccurate outcomes. Empirically supported treatments (ESTs) for psychopathology are a growing emphasis in psychology. One of the foundational principles of EST research states that therapies differ in their efficacy and effectiveness depending on the type of psychopathology (Chambless and Ollendick 2001); psychodynamic therapy is effective for treating depression but not for treating bulimia (Cuijpers et al. 2008; Poulsen et al. 2014). Psychopathology must be accurately assessed and diagnosed to determine the EST that is most likely to reduce an individual's symptoms and improve the quality of her or his daily life. In addition, accurate assessments of participants' symptoms are needed to conduct psychotherapy outcome research on new ESTs.

The focus from our perspective remains solely with the symptoms - not the configuration of those symptoms that lead to a specific diagnosis. Many before us provided ample justification for assessing inter-rater and inter-observer reliability for diagnostics. Our contention here is that a focus on improving symptom identification and severity leads to better diagnostic decisions regardless of the structure (i.e., DSM, ICD-10, etc.). By focusing on symptoms, we hold that multiple informants may provide benefits to the assessment process.

Conclusion

An important aim here was to simplify a pre-existing, valuable multiple informant decision model (OTM; De Los Reyes et al. 2013a, b). We focused on two theoretical "superordinate" factors - context and insight - that determine whether one should use multiple informants to improve diagnostic accuracy in adult clinical assessments. We organized the factors relevant to assessing context and insight into a theoretical framework that identified the causes of inaccurate, or incomplete, reporting and the subsequent utility of using multiple informants. The simplified, two-factor model may account for the discrepancies between single and multiple informants better than models that fail to take context and insight into consideration.

Compliance with Ethical Standards

Conflict of Interest Lisa A. Alexander, Patrick E. McKnight, David J. Disabato, & Todd B. Kashdan declare they have no conflicts of interest.

Experiment Participants We did not collect data from participants in this study.

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Ethical Approval This article does not contain any studies with human participants or animals performed by any of the authors.

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