Validation of the Measurement Approaches to Partnership Success (MAPS) Questionnaire

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Abstract

Conceptualizing and testing factors that contribute to the success of community–academic partnerships are critical to understanding their contributions to the health and well-being of communities. Most measures to date focus on factors that contribute to the development of *new* partnerships, and only a few have been adequately tested and validated. *Methods.* The Measurement Approaches to Partnership Success (MAPS) study followed a community-based participatory research (CBPR) approach and a multiphase process that included the construction and pilot testing of a questionnaire, and a national survey to validate the psychometric properties of the questionnaire in long-standing CBPR partnerships (existing ≥ six years). All members within partnerships were recruited to complete the survey (55 partnerships with 563 partners). We used confirmatory factor analysis (CFA), Cronbach's alpha statistics, and a pairwise correlations approach to assess discriminant and convergent validity, and assessed internal consistency, and test–retest reliability. *Results.* All MAPS Questionnaire dimensions demonstrated strong validity and reliability and demonstrated agreement over time. *Conclusion.* The MAPS Questionnaire includes seven dimensions and 81 items related to the MAPS conceptual model and provides a scientific, in-depth measurement tool that allows long-standing CBPR partnerships to evaluate their work toward achieving health equity.

Keywords

community-based participatory research (CBPR), health equity, evaluation

Introduction

Community-based participatory research (CBPR) is an approach that strives toward understanding public health priorities in communities and emphasizes partnerships between academic and community members to create mutual learning, equitable engagement, power sharing, and skill development (Israel et al., 2013a; Wallerstein & Duran, 2010). CBPR processes build upon community strengths to define relevant health issues, identify appropriate methods for studying problems, and translate findings into interventions and policy change (Israel et al., 2013b). CBPR focuses on the social and physical environmental determinants of health where inequities have their roots and works toward closing the gaps that limit opportunities for health in communities (Wallerstein & Duran, 2006).

There are numerous conceptual frameworks to understand and evaluate how CBPR partnerships function (Israel et al., 2013a; Lasker & Weiss, 2003; Sofaer, 2001; Wallerstein et al., 2008) along with measures designed to define and assess key dimensions of these conceptual models (Boursaw et al., 2021; Israel et al., 2013a; Oetzel et al., 2018; Sandoval et al., 2012; Schulz et al., 2003). A key assumption is that the more effectively partnerships function along these key dimensions, the more likely they will meet their research goals and health equity outcomes (Nagorcka-Smith et al., 2022; Simmons

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et al., 2015; Ward et al., 2018). Hence, ongoing evaluation of the structure, process, and outcomes of CBPR research partnerships, along with their fidelity to the guiding principles of CBPR, such as shared leadership, open communication, and trust, is essential to understanding how CBPR partnerships achieve desired health outcomes (Hicks et al., 2012; Israel et al., 2020; Luger et al., 2020; Reese et al., 2019; VanDevanter et al., 2011).

Most existing CBPR measures focus on factors that contribute to the development of newly formed partnerships (e.g., communication and trust), and of those, only a few have been adequately tested and validated (Oetzel et al., 2015; Sandoval et al., 2012; VanDevanter et al., 2011). Partnerships that have achieved longevity may hold important insights that aid in clearly understanding and measuring CBPR partnership success. To the best of our knowledge, there are no validated measures that assess factors and conditions contributing to success in long-standing CBPR partnerships (Faridi et al., 2007). Identifying and measuring factors that contribute to the success of long-standing CBPR partnerships can not only further the science and practice of CBPR, but also provide an important mechanism for partnerships to evaluate their work toward achieving long-term success and health equity.

The Measurement Approaches to Partnership Success (MAPS) study, guided by the conceptual framework presented in Figure 1, seeks to (1) define and develop a questionnaire to assess CBPR partnership success and contributing factors in long-standing partnerships; (2) test the psychometric qualities of the questionnaire in a sample of long-standing CBPR partnerships; (3) develop mechanisms to feed back and apply partnership evaluation findings; and (4) widely disseminate the feedback tool in a readily accessible and usable format. An overview of the study is available in the article by Israel et al. (2020).

