

Additional file 4. Assessment of methodological strengths and limitations.

Category of study designs		QUAL							QUAN														MULTI							MIX																						
First author [citation]	Methodological quality criteria	Jacobson [1]	Lester [2]	Mugomeri [3]	Okwera [4]	Selehelo [5]	Sibanda [6]	Wambiva [7]	Chang [8]	Naikoba [9]	Adepoju [10]	Ansa [11]	Khan [12]	Little [13]	Louqwaqie [14]	Mindachew [15]	Mugomeri [16]	Munseri [17]	Ngamvithayapong [18]	Szakacs [19]	Tram [20]	Van Ginderdeuren [21]	Aisu [22]	Chan [23]	Faust [24]	Horwood [25]	Kamuhabwa [26]	Lai [27]	Meribe [28]	Mwambete [29]	Durovni [30]	Gust [31]	Rowe [32]	Huerqa [33]	Kamuhabwa [34]	Jarrett [35]	Luyirika [36]	McRobie [37]	Okot-Chono [38]	Catalani [39]	Reddy [40]											
Screening questions (for all types of study designs)	S1	Y	Y	Y	Y	Y	Y	Y	U	Y	Y	Y	Y	Y	Y	Y	U	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	U	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y								
	S2	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	U	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y						
1. Qualitative (ethnography, phenomenology, narrative research, grounded theory, case study, qualitative description)	1.1.	Y	U	Y	U	Y	U	Y																																												
	1.2.	Y	Y	U	Y	Y	Y	Y																																												
	1.3.	Y	Y	Y	U	Y	Y	Y																																												
	1.4.	Y	Y	Y	Y	Y	Y	Y																																												
	1.5.	Y	Y	Y	Y	Y	Y	Y																																												
2. Quantitative (randomised controlled clinical trial, cluster or individual, randomised cross-over study)	2.1.								Y	Y																																										
	2.2.								Y	Y																																										
	2.3.								Y	Y																																										
	2.4.								N	Y																																										
	2.5.								Y	Y																																										
3. Quantitative (non-randomised studies, e.g. non-randomised controlled trials, cohort study, case-control study, cross-sectional analytical study)	3.1.										Y	Y	Y	N	Y	Y	Y	N	Y	N	Y	Y																													Y	
	3.2.										Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y																													Y
	3.3.										N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y																												Y	
	3.4.										Y	N	Y	Y	Y	U	Y	Y	Y	Y	Y	Y	Y																												Y	
	3.5.										N	U	Y	Y	Y	U	U	U	Y	Y	Y	Y	U																												Y	
4. Quantitative (descriptive, e.g. incidence or prevalence study without a comparison group, survey, case series, case report)	4.1.																						Y	N	Y	Y	Y	Y	Y	Y	Y																	Y				
	4.2.																						Y	Y	Y	Y	Y	Y	Y	N	U																		Y			
	4.3.																						Y	Y	U	Y	Y	Y	Y	N																				U		
	4.4.																						/	Y	N	U	U	Y	U	U																			N			
	4.5.																						/	/	/	Y	/	Y	/	Y																						
5. Mixed methods (convergent design, sequential explanatory design, sequential exploratory design)	5.1.																																																U	Y		
	5.2.																																																	N	N	
	5.3.																																																	Y	Y	
	5.4.																																																	Y	N	
	5.5.																																																N	Y		

A description of each methodological quality criteria is presented in the "Mixed Methods Appraisal tool" (MMAT, 2018) Hong, Q.N., et al. Mixed methods appraisal tool (MMAT), version 2018. IC Canadian Intellectual Property Office, Industry Canada 2018; Available from http://mixedmethodsappraisaltoolpublic.pbworks.com/w/file/attach/127916259/MMAT_2018_criteria-manual_2018-08-01_ENG.pdf.

Responses: Y - Yes; N - No; U - Unclear (Can't tell); / - Not applicable for this study.

Categories of study design: QUAN - quantitative design, QUAL - qualitative design, MIX - mixed methods design; MULTI - multimethod design.

Assessment summary - Risk of bias in individual studies

Among all studies reporting findings for CPT and IPT, more than half (57%, 50%) applied quantitative methods [8-29], followed by studies that applied a combination of methods (21%, 28%) [30-40] and those that applied qualitative methods (21%, 18%) [1-7], for CPT and IPT, respectively. Across all studies that combined quantitative and qualitative methods, most (80%) presented no methodological attempt to integrate phases, results, and data from both streams of evidence [30-32, 34-38]. Therefore, nine studies were categorised as multimethod studies [30-38] and two as mixed methods studies [39, 40]. According to the MMAT checklist, many included studies (n = 29) have methodological limitations in at least one of the quality criteria evaluated. Qualitative studies (including the qualitative component of mixed methods and multimethod studies) frequently failed to address and justify the qualitative approach applied (e.g. ethnography, phenomenology) [2, 4, 6, 30, 32, 34-38, 40]. Quantitative non-randomized studies frequently failed to address whether the intervention or exposure occurred during the study period as intended [10, 11, 15-17, 20]. Some studies also missed to provide reasons why certain eligible individuals chose not to participate [13, 17, 19]. Similarly, the risk of non-response bias was frequently not addressed across quantitative descriptive studies [24-26, 28, 29]. Overall, many studies' research question(s) lacked clarity and focus [8, 16, 29, 37-39].

We identified seven studies with methodological limitations in more than two of the quality criteria evaluated [29, 30, 36-40]. However, to gain a broader understanding of the barriers and facilitators to PT's, we did not exclude any study from our analysis regardless of the methodological limitations.

References (studies assessed using the MMAT tool)

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