This paper focuses on methods and results related to the first two objectives of the MAPS study as described above, which assess the validity of the MAPS Questionnaire aimed at measuring partnership success. Methods for assessing the validity of the MAPS Questionnaire are described below, including validating the construction of the MAPS Questionnaire (face validity, content validity, and construct validity) and psychometric methods used to analyze the results of administration of the questionnaire in 55 long-standing (in existence greater than 6 years) CBPR partnerships (completed by 563 partners) across the nation (convergent and discriminant validity, internal consistency, and test–retest reliability).

Methods

Using a CBPR approach and an exploratory sequential mixed methods design (Creswell & Plano Clark, 2007), the MAPS study followed a multiphase process that included the construction and pilot testing of a questionnaire, and a national survey to validate the psychometric properties of the questionnaire. A nationally

Impact Statement

Assessment using the MAPS Questionnaire can aid partnerships by providing an in-depth picture of partnership functioning, achievement of outcomes, and ultimately success, focusing on both equity within the partnership and overall health equity in communities.

diverse 16-person Expert Panel (see Acknowledgements) of community and academic experts in CBPR partnerships participated in all aspects of the study, and their perspectives are integrated throughout. The MAPS study was carried out through the Detroit Community-Academic Urban Research Center (Detroit URC), a CBPR partnership established in 1995 aimed at fostering and supporting CBPR partnerships to understand and address health inequities in Detroit. The Detroit URC is guided by a Board composed of eight community-based organizations, two health and human service organizations, and an academic institution (see Acknowledgements) (Israel et al., 2001). The study protocol was reviewed by the University of Michigan Institutional Review Board (IRB) and determined to be exempt from ongoing review.

Construction of the MAPS Questionnaire

We conducted semi-structured key informant interviews with all 16 members of the Expert Panel and five other CBPR experts involved in pilot testing (*n*=21) to identify relevant dimensions and indicators of intermediate and long-term outcomes and partnership success. Interview protocols followed the conceptual model in Figure 1 developed by Schulz et al. (2003), Lantz et al. (2001), and Israel et al. (2012, 2013), which illustrate the factors important for understanding and assessing the effectiveness of the CBPR partnership process.

In addition to questions on key dimensions of our conceptual model, we asked panel members to share their definitions of success in long-standing CBPR partnerships and discuss whether there was a distinction between success and intermediate and long-term outcomes, that is, to what extent is there success over and above long-term outcomes. Based on data gathered through the key informant interviews, combined with results from a comprehensive review of partnership measures in the literature, and a scoping review (Brush et al., 2020; Israel et al., 2020), the research team drafted the first iteration of the MAPS Questionnaire composed of 96 items across seven key dimensions: equitable relationships (22 items), partnership synergy (7 items), reciprocity (9 items), competence enhancement (12 items), sustainability (18 items), a realization of benefits over time (17 items), and achievement of partnership goals/outcomes (11 items). While not the focus of this validation study, the MAPS Questionnaire included an additional 28 items that were associated with Partnership Structure and Group Dynamics to examine constructs related
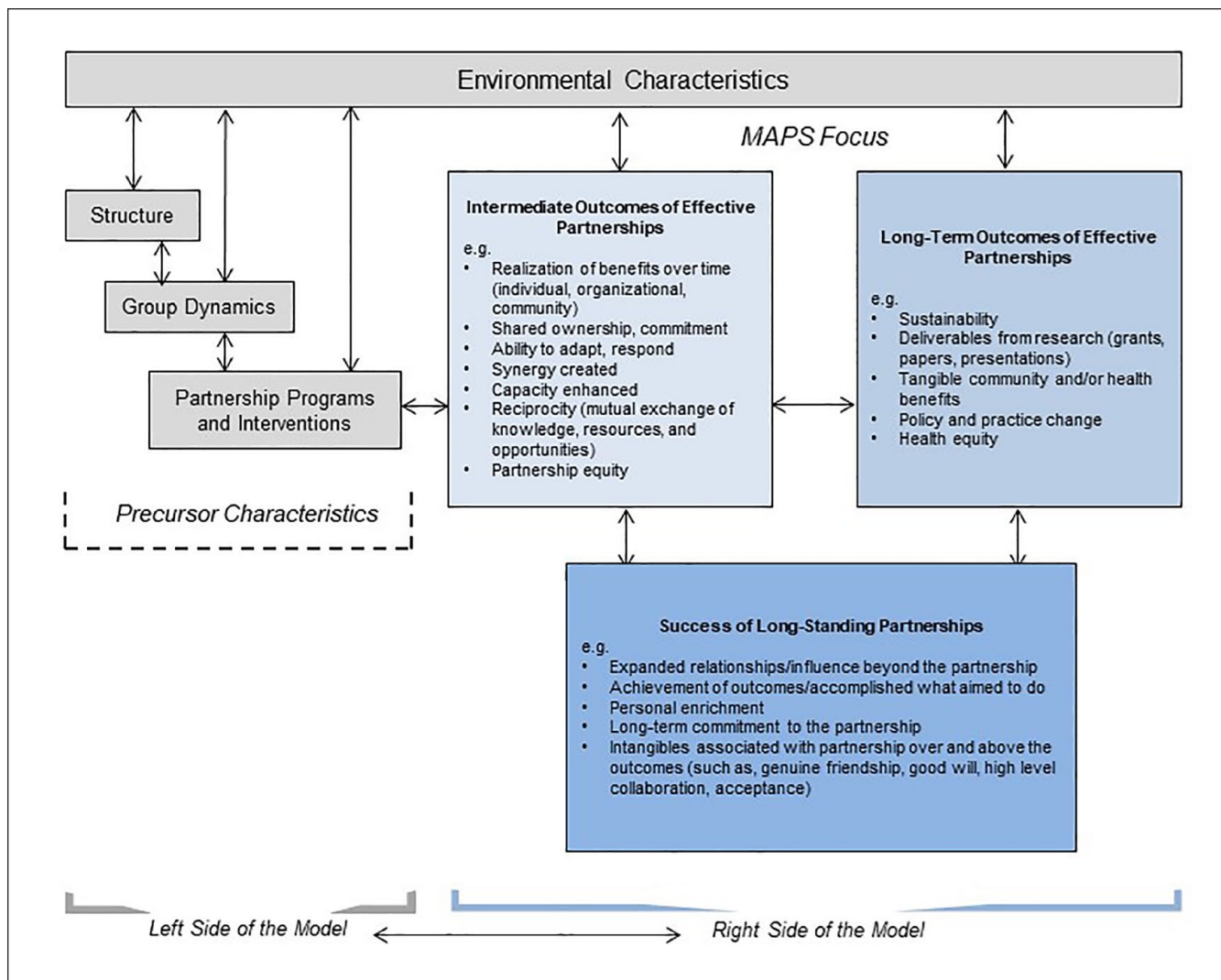
Figure 1. MAPS conceptual model: Conceptual framework for understanding and assessing success in long-standing community-based participatory research partnerships.
Source. Adapted from original model by Lantz et al. (2001), Schulz et al. (2003), and Israel et al. (2020, 2013a, 2001), drawing upon the work of Lasker and Weiss (2003), Sofaer (2001), and Wallerstein and colleagues (2008).

to partnership outcomes and success in relation to constructs relevant to partnership development (see Figure 1).

A three-round Delphi process was then conducted with the Expert Panel to rank the importance, appropriateness, and clarity of the draft MAPS Questionnaire item pool (Brush et al., 2022). The first two rounds were conducted by email using Qualtrics survey software (Qualtrics, 2005), and the third round was conducted over two days in a facilitated face-to-face meeting, providing opportunities for deeper discussion, refinement of wording, and reaching consensus on the definitions and the face validity of items. The intent was to reach a shared understanding, or construct a "collective truth," of the rationale for identifying and prioritizing items to be included in the questionnaire for further validation.

The resulting item pool from the Delphi process was further refined through cognitive interviews and pilot testing. We conducted cognitive interviews with six individuals from two long-standing CBPR partnerships (four community partners and two academic partners) to help identify potential sources of response error and improve the readability of the MAPS Questionnaire. The cognitive interviews addressed question comprehension, retrieval of relevant information from memory, and mapping of the response process. Information from the cognitive interviews informed changes in the wording of several items to reduce ambiguity and increase face validity.

The revised questionnaire was then piloted with CBPR experts from the Detroit URC (three community and one academic member) and the Expert Panel (one community and two academic members). Pilot testing enabled the team to

assess survey administration logistics, questionnaire length and flow, and respondent burden.

Psychometric Analyses of the MAPS Questionnaire

Recruitment and Data Collection. To test the psychometric qualities of the MAPS Questionnaire, we conducted purposive sampling and identified 272 long-standing CBPR partnerships based on a scoping literature search and referrals through personal networks (via listservs, emails, flyers, and word-of-mouth) for recruitment into the MAPS study. We initially excluded 192 partnerships based on eligibility criteria, which included that partnerships (1) were in existence for at least 6 years and continued to operate (corresponding to a year beyond the usual 5-year cycle for federal funding, indicating success of partnerships in extending beyond a single funding period); (2) followed CBPR principles and norms as noted by Israel and colleagues (2019); (3) conducted ongoing partnership evaluation; (4) showed evidence of dissemination of the partnership's work; and (5) consented to participate.

Of the 80 partnerships screened by phone for inclusion, 17 additional partnerships were deemed ineligible based on the inclusion criteria. Secondary inclusion criteria were used to ensure that we collected a diverse sample for participation based on geographic location, partnership size, health issues addressed, and demographics of the communities involved.

To ensure a comprehensive assessment of partnership success, we recruited all members of each partnership to participate in the survey. Based on power calculations, we determined that a final sample of 55 partnerships, with an average of 13 members per partnership for 715 survey respondents, was needed to achieve 80% statistical power (Anthoine et al., 2014; Osborne & Costello, 2004) and ensure that the statistical psychometric methods would provide robust estimates of reliability and validity for our instrument. Through the screening process, 17 partnerships were deemed ineligible based on the inclusion criteria, and 63 were enrolled. We intentionally recruited over our goal of 55 partnerships to maximize our chances of obtaining a complete sample. Over the course of the study, eight partnerships dropped out due to various circumstances, including organizational challenges, language barriers, and lack of response. This left the project with 55 partnerships and 563 partners, which met our recruitment goal.

The study team coordinated the launch of the survey with the point persons of participating partnerships to ensure their readiness. Agreement for participation from the partnership leaders included a commitment to engage all individual partnership members to complete the survey. Partnerships were asked to complete the MAPS Questionnaire within 30 days, and regular survey progress updates were supplied to the partnership's point person. Incentives for participation in the MAPS study included a personalized data report and a monetary incentive to the partnership based on the response rate per individual partnership.

Descriptive statistics were calculated for all measures with scale and subscale scores computed based on means across items. Frequency distributions were inspected for each item of the survey. Non-response rates were assessed, and response patterns were identified. Missing rates were estimated and a complete case analysis was reported.

Statistical Approach to Instrument Validation. To ascertain the internal structure of the questionnaire and to evaluate the extent to which items designed to measure a particular dimension loaded on a single underlying construct (i.e., the dimension's uni-dimensionality), we used confirmatory factor analysis (CFA), Cronbach's alpha statistics, and correlations methods. CFA is a statistical technique used to verify the factor structure of a set of items and allows the researcher to test the hypothesis that relationships between observed variables and their underlying latent constructs exist (El-Den et al., 2020). We also used CFA to assess the uni-dimensionality of the MAPS Questionnaire dimensions. Cronbach's alphas were used to assess dimension reliability. Cronbach's alpha is a measure of the internal consistency of the item scores (i.e., the extent to which the scores for the items on a scale correlated with one another) and is a function of the inter-item correlations and the total number of items on a particular dimension (American Educational Research Association [AERA] et al., 1999; Schmitt, 1996).

For the test–retest analyses, we administered the MAPS Questionnaire to a random sample of 38 individuals from different partnerships within a 60-day period from their initial survey response. We inspected correlations within each MAPS dimension between the two time periods using Spearman's rank correlation coefficient, along with percent agreement. Crocker and Algina's *Introduction to Classical & Modern Test Theory* (Crocker & Algina, 1986, p. 133) states "Few, if any, standards exist for judging the minimum acceptable value for a test–retest reliability estimate." The acceptable value for this estimate depends on the purpose (e.g., if it is for a research paper, a lower bound of acceptability may be appropriate than if it is for deciding whether to put a child into a special needs program). Factors such as the time between tests and the types of samples also affect the reliability estimate. Ultimately, determining what is acceptable requires assessing the cost of different types of measurement errors.

Convergent and discriminant validity were assessed using a pairwise correlations approach to determine whether concepts or measurements that are supposed to be related (converge) are, in fact, related, and correspondingly unrelated (discriminant) concepts are, in fact, unrelated. Discriminant and convergent validity were assessed jointly for each of the MAPS Questionnaire dimensions.

Table 1. MAPS Partner (*N* = 563) and Partnership Characteristics (*N* = 55).

Partner characteristics (*n* = 563)	Frequency	Percent
Gender		
Female	393	69.93
Male	148	26.33
Non-binary	4	0.71
Other, not listed above	1	0.18
Prefer not to say	16	2.85
Education		
Less than high school completion	2	0.36
High school graduate or equivalent (e.g., GED)	10	1.78
Completed some college	28	4.98
Associate degree	21	3.74
Bachelor's degree	78	13.88
Completed some postgraduate	36	6.41
Master's degree	181	32.21
Doctorate, law, or medical degree	206	36.65
Ethnicity		
White	223	39.68
Black or African American	129	22.95
American Indian	13	2.31
Native Hawaiian	5	0.89
Pacific Islander	1	0.18
Latinx or Hispanic	60	10.68
Asian	49	8.72
Middle Eastern	2	0.36
Afro-Caribbean	1	0.18
More than one ethnicity	49	8.72
Other, not listed above	10	1.78
Prefer not to say	20	3.56
Affiliation		
Academic	228	40.50
Community	286	50.80
Other	49	8.70

Partnership level characteristics (*n* = 55)		
Length of partnership		
Between 6 and 10 years	20	36.35
Between 10 and 14 years	20	36.35
More than 14 years	15	27.30
Size of partnership		
Small (3–8 partners)	27	49.09
Medium (9–15 partners)	17	30.91
Large (16 or more partners)	11	20.00
Community type		
Rural	7	12.73
Suburban	1	1.82
Tribal	2	3.63
Urban	23	41.82
More than one type	22	40.00

Results

A total of 563 partners, nested within 55 long-standing CBPR partnerships, completed the survey between 2019 and 2021. We had an overall response rate of 90.8%, with an average response rate within partnerships of 93.9%. Table 1 displays the baseline characteristics of the partnerships, which represented 30 states and included five partnerships with tribal partners. Most of the enrolled partnerships included between 3 and 15 partners, reported being in existence between 6 and 14 years and were in urban areas. Partnerships overall were equally divided between community and academic partners with most reporting completion of at least one college degree. Partners were predominantly female (69%), 40% were White, 23% were Black or African American, and 11% were Latinx or Hispanic.

The final MAPS Questionnaire consists of 81 total items under seven key dimensions: Equity in the Partnership; Reciprocity; Competence Enhancement; Partnership Synergy; Sustainability; Realization of Benefits Over Time; and Achievement of Long-Term Partnership Goals/Outcomes. These key dimensions of the MAPS Questionnaire reflect reported indicators of success at the partner and partnership level and how these influence broader partnership outcomes. These dimensions are defined in Supplemental Appendix A.

Validation of the Instrument

Table 2 displays descriptive analyses and results of factor analysis and goodness of fit tests for the MAPS dimensions. For most dimensions, we obtained one eigenvalue larger than 1. For those with more than one eigenvalue larger than 1, the first eigenvalue was much larger than the others, which provides evidence for one primary latent construct for each of the dimensions, suggesting uni-dimensionality. Items for all of the MAPS dimensions accounted for a large proportion of the variance. Thus, we considered the parallel models for the confirmatory factor analysis.

The adjusted goodness of fit index (AGFI) ranged between 0.5 and 0.8, with a value of over 0.8 generally indicating an acceptable model fit or fit between the hypothesized model and the observed covariance matrix, adjusted for the number of indicators of each latent variable. All the AGFI values for the MAPS dimensions were moderately good to good, providing additional support that each MAPS dimension corresponds to a single underlying concept. The overall results of these factor analyses supported the uni-dimensionality of each of the MAPS dimensions.

Table 3 displays the correlation matrix for the items in the MAPS reciprocity dimension with all other MAPS dimensions. This matrix provides information related to the construct validity of the MAPS items by offering information specifically about convergent and discriminant validity. Using the MAPS reciprocity dimension convergent and divergent validity measures as an example, on the far left are the six items contained in the reciprocity dimension. As highlighted, the items are shown in order from the highest to the lowest level of convergence. The non-highlighted columns correspond to all other dimensions measured in the MAPS Questionnaire. As can be seen, the numbers within the reciprocity dimension go from a high of 0.83 to a low of 0.66.

Table 2. Confirmatory Factor Analysis, Cronbach's Alpha, and Dimension Descriptives of MAPS Questionnaire.

MAPS Questionnaire dimension	Number of items	N	Mean + STD	(Min–Max)	Cronbach's alpha (95%CI)	EFA eigenvalues		CFA: adjusted GFI (AGFI)
						Eigenvalues	% total variance accounted for by each factor	
Equity in the partnership	23	563	4.58 ± 0.48	(1.65–5)	0.94 (0.94, 0.95)	11.04; 168; 1.45	48.01; 7.30; 6.33	0.55
Reciprocity	6	563	4.07 ± 0.37	(2.15–4.3)	0.85 (0.83, 0.87)	3.54	59.16	0.76
Competence enhancement	11	563	4.52 ± 0.57	(1.1–5)	0.91 (0.90, 0.92)	6.07	55.15	0.80
Partnership synergy	7	563	4.70 ± 0.48	(1–5)	0.89 (0.87, 0.90)	4.34	62.07	0.71
Sustainability	16	563	4.51 ± 0.50	(1.95–5)	0.90 (0.89, 0.91)	6.94; 1.49; 1.08	43.44; 9.33; 6.97	0.62
Realization of benefits over time	8	562	4.51 ± 0.53	(2–5)	0.84 (0.82, 0.86)	3.94	49.25	0.82
Achievement of long-term partnership goals/outcomes	10	562	4.37 ± 0.62	(1.3–5)	0.91 (0.90, 0.92)	5.65	56.52	0.73

Note. MAPS = measurement approaches to partnership success; CI = confidence interval; CFA = confirmatory factor analysis; EFA = Exploratory Factor Analysis; GFI = goodness of fit index; STD = Standard Deviation.

Table 3. Convergent and Divergent Validity of the MAPS Dimension of Reciprocity.

Reciprocity

Items	Equity in the partnership	Reciprocity	Competence enhancement	Partnership synergy	Sustainability	Realization of benefits	Achievement of goals
Q53. Partners incorporate the ideas, skills, and abilities of one another.	0.667	0.827	0.634	0.655	0.559	0.545	0.571
Q54. Partners recognize each other's expertise.	0.565	0.787	0.526	0.595	0.439	0.451	0.463
Q52. Partners are a resource for each other.	0.594	0.780	0.573	0.610	0.549	0.541	0.518
Q56. Over time, all partners exchange their expertise within the partnership.	0.634	0.777	0.621	0.627	0.556	0.510	0.589
Q57. Partners support each other outside of partnership activities (for example, attend events, celebrate partner's achievements, and provide letters of support).	0.564	0.757	0.534	0.569	0.461	0.478	0.490
Q55. The exchange of expertise among partners may vary at different points in time in the partnership.	0.482	0.659	0.483	0.465	0.454	0.464	0.428

Note. MAPS = measurement approaches to partnership success.

While there is some variance, scores are relatively consistent with one another, demonstrating convergent validity. Also, the Cronbach's alpha values related to the reciprocity dimension do not show similar correspondence with the other dimensions in the MAPS Questionnaire, demonstrating discriminant validity. As shown in Table 3, these findings related to the reciprocity dimension are consistent across all other dimensions in the MAPS Questionnaire.

Convergent and discriminant validity are further demonstrated in Supplemental Appendix B, which shows the correlations within and between all of the MAPS dimensions. Each dimension demonstrates similar patterns of convergent and discriminant validity with positive and moderate correlations with the corresponding dimension and lower correlations across other dimensions.

Test–retest methods evaluated the property of repeatability of the MAPS Questionnaire when taken at two different times. Overall, the correlations are satisfactory ($r > 0.6$), supporting the repeatability quality of most MAPS dimensions. Correlations for the reciprocity and synergy dimensions were not as high. When assessing percent agreement, the values range from 86.3% to 97%, indicating that when applied over time, item responses show consistent measurement of the dimension (see Supplemental Appendix C).

The overall final conclusions of our validation analyses of the MAPS Questionnaire are as follows: (1) all items are adequate measures for the dimensions both separately and together; (2) all items identified for each dimension cluster on one single latent construct; (3) all dimensions have strong internal reliability; (4) all dimensions have strong convergent validity and discriminant validity; and (5) dimensions demonstrate agreement over time, with most showing satisfactory test–retest reliability.

Discussion

This study provides evidence for the validity and reliability of the 81-item MAPS Questionnaire as it relates to the MAPS conceptual model (Israel et al., 2020). This evidence contributes to the CBPR literature and provides measures with strong psychometric properties that can be used to measure CBPR partnership functioning and facilitate efforts needed to achieve and maintain partnership success.

Strengths of this study include a comprehensive approach to questionnaire design and the recruitment of long-standing CBPR partnerships for testing the questionnaire. The choice of recruiting long-standing CBPR partnerships allowed the questionnaire to be applied to partnerships demonstrating at least one key dimension of success: operating as a partnership beyond at least one typical funding period. Because this criterion was demonstrated in the MAPS partnerships, we expected to find highly functioning partnerships, and consequently expected that their reinforcement of these measures of intermediate and long-term outcomes and success might inform younger, less experienced partnerships in working toward achieving similar success.

In addition to the successful recruitment of long-standing CBPR partnerships, the MAPS study achieved another milestone in CBPR partnership measurement by recruiting all partners within each partnership. This all-encompassing recruitment approach constitutes a departure from most studies of partnerships that often enlist a subset of partners, in many cases recruiting only two partners (one community, one academic), which can under-represent and possibly bias the results. The MAPS study demonstrated a high response rate both between and within partnerships, and therefore represents this broad spectrum of partner perspectives. In addition, the engagement of the Expert Panel in the in-depth interviews provided a diversity of both community and academic perspectives and informed the research team over and above what we might have achieved had we developed the first draft of the survey questionnaire based solely on the literature.

Taken together, our analyses show that, overall, the items in each of the MAPS dimensions can be explained by one factor. The items for the MAPS dimensions of reciprocity, competence enhancement, partnership synergy, realization of benefits over time, and achievement of the partnership's long-term goals/outcomes all loaded on a single factor and explained close to 50% of the total variance for the corresponding dimension. Items for the dimensions of equity in partnership and sustainability are each loaded on three factors. However, for these two dimensions, the first factor captured most of the total variance. The AGFI between the hypothesized models and the observed data shows the fit to be moderately good to good for all of the MAPS dimensions (Yaşlioğlu & Toplu Yaşlioğlu, 2020). Cronbach's alpha measures within each of the MAPS dimensions were high, indicating that items are closely related within these groups. This, together with measured convergent and discriminant validity within and across dimensions, supports the overall validity and reliability of the MAPS Questionnaire and the validity and reliability of each of the dimensions within the MAPS questionnaire.

The test–retest reliability methods aimed for repeated completion of the MAPS Questionnaire within a 60-day period, and most of the partnerships randomly selected for this process submitted their questionnaires within this period (84%). The window between the test and retest time recommended in the literature varies widely (Polit, 2014). The interval should be large enough that respondents are not likely to remember or be influenced by their first set of responses when providing their second set, and small enough that genuine differences in responses are not likely to have occurred (Yu, 2005). It is possible that the window between MAPS test and retest times may have been too long and therefore subject to influence by environmental factors. The MAPS team considered multiple factors, including the length of the questionnaire and the burden on partnerships when determining a feasible time period for the test–retest sequencing.

Limitations in this study included the cross-sectional nature, which did not allow for the predictive validity of the measures. The sampling method we used was suited to our interest in capturing observant, reflective members of the universe of long-standing CBPR partnerships who were knowledgeable about the process and outcomes of community-based partnerships and were both able and willing to share their knowledge. Although the use of a random sample would have the benefit of being able to generalize to the population of long-standing CBPR partnerships, no definitive and comprehensive list of such partnerships exists. Thus, we used a systematic process—including recommendations from the Expert Panel colleagues in the field of CBPR, databases of funded CBPR initiatives (e.g., NIH RePorter), and the literature—to determine partnerships that met the criteria for long-standing CBPR partnerships. The impact of the COVID-19 pandemic was evident toward the end of our recruitment period and there were a few partnerships that had lower participation rates due to COVID-19 impacting their communities. Although COVID-19 affected the participation in these partnerships, most of our recruitment was completed and data was collected before the start of the pandemic.

Ongoing evaluation of the structure, process, and outcomes of community–academic research partnerships is a key component in informing partnership activities, building community capacity, understanding the connection between innovative science and community implementation, and building accountability for health equity. Comprehensive evaluations need to examine factors related to the effectiveness of partnerships such as shared leadership, open communication, trust, and the ability to resolve conflicts, as well as adherence to guiding participatory principles. This is why, in addition to the emphasis on this as a validation study, we also included, as noted above, measurement items associated with Partnership Structure and Group Dynamics, in accordance with our conceptual model (Figure 1).

The MAPS Questionnaire is designed to be a comprehensive set of measures to assess partnership intermediate and long-term outcomes and success. It is intended to provide a starting point for a deeper assessment of partnership functioning. The MAPS tool as a whole, and within each of the MAPS dimensions, allows for both an overall assessment of partnerships and an opportunity to look at specific partnership dimensions separately. Assessment using the MAPS Questionnaire can aid partnerships by providing an in-depth picture of partnership functioning and help to initiate a dialogue among partnership members to identify strengths and weaknesses and address future directions and plans.

A MAPS facilitation guide has been developed to assist partnerships in their use of the MAPS Questionnaire (Brush et al., 2023). We are currently following up with MAPS partnerships to understand their experience with the MAPS Questionnaire and Facilitation Guide and are particularly interested in learning more about how the results of the MAPS Questionnaire and feedback reports were used to inform partnership functioning and what partnerships learned from these feedback experiences. With the plan to disseminate the MAPS Questionnaire and Facilitation Guide more widely, the next steps of our project include efforts to understand the utility, application, and generalizability of both the MAPS Questionnaire and Facilitation Guide. These efforts will help diverse CBPR, as well as other community-engaged research partnerships, evaluate partnership functioning, outcomes, and success on an ongoing basis.

In summary, and to our knowledge, the MAPS study is the first validation study of partnership measurement to comprehensively measure and reflect the perceptions of all partners within long-standing CBPR partnerships. The validated MAPS Questionnaire includes 81 items in seven dimensions related to the MAPS conceptual model and provides a scientific, in-depth measurement tool that may be used by CBPR partnerships at all stages of development in their efforts to achieve long-term success. Each MAPS dimension can be used separately from the entire questionnaire as long as all items within the dimension are included. Thus, it is our intent that the MAPS Questionnaire will provide a new, validated measurement tool that CBPR partnerships can use to assist in the measurement of partnership functioning and evaluate the effectiveness of their partnership in achieving intermediate and long-term outcomes and ultimately success, focusing on both equity within the partnership and overall health equity.

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